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OPTIMISM TOWARDS SPACE ACTIVITY DESPITE PAST EARTHLY INJUSTICES

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By
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Introduction

Ever since the emergence of *Homo sapiens* in the neighborhood of Kenya some hundreds of thousands of years ago, humankind has engaged in exploration and settlement. From the steppes of Asia to the tundra of Alaska, from one Pacific island to another, from Europe to the Americas, people have trod, sailed, and flown all over the globe to live in new locations. Now, in this most recent phase of the history of humankind, humans have set their course beyond their old horizons, into the inky, star-studded blackness of outer space. What is the fate of humanity in this new era of exploration and settlement? Will we be doomed to repeat the patterns of our old ways in new territories, or will the change in particulars lead to a fundamental shift in the universal condition? After all, this planet's exploration and settlement has been marred with unfortunate episodes. The English in the early modern period present an example; they used religious justifications to essentially conquer, although their activities were called colonization,¹ the indigenous people of the Americas. Despite this and similar episodes, scholars and fiction writers alike are generally optimistic about the prospects of humanity's exploration of outer space. This paper will highlight good reasons to explore and settle outer space, including reasons of resource depletion and expanding human freedom. The basic argument of the paper is that, despite problematic episodes in the exploration and colonization of Earth, optimism towards space activity —

¹ Colonization has multiple meanings. According to the Salem Press Encyclopedia, "colonialism" refers to "a scenario in which a state or group has power over another territory and its people." On the other hand, the Merriam-Webster dictionary definitions do not mention the aspect of subjugation of indigenous people. This essay will use the term "colonization" in both senses, although predominantly the latter sense of simply settling a place (building homes, growing crops, etc) in which no people were living. The Oxford English Dictionary for "colonialism" refers to "alleged" exploitation of backwards people by great powers; the OED entry for "colony" does not refer to subjugation one way or the other, although both entries are marked as "not yet fully updated."

including exploration and colonization— is a common attitude in the scholarly world. This optimism cuts across many varieties of stances in many arguments in many genres of writing; in this way, space may be a kind of unifying factor across a diverse set of viewpoints.

The diversity of viewpoints is exemplified by the topics of resource depletion and religious impact. Resource depletion is a prevalent argument for space exploration among many thinkers. Some believe that the resources of the Earth will eventually be depleted; others believe that the Earth's resources are virtually limitless. Despite this variety of thought on the question of resource depletion, scholars on both sides of this debate can be found who support space activity. Another example where optimism towards space activity cuts across disagreements in other areas is religion. Some scholars argue that space activity will have essentially no basic logical impact on the practice of religion; others argue that space activity will have significant deleterious effects on human religion.

Religious arguments for space exploration, while present, do not hold as much sway (or necessity) as religious arguments for colonization in problematic historical periods. It is not difficult to demonstrate that religion was an important motivation in earlier periods that caused significant amounts of human suffering. Peter Harrison enumerated the religious reasons for English colonization of the so-called New World, a well-known episode of colonization on Earth. During that time, Europeans were setting sail to colonize the New World, which of course was new to them, but not to the people who were already living there. The English claimed that the indigenous peoples in their

colonies were “idle” and thus had forfeited their right to cultivate that land.² In general, this kind of attitude led to the termination of the natives or the expulsion of the indigenous people from their homes. Despite this obvious barbarity, many English wanted to emigrate, and justifications were readily fashioned to suit this movement.³ Chief among the Biblical warrants found for English colonization were Genesis 1:28. This Bible verse calls for humanity to be fruitful, and to multiply, and to subdue the Earth. In other words, it seems that this verse calls specifically to spread throughout the world and to transform that world. Other Biblical reasons for colonization detailed by Harrison include Moses’ and the Israelites’ exodus from Egypt to their Promised Land, which also was already occupied by various groups of people. The final Biblical argument for English colonization was Jesus’ call to preach the Gospel to all nations. It is unlikely that the negative consequences of displacement and genocide will be replicated in outer space. For one, no indigenous people are currently inhabiting many possible locations of colonization; for another, empire-building will be infeasible in those cases where extraterrestrials may be encountered. Furthermore, because of the evolution of religion and its relative unimportance in justifications for space activity, it is highly improbable that religion will create a dark tinge over space exploration efforts, as it did in the era of European earthly exploration.

Despite the specter of past exploration and exploitation episodes on Earth, which were partially fueled by religion, we see almost near-universal optimism and enthusiasm

² It is commonly accepted that this was not exactly the case, as at least in one notable instance it was the industry of the natives that saved English settlers from certain destruction. Furthermore, the English themselves were not known to be intrinsically paragons of industriousness; even at that time, overpopulation was feared, and blamed for the increasing “idleness” among those living in Britain. See Harrison 17.

³ Harrison notes that in Protestant countries, like England, Biblical reasons were more commonly cited than natural law arguments, as in Catholic countries like Spain. See Harrison 22.

for space exploration. No matter where people are coming from, the odds are good —although not absolute—that they favor space activity. In our society, people do not generally rely on religious arguments for space activity, although they are quite optimistic towards space activity.

In this new era, it would seem that human religion has moved from being an agent of exploration and colonization to an object; this indicates that a repeat of the scenario detailed by Harrison may not occur. Religion is not the prime motivator for space activity for most people; however, people are likely to continue being religious in one form or another. Thus, religion moves into a place of being acted upon. The predictions for the future of human religion in outer space are as varied as the angles and facets of religion itself. From this we can see that the conversation around these issues is diverse; this diversity leads to vigor. Interestingly enough, despite varied perspectives on the outlook of celestial religion, many scholars seem to be unequivocally in favor of additional exploration of outer space.

The diversity of outlook on religion, and other topics, vis-à-vis space exploration can be demonstrated by the differences between two collaborators in space activism, Robert Zubrin and Kim Stanley Robinson. Zubrin offers some credit to Judaism and Christianity for their recognition of the “divine nature of the human spirit”⁴ — which he links with exploration — whereas Robinson “rejects” Christianity.⁵ These two figures of the space activism community have disagreements in another area: resource depletion. Zubrin’s outlook is cornucopian in nature, whereas Robinson believes that

⁴ Robert Zubrin, *The Case for Mars* (New York: Free Press, 2011), 326.

⁵ Bud Foote, “A Conversation with Kim Stanley Robinson,” in *Science Fiction Studies* 21, no. 1 (March 1994), 57. <https://search.ebscohost.com/login.aspx?direct=true&db=lkh&AN=9410261177&site=eds-live>.

overpopulation is a major problem and resources could in fact be depleted. Despite these differences (the one about resource depletion being the more prominent in their writings), they both support human space activity. This is clearly evidenced by their collaboration in creating the Mars Society, an activist group advocating for the human exploration and settlement of Mars. The exploration and settlement of Mars, of course, is one of the most exciting near-term prospects for human space activity, and the Mars Society is a relatively well-known and important activist group advocating for it.

Robinson's primary work, his *Red Mars / Green Mars / Blue Mars* trilogy of novels, argues for space exploration and settlement for a large host of reasons. Robinson, as well as Mary Doria Russell, is a fiction writer. Robinson has been identified as a "licensed but non-practicing academic," whereas Russell's career has not primarily been in fiction writing but as an actual academic. Of course, the novels that these two individuals have written are in a genre that is distinct from the genre of scholarly writing. Nevertheless, their work is suitable material for processing in an essay such as this; in a way, their novels act as primary sources. Robinson's and Russell's novels explore in a creative fashion the issues raised by this essay. They demonstrate basically optimistic stances towards human exploration and settlement of space while remaining aware of the problems that have occurred in historical episodes of Earthly exploration.

Human Exploration of Outer Space

Schwartz and Zubrin both argue in favor of space activity, although they diverge on the question of whether space activity is a good idea because of resource depletion. First, Schwartz identifies the risk that humans will exhaust the Earth's resources. It

seems that the Earth comprises a finite volume and mass; if humans continue to utilize the resources of the Earth long enough, eventually humans will run out of resources and then perish. “We only have access to a limited supply of the resources that keep us alive.”⁶ This should be self-evident; the total mass of the Earth is remaining relatively constant. Because it is moral to do what can be done to continue the human race, we ought to undertake space exploration in order to gain the resources of outer space for utilization by humans. It must be admitted that Schwartz goes on to question his premise that the Earth’s resources will be exhausted. Schwartz experiments with several lines of reasoning regarding resource depletion. However, the point is that, in general, Schwartz believes that resource depletion has some merit as a genuine worry for humans living on Earth, and this should be a good reason for space activity. At least one other scholar — Robert Zubrin — believes this is not the case. Nevertheless, concordance occurs; both Zubrin and Schwartz argue in favor of space activity.

Schwartz also finds support for space exploration from the threat of asteroids. Now, in general, resource depletion is probably taken as a more imminent threat to the human race than the threat from asteroids. Even so, resource depletion probably will not happen for quite some time. Meteorite impacts, on the other hand, are understood to be a long-term threat. Meteorites have caused at least one major extinction event in Earth’s past, and possibly many more.⁷ Schwartz argues that people need to do what can be done to divert any more catastrophic asteroid impacts; thus, space exploration and colonization is called for. Humans could feasibly wield technology to physically

⁶ James S.J. Schwartz, “Our Moral Obligation to Support Space Exploration” *Environmental Ethics*, no. 1 (2011), 68.

<https://search.ebscohost.com/login.aspx?direct=true&db=edsgao&AN=edsgcl.255242560&site=eds-live>.

⁷ Zubrin, *Case for Space*, 291.

divert asteroids from such crashes. In this matter, Zubrin and Schwartz have strong concordance. Nevertheless, a distinction is present. In Schwartz's argument from asteroids, it is feasible that space activity could be put off for a long time. Zubrin, on the other hand, has so many reasons for space activity that space exploration should be undertaken immediately.

These discrepancies in the viewpoints of these two individuals on the timeliness of space activity repeats on the issue of solar burnout. Schwartz points out that the human sun will eventually "burn out" in many millions of years. If we wish to preserve the human species beyond that cataclysmic event, then we have no choice but to travel to and colonize other star systems. While it is uncertain when resources will be depleted or if a sufficiently large and powerful meteorite will destroy all life on Earth, it is certain that solar burnout will occur in the very far future. The point here is that despite their differences in their perceived timing of human activity in space, multiple scholars have come to a pro-space activity position.

In contrast to Schwartz, exuberantly pro-space Robert Zubrin has a significantly different take on resource depletion. Zubrin believes that the *belief* that Earth's resources are limited is a hindrance to human freedom. Zubrin builds up an argument that the German attempts to conquer Europe (and the world) in the early 20th century stem largely from a Malthusian-like proposition that resources are scarce and humans must battle each other in order to acquire them — leading to selfish, greedy conquests. Zubrin thinks that none of this needs to be.⁸ Humans are not like other animals in that we can "inherit" advantages through non-genetic means. In other words, we can create

⁸ Zubrin, *The Case for Space*, 301.

new ideas, implement them as inventions, and share them with everyone.⁹ This unique ability is demonstrated by humans' creation of vaccines against novel viruses, launching of spacecraft, use of nuclear fuel, and many other wonderful inventions. Humanity's creative nature thus offers a guarantee that Earth's resources will not run out for us (think of technological advances in recycling). "The more people—especially free and educated people—the more inventors, and inventions are cumulative."¹⁰ Although Schwartz's premise that the Earth's resources are limited leads Schwartz to advocate for space exploration, Zubrin rejects that premise and *still* reaches the conclusion that humans should travel the stars — not because Earth is limited, but to definitively prove to those who believe otherwise that they are wrong.

Zubrin goes farther in his reasons for space activity. All of his reasons are interconnected; just as the German hierarchy decided to wage war on false economic principles, so too are many people today at risk of being oppressed under undue mindless bureaucratization. As our history progresses, it seems that society is becoming more and more complex, and as a result, more and more authority is needed in order to run the place. However, humanity can only flourish when a part of it is free to develop on its own. Thus, if the Earth is bureaucratized, then space is the only place where humans can grow and thrive in freedom. "This opportunity to be the maker of one's world, instead of a mere inhabitant of one already made, is a fundamental form of human freedom..."¹¹ Space offers humanity tremendous opportunity for freedom.

Indeed, space is so vast that empire is unlikely: "a Type II civilization *might* [emphasis

⁹ Strictly speaking, some other species do this as well, although humans obviously are astronomically more creative in the number and complexity of our inventions.

¹⁰ Zubrin, *The Case for Space*, 304.

¹¹ Robert Zubrin, *The Case for Space* (New York: Prometheus Press, 2019), 321.

mine] ultimately become politically unified, but a Type III civilization cannot. The distances between the stars are simply too great for any kind of enforcement.”^{12,13} This combination of the call to freedom and the venue for its development is one of Zubrin’s empathetic arguments for space.

Red Mars is an example of the human imagination at work from a diverse, non-religious background creating reasons for space activity. While Zubrin has offered in the past a somewhat positive review of Christianity, Robinson, on the other hand, rejects Christianity. Robinson’s personal distancing from that religion positions him as a mind who creates a world with a very diverse religious landscape on a possible rendition of a colonized Mars. This diverse cultural, religious, and philosophical setting begins in *Red Mars* when Robinson depicts humans commencing to colonize and terraform the red planet, Earth’s most similar sibling. Even before the colonizers arrive, they engage in vigorous debate about what their new society should look like. Should the Martian society strive to be something entirely new and different from the Terran society; should the colonists start a kind of revolution? Or perhaps the Martian society should be a blend of all the best elements of the old Terran ways? Those are the questions that Robinson’s characters ask themselves and each other. Despite the colonist’s wildly different viewpoints, they have all decided that the best thing for them to do is engage in space exploration in a most extreme way. Robinson’s imagination of such debates highlights how humans can come together and favor space activity in

¹² Zubrin, *The Case for Space*, 322.

¹³ Zubrin defines a Type II civilization as one inhabiting an entire solar system and a Type III civilization as one inhabiting an entire galaxy. Another definition describes Type I as a civilization utilizing all of the energy of a planet, a Type II as utilizing all of the energy of a solar system, and a Type III as utilizing all of the energy of a galaxy.

spite of their differences, and create a new world, largely free of the problems and prejudices of their old world.

The focus on such political and social questions throughout the novel is a demonstration in fiction of the human hopes for freedom, as mentioned by Zubrin. During an intense discussion on the spaceflight to Mars, one of the first colonists, Arkady, says, “I say we should make those choices ourselves, rather than having them made for us by people back on Earth.”¹⁴ Arkady was referring to the kinds of institutions that might arise on Mars; another character was suggesting that the optimal institutions would arise evolutionarily. But Arkady disagreed, he wanted to take control consciously, which led to this quote that shows he did not want to be controlled by people on Earth.

Robinson argues that life on Mars will not suffer from the problem of oligarchical oppression that sometimes has occurred here on Earth. Arkady (and his fellow interlocutors) belonged to a group of one hundred colonists. Throughout this trilogy, Robinson refers to these people as the “First Hundred.” Curiously, the author happened to find out that a phrase in Chinese means both “old hundred names” and “commoner.”¹⁵¹⁶ The phrase is 老百姓 or, in Pinyin, *lǎobǎixìng*. In other words, it is possible that Robinson was creating a play on words across multiple languages in selecting such an unusual phrase as “First Hundred” for the earliest colonists to Mars who are also determining the fate of that planet. Those who are “first” in a history of a place will necessarily become the oldest, of course. Thus, commoners — that is how

¹⁴ Kim Stanley Robinson, *Red Mars* (New York: Del Rey Books, 1993), 88.

¹⁵ Carrie Gracie, “Old 100 Names: Witnesses of China’s History,” October 18, 2012, <https://www.bbc.com/news/magazine-19990467>.

¹⁶ Julie Kleeman and Haijiang Yu, *The Oxford Chinese Dictionary: English-Chinese - Chinese English*, s.v. “*lǎobǎixìng*,” (New York, NY: Oxford University Press, 2010), 434.

Robinson names those who are establishing a new world on Mars. This is evidence that the human imagination envisions a future in space distinct from the problems that Earth has historically undergone, such as oligarchical oppression. The “First Hundred” is an example of how the human imagination anticipates a future in space free from the problems of historical episodes of exploration and exploitation.

Robinson offers an optimistic solution to the problem of resource depletion by giving his characters control over the transportation of valuable goods. Initially, it would seem that history was only repeating itself on Mars in Robinson’s imagination: “Earth was seriously depleted in many of the metals they were finding on Mars. There were fortunes to be made, enormous fortunes. And someone who owned a piece of the bridge over which every ounce of metal had to pass would make an enormous fortune as well...”¹⁷ It sounds like Robinson’s projection of future history will be a repetition of past history: a highly stratified society based on wealth, with a massive laboring class doing all the work, digging up these metals. However, Robinson causes his plot to veer sharply away from the traditional trajectory. Later in the novel, the bridge that is mentioned, the space elevator that transports so many material goods from Mars to Earth, is easily destroyed by the Martian inhabitants — those same First Hundred “commoners” who yearned to set up their own kind of society, far from those on Earth who wished to rule their lives. With the elevator destroyed (a feat that would be easily replicated by the Martian colonists due to their overwhelming proximity to any such future, duplicate bridge), the Martians manage to wrest their independence from their

¹⁷ Robinson, *Red Mars*, 308.

would-be Earthen overlords. Again, Robinson thus envisions a positive vision of human freedom, an improvement over the old problematic episodes of human history.¹⁸

Both Robinson and Zubrin believe that space ultimately will lend to humanity in various ways opportunities for a more positive future than what has already transpired on Earth, although they envision this happening in different ways. Zubrin believes that one main export of outer space colonies will be intellectual property. To reiterate, Zubrin presents an argument against the possibility of resource depletion on Earth. But he also proposes a model for interplanetary trade based on intellectual property. Although Zubrin does propose mining Mars, the asteroids, and various other planets for resources, he acknowledges that all of these things require that the cost of space travel be reduced dramatically. Something that does not require material transport, however, is knowledge. In other words, “the most likely export that Mars will be able to send to Earth will be patents.”¹⁹ The work on Mars will be heavily scientific and technical in nature; while Zubrin does stridently argue that Mars needs people; the work people will be doing on Mars is not the kind of back-breaking agriculture and mining labor that oppressed populations accomplished during earlier periods of Earthly exploration and colonization. For one thing, the gravity on Mars is much lower, making manual labor easier, but in any case, the continued automation of human labor will likely take place on Mars as well. Ultimately, of course, the inventions that Martian colonists make and then describe to their Terran counterparts will enhance life on Earth.

¹⁸ Later in the trilogy, the Martian colonists come to the aid of the Earthlings with their advanced technology when the Earthlings are threatened with a planetary catastrophe. The Martian colonists also successfully contest Earthly oppression by overthrowing them and establishing their own government.

¹⁹ Zubrin, *The Case for Space*, 115.

On the topic of the transmission of non-material goods, one aspect of the positive future that might await humanity in space is a diverse and free expression of religion, as envisioned by Kim Stanley Robinson. A variety of old religious practices do exist on Mars in Robinson's fiction, but one of the most interesting expressions of religious beliefs is something called *viriditas*. Robinson's concept of *viriditas* highlights the diversity of thought here on Earth that supports space exploration, as well as showing how, eventually, dead Mars could be transformed into a living planet, more suitable for humans. That would be a more positive kind of future for humans. *Viriditas* may call to the mind *veritas*, or truth. But *viriditas* in Robinson's trilogy is the irresistible, inexorable power of life to spread and to grow. *Viriditas* is embraced and defined by the character Hiroko Ai, a biologist who belonged to the original group of one hundred colonists to the rusty planet. According to Hiroko, she and her people "worship" Mars and "intend to make a place for ourselves here."²⁰ She began her work in making a place for humans on Mars through her task of managing the colony's farms. However, she soon steps well outside the bounds of her role — or even of the basic tenets of trust among the community — in order to do what she thinks is right to further the cause of life on Mars. She does this by smuggling in one of her associates, a man who is called Coyote. She did this to further her agenda of spreading life on Mars. Soon after landing on Mars, she again breaks the rules that she believes restrains life from spreading on Mars by stealing DNA from each of the colonists and growing their children in vats.²¹ Although this may seem somewhat ghastly to normal people, and I do not recommend actually

²⁰ Robinson, *Red Mars*, 230.

²¹ Nearly thirty years after the writing of *Red Mars*, this is more science fact than fiction. Scientists have recently succeeded in growing mice in mechanical wombs.

growing humans in vats, the point is that struggling for new life in new ways, exerting all of our power in the service of life, will lead to a better future for humanity in space.

Diverse ideas are all leading to optimism in space.

However, it is also clear that Robinson's views of overpopulation clash with Zubrin's views on the same; nevertheless, they both favor space activity. Specifically, Robinson does embrace the fears of overpopulation that Zubrin so stridently rejects ("Yet the data show that Malthusian theory is entirely counterfactual. In fact, over the two centuries since Malthus wrote, world population has risen seven-fold..."²²).²³ It is indubitably clear that Robinson's statements on the fear of overpopulation of the Earth ("Yes, one big part of our political-environmental crisis is overpopulation.")²⁴ and the burden people place on the Earth are at odds with Zubrin's assertions about the virtually unlimited nature of Earth's resources. This is all the more interesting for Zubrin's and Robinson's collaboration in the formation of the Mars Society, an activist group lobbying for human activity on Mars. Again, this dispute highlights that space holds plenty of room for people to have disagreements. Even though people's reasons for interest in space may be different, many people do ultimately support space exploration, because they foresee a better future for humanity in outer space. Optimism about space travel is almost a kind of common denominator for humanity.

²² Zubrin, *Case for Space*, 303.

²³ Robinson's belief in and antipathy for overpopulation is interwoven with several of his stances: first, he connects the Christian Church with capitalism (one of his characters in the trilogy, Phyllis, is a believing Christian, a capitalist, and a traitor to the rest of her friends), which is connected to the exploitation of the mass of workers, which is connected to the Church's opposition to contraception. According to Robinson, "When the Vatican prevents the Rio Earth Summit meeting from discussing population problems, for instance, the public can say, "Oh yes, I know about that; I've read about it in a novel by [a science fiction writer.]" See Foote 58.

²⁴ Foote, 57.

It is worth pointing out here that besides their differing views on overpopulation and resource depletion, Zubrin and Robinson are both optimistic towards space activity despite another point of contention between them: religion. Zubrin makes some positive comments towards certain religions. In his book *The Case for Mars*, Zubrin writes about how Judeo-Christian religion supported the idea of the “divine nature of the human spirit” which led to a humanist society that “values human being[s].” This value on human life, according to Zubrin, was a “dormant seed” planted by “medieval Christendom.”²⁵ It is spooky how Zubrin’s strident denunciation of theories of overpopulation seem to mesh with his appreciation of these pro-human values. Robinson, on the other hand, has explicitly rejected Christianity. In his interview with Bud Foote, Robinson said, “When you say “original sin,” you invoke a whole system that I reject.”²⁶ The system that “original sin” belongs to, of course, is Christianity. Furthermore, in his Mars trilogy, as has been previously exposed, the Christian Phyllis is both the greediest and most evil of all the First Hundred — in the *Green Mars*, Phyllis has one of her fellow colonists tortured.²⁷ Thus, Zubrin has made some positive comments towards Christianity, and Robinson has made negative comments towards it — nevertheless, they both support space activity. It truly seems that people are transcending old sources of conflict to support humanity’s new phase of exploration. Although Zubrin seem slightly pro-Christianity and Robinson is against Christianity, they have transcended this conflict to support space activity.

²⁵ Zubrin, *The Case for Mars*, 326.

²⁶ Foote, 57.

²⁷ Kim Stanley Robinson, *Green Mars* (New York: Del Rey Books, 1994), 269.

On the optimistic side, Martin Fogg supports space exploration for reasons of human freedom. His analysis comes at the question from yet another angle and concordantly arrives at a pro-space, optimistic stance. Fogg considers the angle of humanity's environmental attitudes. Fogg lists four ethical theories that bear relevance towards human activity in space (including here on Earth): anthropocentrism, zoocentrism, ecocentrism, and preservationism. Thankfully, the name of each ethical systems' contains a root word that denotes the emphasis of the particular system. Thus, anthropocentrism prioritizes the welfare of people, zoocentrism prioritizes animals, ecocentrism prioritizes all life, and preservationism prioritizes all unique beings (think: save the space rocks!).²⁸ Shades of these systems were certainly reflected in Robinson's Mars trilogy; for example, the character Saxifrage Russel favored aggressive terraforming of Mars for the betterment of humankind, whereas Anne Clayborne favored aggressive preservation of the very rocks of Mars — no terraforming. Ultimately, Fogg offers a resolution of these four competing theories: humans are unique in that they are simultaneously human, animal, living being, and unique natural objects. Thus, if even non-living rocks may alter the surface of Mars as meteorites, as is their natural tendency, then why shouldn't humans live out their natural tendency to terraform Mars according to our benefit? Thus, Fogg is against strictly limiting human freedoms with restrictions that would be unthinkable for other entities. Again, this points to another viewpoint that points towards an optimistic (more free) human future in space.

²⁸ Martyn J. Fogg, "The Ethical Dimensions of Space Settlement," in *Space Policy* 16, no. 3 (August 1, 2000), 207-8.
<https://search.ebscohost.com/login.aspx?direct=true&db=edsgao&AN=edsgcl.67972702&site=eds-live>.

Before moving on, note the diversity of fields that are optimistic. Zubrin, an aerospace engineer; Robinson, a highly educated science fiction writer, and Schwartz and Fogg, philosophers, are all in favor of space activity. This impressive concordance indicates that something about space is compelling to people working in all kinds of fields.

Encountering Extraterrestrial Life and Intelligence

Another argument for space activity is the possibility of detecting extraterrestrial life on other planets using space-based observatories. Now, it would seem that alien contact is an event that is impossibly far in the future and distant in space. However, we have forgotten that extraterrestrial contact may take many forms. Human space activity in the here and now could well reveal extraterrestrial civilizations. Let us consider more of Dr. Zubrin's prescriptions for human space activity. Zubrin suggests that aliens are more likely to choose higher-frequency radiation such as ultraviolet rays instead of low-frequency radio waves. What does this have to do with near-term human space exploration? Zubrin explains that ultraviolet radiation from the stars is difficult to detect on the surface of the earth. This is because of our thick ozone layer, which necessarily protects us from those dangerous rays. However, launching satellite observatories would overcome the problems of ground-based observatories.²⁹

A space observatory capable of detecting life in distant exoplanets is scheduled to launch in our near future. The James Webb Space Telescope is the follow-up to the Hubble Space Telescope and will be able to detect biosignatures in the atmospheres of exoplanets. The purpose of mentioning this is to further highlight the relevance of this

²⁹ Zubrin, *The Case for Space*, 257.

discussion: near-term human space exploration efforts (the James Webb Space Telescope) may lead to the discovery of alien life (although perhaps not sentient alien life). Such biological discoveries could, in turn, have profound impacts on humanity's religious outlook, especially with regard to our place in the created cosmos. These near-term possibilities for human-driven space exploration provides the perfect segue into the last phase of the essay, the phase concerning extraterrestrial life.³⁰ This is an immediately pressing area of concern and foreshadows the optimistic future of humanity in space: a future where new kinds of cultural encounters are possible, free from the problems of the past.

Ernest McMullin explores a promising and optimistic view of the extraterrestrial life that could be confirmed through space exploration. McMullin begins by recalling that Augustine of Hippo, in the early part of the history of Christianity, suggested a solution to how God had brought about such diversity of material things. Augustine suggested that “the Creator implanted the ‘seeds’ or potencies of each separate kind in the created universe from the first moment of its existence...”³¹ This view is in contrast to a strictly literalist reading of Genesis. A literal reading of Genesis would place emphasis on God's action in the creation of each distinct material being in the universe. In Augustine's reading, however, emphasis is placed on some kind of inherent nature in matter that later gives rise to diversity — in other words, life.³² Surprisingly,

Augustinian's notion of God's role in the created universe seems to have a role to play

³⁰ “Planets & Origins of Life - Webb/NASA,” accessed March 5, 2021, <https://www.jwst.nasa.gov/content/science/origins.html>.

³¹ Ernan McMullin, “Life and Intelligence Far from Earth: Formulating Theological Issues,” in *Many Worlds: The New Universe, Extraterrestrial Life and the Theological Implications*, ed. Steven Dick (West Conshocken, Pennsylvania: Templeton Press, 2000), 155.

³² While Augustine is not the inventor of the theory of evolution, McMullin identifies Augustine's explanation of Genesis as “developmental.”

in the notion of freedom. In this Augustinian vision, beings are free to develop in their own way — much like the freedom that Zubrin, Robinson, and Fogg have envisioned for humanity through space activity. This freedom results in a wonderful diversity of beings throughout the creative universe — an optimistic, interesting view of the space.

The Augustinian interpretation that McMullin identifies is not only more favorable to human freedom, but also to the human intellect. McMullin rightly points out that the discussion of the exact interpretation of Genesis is of little (or no) concern for modern scientists. The notion that God literally brought each species of life into existence has little credibility among scientists today. Nevertheless, McMullin's description of the Augustinian interpretation of Genesis offers an intellectually interesting framework for justifying the search for extraterrestrial life. If life is found beyond our planet, surely this lends weight to the idea that there is something about earth and water that causes life (loosely speaking), rather than constant and direct divine intervention. Certainly a universe populated by beings following the understandable rules of science is more intellectually amenable than a universe pervasively influenced by the will of an omnipotent person — we all know that a person's will is sometimes incomprehensible.

Even a little more figurative and imaginative reading of Genesis points to a more complicated, populated universe. McMullin takes this interpretation of the book of Genesis even a step further and expounds how, from a religious standpoint, belief in a plurality of worlds became seen as the likely result of the Abrahamic God. If God put the “seeds” of a diversity of species into matter itself, and if the universe has a penchant for bringing forth such diversity in fact, then surely more worlds with more life must exist than only Earth? Movements in this direction were seen as early as the thirteenth

century. According to McMullin, “the Aristotelian position was condemned in 1277 by a council of bishops in France, thus giving an official status to the doctrine of the possible plurality of worlds.”³³ In McMullin’s telling, the Aristotelian position was aligned with a literalist reading of Genesis. The literalist reading of Genesis mentions only one Earth and one sentient species, so such must be the case. Obviously, this bodes ill for proponents of space exploration; why go into space if nothing living is present? On the other hand, an imaginative reading of Genesis illustrates a more hopeful, promising spacescape.

Later on, about three centuries after this council, a “principle of plenitude” became popular in the European Renaissance. This idea holds that a creative God would necessarily be very creative when it comes to life. Thus, surely God created many sentient species and many diverse life-forms. That was the optimistic, interested view of the universe that was more beneficial to (future) space activity endeavors.

Around this same time in the European Renaissance and particularly afterwards, people began to spend more and higher quality time looking at the stars. That higher quality came in no small way from the use of the telescope. McMullin puts it this way: “As historians have shown in some detail, the likelihood of ETI became almost a commonplace in western Europe in the eighteenth and nineteenth centuries.”³⁴ For the theologically or historically inclined scholar, this provides a firm foundation for connecting the possible existence of aliens back to old theological foundations. The discovery of aliens would point to a non-literalist reading of Genesis that emphasizes the creativity of God, exemplified by a figurative reading of that biblical book.

³³ McMullin, 163.

³⁴ McMullin, 163.

At this point, it may become clear that the space exploration proponent ought to have certain dispositions when it comes to such theological questions. Space exploration proponents ought to take an Augustinian, rather than an Aristotelian or Aquinine, position as regards the reading of Genesis. This bodes well for optimism in space exploration. This is because literal readings of Genesis are generally not in favor in scholarly circles or in the wider world, for that matter.

Besides offering a model of the universe, one of the main ultimate purposes of religion — and I speak here of the Christian religion in particular — is to be “saved.” The nature of extraterrestrials almost certainly preclude them from being saved by our religion, which is one reason why we are unlikely to repeat the problems of past exploration episodes in our distant future in outer space. McMullin does discuss the soteriology of the aliens. Are extraterrestrials in a fallen state? If yes, can they be saved, and if yes again, then how? One might wonder first of all how humans might be saved, according to the Christian religion. This wondering has already been exhaustively researched, pondered, and written about through entire millenia, as McMullin rightly notes. Not having a clear answer to our own soteriology, one might also wonder how extraterrestrial intelligence might be saved. Indeed, the answer to such an otherworldly question may seem utterly impractical. Its mere pondering has led to ridicule from certain secular corners, yet this question deserves to be taken seriously. Deciding on firm resolutions to these points of contention could throw our understanding of the Christian God and Christian soteriology into sharp relief—most importantly, an answer to this question could make some predictions about our future space exploration and alien encounter strategies. This is because proselytizing activity among

non-believers has been a justification for exploration in the past. Such proselytization did lead to problems, however. So, if we could know more about how extraterrestrials fit into this, it could make some predictions about how our alien encounters will play out.

Can extraterrestrials be saved by human religion? In fact, a clear vein in the scholarship around this question is a resounding “no.” Edmund Michael Lazzari details three existing schools of thought regarding the state of grace of hypothetical extraterrestrials and the soteriology that results. First, some theologians believe that extraterrestrials are already incorporated into the sacrifice of the human Christ. Thus, extraterrestrials have already been saved through Jesus, in some way. Second, other theologians believe that every sentient species that has fallen from grace will receive an Incarnation. In this line of thought, God the Father wants to save all fallen species, but every fallen species needs its own Incarnation in order to be saved. Thus, God has or will provide an Incarnation for every fallen extraterrestrial species. This is a line of thought that has historically drawn ridicule from secularist corners. Third, the last group of theologians adopts a “respectful agnosticism” regarding these questions. Lazzari attempts to carve a way somewhat akin to this last group in his own argument. Lazzari denies the necessity of multiple Incarnations, but he also asserts that extraterrestrials do not need a human nature to be incorporated into the Body of Christ — after all, angels are non-human, but they are a part of the Body of Christ. Nevertheless, Lazzari argues that it would be improper to administer the sacraments of the Church to extraterrestrials, as those sacraments are proper only to humans.³⁵ Obviously, in this

³⁵ Edmund Michael Lazzari, “Would St. Thomas Aquinas Baptize an Extraterrestrial?,” *New Blackfriars* 99, no. 1082 (July 2018), 452. doi:10.1111/nbfr.12319.

case, religion cannot be used as an excuse to subjugate alien cultures in outer space. This indicates that the future will be unlike the past in terms of tragic episodes of exploration.

These questions are pertinent only to space exploration only in the most distant, long-term timeframes. It may be millennia before humans venture far enough in the galaxy before sentient extraterrestrials are encountered. Of course, it is practically impossible to predict when aliens may come to visit us on Earth. That would be the other scenario in which a cross-cultural exchange such as evangelization may take place. The point of such analysis of the soteriology of extraterrestrials is two-fold, nevertheless. First, the question is interesting in its own right. Attempting to understand the state of grace and possible remedies of extraterrestrials may lead to insights about our own condition; what makes us tick and why we feel called to explore the universe. Second, this discussion serves to highlight an important difference between efforts at space exploration and historical human exploration of the planet Earth. Space exploration is *not* undertaken to convert aliens. This is more than a profession of faith in multiculturalism, which frowns upon such chauvinistic attitudes toward religion. Instead, actual scholarship demonstrates the impossibility of converting aliens. This should serve as a distinct contrast to aspects of the complaints of other scholars against the possibility of empire-building in outer space.

The Sparrow is a work of fiction that shows awareness of historical episodes of injustice regarding past episodes of injustice involving exploration while ultimately arriving at a pro-exploration stance. In *The Sparrow*, extraterrestrials' nascent radio activities unwittingly transmit intelligible signals into space. Some of those signals reach

Earth, and once humans determine that the signals are from nearby Alpha Centauri (a mere three or four light-years distant from Earth), humans embark on the journey.³⁶ These humans, although intensely religious, do not attempt to convert the aliens into their religion.

The humans' encounter with the VaRakkhati (as the aliens in this novel are called) does echo European encounters with indigenous people in the Americas in the early modern period. Like the indigenous people of the Americas, the VaRakkhati are technologically inferior to the exploring party. The first group encountered by *The Sparrow's* fictional explorers are an especially primitive group, depending on other groups for simple manufactured goods in exchange for their activity gathering wild produce. However, these primitive aliens clearly have sentience and civilization. An element that parallels and echoes the primitive nature of the aliens is the ethnic heritage of the story's human protagonist, Emilio Sandoz. Sandoz has mixed Spanish and Taino ancestry. The Spanish, of course, were a dominant, exploring group during the era of European colonization and exploration. The Taino, on the other hand, were a group of indigenous people in the Americas who were nearly wiped out by the European explorers. Thus, Emilio bears in his person both dominant and oppressed aspects of human history. This, and Emilio's eventual torture and soul-searching at the hands of the VaRakkhati, create a twist on *The Sparrow's* reflection of the stereotypical cross-cultural encounter. Emilio's mixed heritage shows that eventually people from

³⁶ It should be noted that the travel time of the human explorers to Alpha Centauri was shortened to a physically impossible short amount of time, about 6 to 9 months. In reality, travelling at best possible speed, a craft would take nearly 3 years to traverse such a distance.

multiple backgrounds can come to view exploration, including space exploration, in a positive light.

Although Russell puts her characters through a harrowing plot (most of the explorers die), ultimately, *The Sparrow* should be interpreted as an optimistic look at future exploratory efforts that may result in alien encounters. Throughout the parts of the novel that take place after the voyage of exploration, Sandoz angrily processes some unspoken hurt that occurred to him while on the alien planet. In fact, Sandoz, after all of his co-workers and friends were killed by the aliens, was imprisoned, tortured, and repeatedly raped. He was kept against his will as a prostitute for the aliens. What makes this optimistic is that he overcomes his hurts. Sandoz is not left in a torpor of confusion and anger. Rather, through the efforts and resources of the highest levels of the Jesuit organization, the fictional Sandoz begins to heal from his wounds. In a tense but cathartic scene at the close of the novel, the head of the Jesuit order urges Sandoz: “‘Say it,’ Giuliani repeated, unrelenting. ‘Make us hear it.’ ‘I was not a prostitute.’ ‘No, you weren’t. What were you then? Say it, Emilio.’...’I was raped.”³⁷ By naming, putting a word to it and giving that word to the others in the room, Russell begins Emilio’s next phase of healing. Russell’s depiction of the Jesuits in the imagined context of extraterrestrial thus becomes even more complex. The Jesuits did cause social chaos on Rakkhat, Emilio the Jesuit did have his reason turned upside down, but the Jesuits also worked, and succeeded, at bringing about healing. The optimist for human space exploration may be glad to know that in the sequel to *The Sparrow*, Emilio has begun to live a normal life before returning to Rakkhat with another

³⁷ Russell, 469.

party of Jesuits. Thus, neither Emilio nor the cause of interstellar contact is lost in Russell's vision. It is as if the brutal encounters that occurred in Earth's past, symbolized by Sandoz' mixed ethnic background, is resolved in a decision to continue exploring and making contact with other cultures.

Jamil Khader's argument regarding *The Sparrow* disagrees with this — but his argument misses a critical point, which is that space is a radically different venue that will prohibit empire-building. Khader argues that Mary Doria Russell does not appropriately depict nor respect the suffering of the fictional Sandoz' historical forebears. Towards the end of his article on *The Sparrow*, Khader wrote, "I have argued that the utopian and visionary impetus of representing minority characters in ... Russell's *The Sparrow* is not radical enough because it ignores the historical and ideological contexts in which these texts were produced."³⁸ It is probably not that Russell ignored the historical or ideological context of the writing of her book; Khader's argument is better understood that Russell's apperception of that context does not mesh well with Khader's. Citing Russell herself, Khader reports that Russell "decided to write this novel because she believed it to be 'unfair for people living at the end of the twentieth century to hold those explorers [the Europeans in the early modern era] and missionaries to standards of sophistication and tolerance that we hardly manage even today."³⁹ This report of the author's intentions may come as a surprise to many readers of *The Sparrow*. After all, the text seems to cast a definitive pessimistic light on

³⁸ Jamil Khader, "Race Matters: People of Color, Ideology, and the Politics of Erasure and Reversal in Ursula Le Guin's *The Left Hand of Darkness* and Mary Doria Russell's *The Sparrow*," *Journal of the Fantastic in the Arts* 16, no. 2 [62] (2005): 124.

<https://search.ebscohost.com/login.aspx?direct=true&db=mzh&AN=2006270886&site=eds-live>.

³⁹ Khader, 119.

humanity's ability to peacefully encounter other civilizations. Given such apparent pessimism regarding encounter and exploration, how could Russell intend this novel to have such a purpose, to critique the critics of early explorers as "unfair"? Again, the answer that I propose is that *The Sparrow* is a novel about (in part) recovery from abuses from exploration and the decision to continue exploring.

Khader takes a different view. Whereas Russell wanted to depict explorers in a state of radical innocence (or ignorance?), Khader asserts that the early modern explorers were far from ignorant regarding the human nature of their indigenous contacts. The early "colonists were intimately acquainted with the Other not only through actual transactions in the contact zone but also through classic Eurocentric texts that orientalized the Other in order to justify their colonization and genocide."⁴⁰ Thus, Khader finds the notion that the early modern explorers somehow innocently subjugated and decimated indigenous populations to be "preposterous."⁴¹ As a result, to attempt to depict explorers in such an innocent light, as Russell does in *The Sparrow*, is misguided, in Khader's view. However, dealing with extraterrestrials in outer space will be quite different from humanity's cross-cultural encounters in our past.

Zubrin writes that when humans eventually do meet extraterrestrials in space, we will meet them as friends. We have to point out that it is not at all clear when or where humanity may encounter extraterrestrial civilizations.⁴² What is more likely is that our galaxy contains some extraterrestrial civilizations. These civilizations are probably

⁴⁰ Khader, 120.

⁴¹ Khader, 120.

⁴² Although it is true that recently a narrow-band radio signal was detected from the neighborhood of Alpha Centauri, that narrow-band radio signal was not music, as in *The Sparrow*. In fact, that signal was likely not from aliens, but has some other explanation, as the Proxima Centauri star is a flare star, making its system inhospitable to life. See the citation to Phil Plait's article in the bibliography.

extremely distant from us, however, making tremendous social and scientific strides necessary before we can make contact with them. As Zubrin put it, by the time we reach the aliens, who will probably be more advanced than us, we will have developed to a more evolved state. “I believe we will meet them as friends, and their friends as well, with great benefit as the circle expands, as each will be able to acquire from the rest not only vast knowledge but entirely new ways of understanding.”⁴³ Thus, humanity should not fear space exploration on the account of adverse extraterrestrial cultural contacts.

Furthermore, Zubrin asserts that if we do meet aliens in space, it is unlikely that we will be able to “colonize” them in the sense of subjugating them. This is simply because interstellar distances are simply too great to effectively oversee an empire. Zubrin writes, “While alien invasions are a staple of science fiction, the logistics of interstellar warfare provide enormous advantages to the defense, as the home team is likely to outnumber the visitors by millions to one.”⁴⁴ This excellent defensive position humans hold vis-à-vis potential alien invaders holds for them as well as for us. It is highly unlikely that humans will be able to conquer, kill, and otherwise drive out aliens from their home planets in order to form an interstellar human empire. This complements nicely the point made earlier that it will also be prohibitively difficult for Terran governments to wield imperial control over humans forming colonies on other worlds — that is, colonies where no one, human or alien, lived previously. Of course, Khader does not hold this viewpoint at all. Khader wrote the following: “As Thomas Richards correctly points out in his discussion of the meaning of exploration in Star

⁴³ Zubrin, *Case for Space*, 324.

⁴⁴ Zubrin, *Case for Space*, 324.

Trek, 'Historically there is no such thing as exploration for exploration's sake. Exploration usually leads to empire, and empire to war.'⁴⁵ It is my position that Khader is wrong. As explained before, an empire will probably be impossible in space. Freedom is a more likely outcome for those willing to venture away from old power centers.

Jill Cornell Tarter agrees with Zubrin's assessment in that she foresees aliens as having a science-based culture; this is good news for future human explorers. Tarter paints a picture of a current religious scene here on Earth that is woefully out of step with the reality of the universe as seen by science. Any technologically advanced civilization that makes contact with us is likely to shock humanity into growing up from our primitive, egocentric religion. In Tarter's vision, people will wind up converting to the aliens' science-based religion, thus beginning a new era in the spiritual history of humankind.⁴⁶ In the scenario in which humans go forth into outer space and encounter aliens, it could very well be that aliens and humans will de facto have a similar culture — before even meeting each other. This is because our knowledge of science will be so deep and so important to our livelihoods in outer space that we will be able to communicate with the aliens purely on the grounds of science. This is unlike the scenario envisioned by Mary Doria Russell, in which humans meet aliens who are more technologically primitive than the humans.

Tarter's assessment of the evolution of human religion stands in contrast with Del Ratzsch's. This is important, because it is an example of diverse viewpoints converging

⁴⁵ Khader, 122.

⁴⁶ Jill Cornell Tarter, "SETI and the Religions of the Universe" in *Many Worlds: The New Universe, Extraterrestrial Life and the Theological Implications*, ed. Steven Dick (West Conshocken, Pennsylvania: Templeton Press, 2000), 147.

towards a pro-space exploration stance. “It seems utterly obvious that that space exploration, migration, and so forth do not have the slightest *logical* consequences for any of those doctrines.”⁴⁷ His point is that Christianity is logically resilient enough to withstand such changes in context. The challenges, however, come from other vectors. Later on in his article, Ratzsch writes, “Religious belief might have been understandable or even useful for an egotistical but otherwise insignificant race on a small planet circling an undistinguished sun in some out of the way corner...but would religious belief be needed by the lords of space?”⁴⁸ This question speaks to the social and psychological import of religion, rather than religion’s basic logical framework. Indeed, this may well be more important than the basic logical questions. Ratzsch does not make a significant allowance that space exploration or extraterrestrial contact may cause fundamental changes to human religion. Fascinatingly, Ratzsch even sees the possibility that religious groups might well *lead* the effort to explore and colonize outer space. It seems unlikely that a group that would lead an effort into something would anticipate being harmed by that something. Thus, Ratzsch and Tarter have totally opposite views on an important consequence of space exploration. Nevertheless, they both support space activity. This shows that an optimistic viewpoint towards space can occur across diverse points of view.

Conclusion

Space is a unifying force that elicits generally positive responses among people of a variety of types. Justifications for space activity differ: some see resource

⁴⁷ Del Ratzsch, “Space Travel and Challenges to Religion,” in *Monist: An International Quarterly Journal of General Philosophical Inquiry* 71 (January 1, 1988): 101.

<https://search.ebscohost.com/login.aspx?direct=true&db=phl&AN=PHL1161118&site=eds-live>.

⁴⁸ Ratzsch, 109.

depletion and its attending consequence, overpopulation, as a powerful reason to travel to space. At least one other person believes that overpopulation and resource depletion are myths, but we should engage in space activity for numerous reasons anyway. We saw a conflict over how religion would be impacted by space activity, yet both sides in that debate favored setting sail for the stars. In fiction, too, humans have been envisioning a hopeful future in space. In *Red Mars*, Kim Stanley Robinson imagined a kind of “optopia.”⁴⁹ In *The Sparrow*, a space traveler overcomes egregious personal injury to continue on a voyage of exploration. This paper offered an interpretation of *The Sparrow* that identifies that character’s struggle and victory as a symbol for overcoming past oppression associated with Earthly exploration and conquest.

The startling discovery that we can make in the here and now is that we are already in space. We are on spaceship Earth, floating through the heavens in multiple directions. This realization of our spatial state offers us practically unlimited hope for our material future. The diverse bodies of our solar system, the asteroids, moons, and planets, await; as Zubrin so urgently reminds us, we have no reason to fear resource exhaustion. It is evidently amidst this material diversity of our spacious environment that our own special diversity has arisen. Like Emilio Sandoz, we are both Spanish and Taino. This is a conflict, but it need not be fruitless. After all, Sandoz overcame his traumas, ventured forth, and found a better world. Looking around us, and looking “up” to the stars, we too can do the same. Outer space beckons to us, no matter our various perspectives or histories. The conclusion of my research for this essay is that striving

⁴⁹ Foote, 59.

for the stars may take the form of a unifying goal among very diverse peoples and thoughts.

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