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Is Space R&D Truly Fostering A Better World For Our Future? (2)

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THE ETHICS AND RESPONSIBILITY OF ASTROBIOLOGISTS

Abstract

With the recent launch of multiple robotic missions to Mars and developing plans for human exploration of the Red Planet, the search for life in our solar system is at a crucial juncture. Astrobiology research could answer profound scientific and philosophical questions, but might also pose serious risks to science, society and extraterrestrial life via the harmful contamination of Earth and other celestial bodies. Because achieving zero risk of contamination and perfect protection for interplanetary missions is impossible, scientists and other stakeholder communities will have to decide on an acceptable level of risk that balances scientific and bioethical priorities against engineering and funding limitations. In this context, clarifying (elucidating?) the priorities, values and assumptions that shape astrobiologists' stances on ethical interactions with extraterrestrial life and environments is valuable not only as a case study in the responsibility of scientists, but as a starting point to increase understanding between stakeholder communities, and also because policies and guidelines governing human interactions with life and environments beyond Earth (and the impacts of those interactions on Earth) will be implicitly if not explicitly influenced/shaped by our ethical frameworks and sense of responsibility. This exploratory study therefore answers the question: What [ethical] commitments, responsibilities, and motivations do astrobiologists recognize and prioritize as they search for life in our solar system and navigate planetary protection policies, especially via sample return missions? This was examined through semi-structured interviews with twenty-one scientists across the United States whose research applies to the search for life beyond Earth. Responses were analyzed using thematic, inductive coding and exploratory text analysis. Results showed that/my analysis reveals that participants privileged the risk of forward contamination over back contamination; were committed to protecting and preserving extraterrestrial life and environments; and perceived of their responsibility primarily in terms of the relationship between scientists and nonscientists, rather than as a responsibility for the impacts of astrobiology research and exploration. Participants' views on ethics and responsibility were heavily informed by context, for example the context of climate change and environmental degradation on Earth; the history of colonial exploration and exploitation; and a growing lack of trust in science and expertise. This study recommends that astrobiology exploration should develop a preconceived but highly flexible plan of action in the event that humans find life beyond Earth, and that we scrutinize who, if not astrobiology researchers, is responsible for the potential impacts of astrobiological discovery on Earth.