

Conservation v. Colonisation: The Ethics of a Human Presence in Space  
Ziba Norman, UCL

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Discussion of environmental ethics has become increasingly charged as fears for the future habitability of our planet, and concerns about anthropocentric global warming, have come to dominate the agenda. In this paper I have no intention of directly addressing the concerns, truths or interpretations of the data that has driven and animates groups such as Extinction Rebellion. Indeed I would welcome the awareness their movement offers, enabling even those most distant from these issues to be forced to consider the ramifications of their actions on the planet we share. Nevertheless, I'd like to suggest that unchecked, it may increasingly lead to a narrowed understanding of stewardship, of our place in the universe as human beings, and of our capacity to create, perhaps even bring life to lifeless worlds, and to expand into the universe.

I wholeheartedly agree with those who suggest that we should take stock of the environmental damage that uncoordinated growth, and an over-focus on commercial concerns is having on our planet, but believe it is now time to take another step in our understanding of conservation. One that recognises that nothing is static, the value of evolutionary forces, and the importance of our place as sentient beings in this process. Through this deeper acknowledgement, I would hope that we can develop a far greater concept of stewardship and a new way of understanding conservation, one which is not limiting but embracing and fulfilling, both for ourselves and the future of our species.

As all of us in this room are aware, establishing a human presence in space, potential colonisation of Mars (which is still quite a long way in the future) and the establishing of a more permanent presence on our own Moon, will require an unprecedented level of global cooperation. For the political will to advance these projects to be sustained, the citizens of the world themselves, especially in the major democracies in the West, in particular, the US, will need to understand the importance of these projects. Actual involvement will be limited to a very small number of people engaged in the work, leaving the vast majority of those on Earth to conclude, as many did in the United States during the Vietnam War (a time of great social turmoil in the US and the stand-off between superpowers) that there were many more pressing concerns to be addressed. Like our own time it was a moment that could be characterised as disruptive, when there was a desire to retreat from the future, to return to a safe place. Indeed after the success of the Apollo project, marked by superpower rivalry, manned missions to the Moon ceased. One might easily have imagined we'd have an established a permanent presence on the Moon

within a generation of the Apollo 11 landing, but that did not happen. There was a belief that the \$150 billion (equivalent in 2020 dollars) cost of the Apollo project was far too great. The history suggests that visionary projects can easily be derailed by the pressing problems of the age.

Even as the costs today are projected to be less in real terms, the argument against expenditure is still likely to emerge. A NASA-funded study projected a 5 to 7 years time-scale (in 2015) at a cost of \$10 billion, if partnerships were formed with private companies, eg, Space X. The plans themselves include the use of robots, the “Evolvable Lunar Architecture”. The programme envisages the establishment of an industrial base on the Moon, costing as little as \$10 billion. [*Economic Assessment of a System of an Evolvable Lunar Architecture that Leverages Commercial Space Capabilities and Private-Public Partnerships* (Miller, C ; Wiltite, A, et al, 13 July, 2015) (NASA funded study).

But let’s return to the theme we began with, the popularised understanding of conservation as supported in the media today: we as humans have had negative effects on our global environment, and therefore, a) we cannot be trusted to embark on expeditionary work in the wider heavens, and b) doing so will be wasting valuable time and resources that must be utilised to save our own home planet, Earth.

This to me at least seems a very limited view, one that certainly does not recognise the future scientific value of what a human presence in space may teach us (Crawford, 2012). (As an aside: The benefits of a greater sense of interconnectedness, which immediately reminds me of arguably the most significant environmental photograph ever, Earthrise, taken by Apollo 8 astronauts.)

The more limited view of conservation discounts that a human presence in space may prove invaluable to the continuance of our civilisation. The emphasis on the concept of a space refuge, which we discussed in our paper in Springer Nature (Sozick, Norman Reiss, 2019), even if not extensively discussed in the academic literature, is widespread in popular discourse; often the idea of colonisation conjures up an image of somewhere cut off, self-sustaining. This kind of idea, especially in the current political climate, might lead to a pervasive zero-sum mentality: whatever effort we give to space exploration, and especially to potential colonisation, is then seen as diminishing the efforts we will expend on Earth. Instead of seeing these activities as the thrusting forward of a vibrant civilisation, they are seen as the desperate attempts of a dying species to find a little foothold elsewhere, having destroyed our own home, and thus seeing ourselves as a negative and destructive presence that shouldn’t be let loose in the universe.

Whereas the more constructive way of viewing our efforts to expand into the universe might as easily be seen as a way of enhancing our understanding of the forces that created our planet in the hopes this knowledge will support our conservation efforts on Earth and not diminish them.

This limiting view of conservation pretends to a concept of mastery of our own home planet, which suggests it can somehow be optimised and separated from

our place in the heavens. And it fails to recognise the need to understand our biosphere in the widest possible context.

The discourse is changing, and I am glad to say some initiatives are making a difference, recognising the importance of the existential risks posed by not having a more complete understanding of the forces in the universe that might threaten Earth.

The establishing of International Asteroid Day in 2016 by UN Resolution [A/RES/ 71/90] is observed on 30 June, the anniversary of the 1908 Tunguska asteroid impact in Siberia, Russia. It is a clear acknowledgement of the danger our planet faces if it turns its back on the heavens. Indeed a space presence would give more effective observation points and lead to earlier warnings of such potentially catastrophic risks.

It could be argued that the great challenges ahead of us if we do forward plans for colonisation, may lead us to take even greater care of Earth, and will lead us to increase our efforts as we realise the immensity of difficulties entailed by creating plan, or planet, B (Sozick, Norman, Reiss 2019).

So now let's look at the various ethical arguments, the concept of the intrinsic value of maintaining a "pristine environment" (Ian Stoner's idea): the model of National parks being adopted for other worlds (Mars).

Much of conservation ethics is based on parameters that relate directly to Earth, and this particular moment in Earth history; by being bound to this model I believe we could suffer from a failure of imagination. This in itself may pose a great danger to our species, and is not, I would suggest, in keeping with the processes of evolution that have created the diversity of life that we seek to preserve.

Many of those who work on space ethics discuss our role as protectors, some say planets should be kept in a pristine state (national parks on Mars have been mooted, I mentioned above). They discuss the intrinsic value of life. And wonder where this leads if applied to, eg, microbial organisms—should things be kept as they are in case they will one day evolve into higher life forms? After all, we humans always foul things up, don't we?

We discuss littering planets, and space debris in orbit?

We ask how all this will affect our well-being on Earth—which I believe we should, but equally a positive stance should be adopted, with a sense of belief that we, as sentient beings, can do amazing things in the universe in which we find ourselves.

*The Ethics of Fulfilment of the Imaginative and Life-Creating Capacity of the Human Being*

But I would like to suggest that to embrace these possibilities we need a new kind of ethics, one which is proactive, that doesn't pattern itself so rigorously to the problems that we face on Earth today—though for sure it needs to take these into

account—but that is forward looking, and recognises the creative capacity of the human being. I'd like to call this the Ethics of Fulfilment:

- 1) Recognition that we are Artifactual beings in a constant state of becoming
- 2) That we have a moral obligation to act on this aspect of our own nature as human beings, because it is an intrinsic value and defining of us as humans
- 3) That our obligation is not limited to the here and now, or to a maintaining of the status quo, but includes the fulfilment of our imaginative capacity
- 4) That we have a responsibility to stretch our ethical framework to include the capacities our technological advances offer

Do we have an obligation to future life to seed the universe? And are there any clues as to how our understanding of rights and responsibilities is changing?

I'd like to relate the story of the girl who requested cryonics in the hope of a treatment being found for her terminal illness in future; her parents each held different opinions on this, a High Court decision determined she should be granted the right to cryonic technology. This to me seems to suggest that we are moving into an area where, because of our technological capability, we can look to the rights of a future self (where the future life potential of an individual is recognised, above and beyond the state of art medical treatment today.

The High Court decision in respect of the 14-year-old girl suggests potentialities might become normative in determining the rights of an individual (even though the decision itself in this case did not rely on this argument) it isn't impossible, given our technological advances, that the Rights of a Future Self might one day be upheld by the courts). And this would expand our understanding of ethical considerations, rights and responsibilities.

Couldn't a similar argument be used when considering the potentiality of a human presence in the universe, and perhaps even bringing life to lifeless worlds: in the movie *Star Trek II* referred to as the Genesis project?

Do we have an obligation to seed in the universe if we can? Again we are talking about a potential that exist outside of our own time frame, and does not simply relate to stewardship in a narrower sense: of being responsible to maintaining things in balance within the constraints as we can view them from our perspective in the here and now.

Do we need to consider conservation in a new way, and develop an ethics that is anthropologically based, in recognition of the value of giving life and bringing life. To simply stand within the system as we find it, is to negate the aspect of our own being. And ultimately to deny the life that we experience and might bring to the wider universe.

But going back to our theme: It isn't really a question of colonisation or conservation, to ensure the widest chance for our civilization, and future life as yet undreamt of, we must ask ourselves if we have an obligation to move into the

universe as and when we can? If we have an obligation to the potentialities that we as sentient beings can offer as creators and bringers of life.

Is it then unethical to fail to look beyond our immediate horizons?

We must tread gently but go boldly!

This is a plea to recognise the creative capacity of ourselves as human beings, and the responsibility we have to future life, and even forms of consciousness that we can hardly even begin to imagine from where we now stand.

The Genesis project is an expression of this idea: bringing life to parts of the universe that are barren. Perhaps we can say there is a moral duty to that future life to create conditions in which it might evolve and thrive, and to do so actively? Do we really believe it is best to leave, eg, Mars in a “pristine state” (Stoner, 2017), untouched by humans, awaiting whatever fate the molten cosmos may bring its way?

And what of colonisation, not just of other planets and our own Moon, but of the empty spaces in between? So finally, I would argue that we need to develop a more imaginative understanding of conservation. To recognise the intrinsic value of the human being as a creator. To accept that we will make mistakes along the way, but equally to recognise the harm that we do by failing to take our place in the wider universe, and seeing ourselves as part of an interconnected system in which we are active and not merely passive participants in a system: that is there, not just for us to marvel at from our vantage point on Earth, but to adapt, shape and change. This too is a responsibility, a responsibility to Life itself; transcending limitations and asking us to think beyond the confines even of our own preservation, and look into the deep future.

## REFERENCES

- Crawford, I. A. (2012). Dispelling the myth of robotic efficiency: Why human space exploration will tell us more about the Solar System than robotic exploration alone. *Astronomy and Geophysics*, 53, 2.22-2.26
- Stoner, I. (2017). Humans should not colonize Mars. *Journal of the American Philosophical Association*, 3(3), 334-353.
- Szocik, K., Norman, Z., & Reiss, M. J. (2019). Ethical challenges in human space missions: A space refuge, scientific value, and human gene editing for space. *Science and Engineering Ethics*. DOI: 10.1007/s11948-019-00131-1.
- United Nations Office for Outer Space Affairs (1967). *United Nations Treaties and Principles on Outer Space, related General Assembly resolutions and other documents*. New York: United Nations.
- Available at [http://www.unoosa.org/pdf/publications/ST\\_SPACE\\_061Rev01E.pdf](http://www.unoosa.org/pdf/publications/ST_SPACE_061Rev01E.pdf).