

# “Philosophical aspects of space exploration and human spaceflight: the ecopolitics of sharing place with non-human others in outer space”

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## 1. Introduction

This presentation originates in a fieldwork-based philosophical approach of multispecies communities in space stations. Envisioning longer stays in outer space - whether on a spacecraft or on another planet - will require programs that create multispecies ecosystems. But this opens existential and ethical questions of how to include and dwell with non-human living systems in contained spaces. There has been at least a fifty years-long history weaving together space and ecology, but philosophers and social scientists have not yet investigated the question of space as a place for multispecies exchanges.

In the midst of the Anthropocene, we find ourselves, as ecofeminist Val Plumwood foresaw it, at the edge of a near-death experience that obliges us to acknowledge our “ecological vulnerability”[6]. Extinction, instability, and uncertain futures now define our ordinary condition. How should we make room for care or trouble, within the epic narratives that have fuelled space exploration for decades? What “ecological vulnerability” draws us into is the need to take a closer look at the multispecies communities we are embedded in. Although space stations might look overwhelmingly abiotic, I will argue that they do not stand for any kind of exception to this sense of vulnerability. What sort of place is a space station or a space habitat then? What kinds of more-than-human or beyond-human beings are to give us meaning and a sense of home up there? In return, are they to be provided with a meaning of their own? What aspects of space exploration can be challenged and used to reflect on our current relationship to the ecosystems supporting our lives on Earth?

## 2. Methods and purpose

This presentation will briefly introduced previous cultural ties between space exploration and environmental awareness:

- The adoption of the photographs of Earth from Space as an iconography for environmental counter-cultural movements
- The advocacy for Space colonies, in the wake of the publication of *The Limits to Growth*
- Architectural projects emerging in the 70s and reinterpreting closed-loop ecosystems here on Earth.

Our own perspective will advocate for a critical reworking of the “spaceship Earth” metaphor, a configuration in which, too often, only humans are the ultimate pilots.

By an overview of data gathered on two different projects, VEGGIE at NASA KSC, and the European controlled loop MELiSSA, we will argue that world-making practices in space are not only relying on the work of architects and engineers but are also rooted in alliances and intertwined intentionalities of a multispecies multitude [3]. The point here is not to state that space ecologies should be models for earthly ones, but that they might result in producing awareness concerning the necessity of reintroducing care and redistributing agency within our techno-scientific regimes [7].

As Myers [4] underlines it in her response to Battaglia’s “ethics in suspension” [1], we must bear in mind that artificial ecosystem, as modeled and designed in the context of human spaceflight and when simply replicated on Earth – for farming purpose for instance (e.g. Aerofarm), might just as well be called “design for the Anthropocene” - a view on living systems that reinforce control and a managerial approach to the entities in presence, reducing their agency – or ways of world-making - to a set of parameters captured by sensors. On the contrary, we will stress the necessity to use concepts such as care, ecopolitics, parasitism, and difference, in order to characterize the regime of coexistence of human and non-human beings in such artificial manmade environments.

Anthropologists Danowski and Viveiros de Castro reminded us in “L’Arrêt de Monde” that cosmogonic narratives circulating among amazonian animist tribes generally mention that “In the beginning there was nothing, there were only people.” [2] – Multispecies worlds in outer space might also express this view and stress the dynamics of the entanglements between living and non-living agents. Researches on “artificial” ecologies have materialized a world where there is no stable and inert world lying under *us*. The loop is entirely composed of “people”, human and extra-human, whose lightest action can significantly alter the whole stuff this world is made of - each one sharing the responsibility of sustaining the existence of all the

others; each one being a gardener for the other. "We are all astronauts" will therefore acquire a different meaning by re-elaborating the content of the terms "we" and "astronauts".

### 3. References

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### Short Summary

Envisioning longer stays in outer space - whether on a spacecraft or on another planet - will require programs that create multispecies ecosystems. But this opens existential and ethical questions of how to include and dwell with non-human living systems in contained spaces.