

The Ethical Dimensions of Habitability

Tony Milligan

King's College London

Anthony.milligan@kcl.ac.uk

Philosophical input

Role 1: Conceptual clarification:

- What will a good definition of/narrative about the concept of 'life' look like?
- What will a good definition of/narrative about the concept of 'habitability' look like?

Philosophical input

Role 2: Value Theory:

A. Might a habitable place be more intrinsically valuable than a non-habitable place?

B. Is microbial life intrinsically valuable?

C. What ethical implications might habitability have, given an answer to the question of intrinsic value?

A. Habitability and Value

- Might a habitable place be more intrinsically valuable than a non-habitable place?
 - Option-1: No, because places are just not intrinsically valuable. (Only people or sentient beings, or life forms have such value.)
 - Option-2: Yes, habitability can be part of 'structured integrity' of a place.

Integrity and Value

Appeals to integrity: certain objects have an integrity which we ought to respect:

Ayers Rock

The Grand Canyon

Mons Olympus

Mars as a whole

The Moon as a whole

If we buy into this story then habitability might be an aspect of structured integrity (on an extended account of the latter).

Do we need to worry about ethics imposing excessive constraints?

Appeals to integrity (e.g. by Holmes Rolston) do *not* on their own entail a 'hands off' attitude but rather give reasons for any actions with impact to show respect for place.

B Microbial Value

- Is microbial life intrinsically valuable?
- Variety of discourses have suggested that the answer to this is, in fact, 'yes':
- Albert Schweitzer; various sorts of ecological discourse (e.g. Robin Attfield); Charles Cockell; Chris McKay.

Three Arguments for Inherent Microbial Value

- Last Man Argument

Wanton destruction seems wrong

- Telos Argument

Even microbial life has a good of its own and can be harmed

- Metaethical Argument

No plausible story about why familiar/non-controversial ethical claims are true will allow us to exclude value claims about microbial life.

Do we need to worry about ethics imposing excessive constraints?

Pass-1: All value bearers are equally valuable (Schweitzer, early Deep Ecology, Tom Regan).

OBJECTION: This is not an ethic that we can live by.

Pass-2: Value does not entail equal value. Comparisons of 'greater' and 'lesser' value make sense.

ADVANTAGE: This yields a liveable and intuitively more plausible ethic.

C. Implication of habitability

What ethical implications might habitability have, given an answer to the question of intrinsic value?

Habitability

Where planetary body or region of space x is habitable while body or region y is not, knowledge of x might be a more significant epistemic gain.

Habitability

The fact that location x is deemed habitable might give us precautionary reasons to protect x from certain kinds of intrusion in case there is indigenous life (even if microbial).

Habitability

The fact that location x is deemed habitable might give us reasons to engage in certain kinds of life-spreading action. Chris McKay (2013) takes this path in support of the spread and diversity of life; Milligan (2015) is sympathetic. Both require something like a *defeasible* duty to spread life.

Habitability

Given something like a *defeasible* duty to spread life in the light of its inherent value:

The combination of (a) habitability; (b) accessibility and (c) knowledge of the absence of indigenous life, may yield a duty to spread life *to that location*.

QUALIFICATION: If integrity claims are correct, any life which we spread (and which might then radically transform its environment) might have to be suitable to the place in more than a survival-adapted sense.

Do we need to worry about ethics imposing excessive constraints?

There is the real possibility of local conflicts of interest over scientific practice, commercial interest and value responsiveness.

BUT...

None of the above implications of habitability are, from an ethical point of view, excessively demanding. They are also, *largely* 'science promoting' and consistent with 'science protection'.

END SLIDE-1: Key Conclusions

- (1) Habitability could be seen as significant in its own right on a structured integrity approach, but the latter is controversial.
- (2) Linking habitability to a microbial value discourse may yield requirements for protection in the case of probes or any more intrusive presence.
- (3) Linking habitability to a microbial value discourse *may* sometimes yield duties to extend microbial life to a habitable location if the latter is also accessible and the absence of indigenous life may be determined. (This is currently far beyond our capabilities.)
- (4) Linking habitability to a microbial value discourse does not by itself yield any requirements which are excessively/impossibly demanding.

END SLIDE-2: Key Directions for Future Work

- (1) Clarification of the relation between the concepts of 'habitability' and 'structured integrity' of the sort which figures in the literature on environmental ethics.
- (2) Clarification of the idea of microbial value.
- (3) Clarification of the idea of (and justification for) a duty to extend life.

END SLIDE-3: Anticipated contributions from other fields

- (1) Improved conceptualisation of, detection methods for, and estimate of the extent of habitable locations.
- (2) Clarification of different senses in which it makes sense to speak about 'habitability'.
- (3) Clarification of how we might determine uninhabitability.

Key Texts

- Bertka, Constance, M. (2009), *Exploring the Origin, Extent, and Future of Life: Philosophical, Ethical, And Theological Perspectives* (Cambridge: Cambridge University Press).
- Impey, Chris. Anna H.Spitz, and William Stoeger (eds.). (2013), *Encountering Life in the Universe: Ethical Foundations and Social Implications of Astrobiology* (Tucson: University of Arizona Press).
- Milligan, Tony. (2015), *Nobody Owns the Moon: The Ethics of Space Exploitation* (Jefferson, North Carolina: McFarland).
- Persson, Erik. (2014), 'What Does It Take to Establish that a World Is Uninhabited Prior to Exploitation? A Question of Ethics as well as Science,' *Challenges* 5 (2014): 224-238.

Forthcoming: Milligan, T. and James S.J.Schwartz (2016), *The Ethics of Space Exploration* (Heidelberg, London and New York: Springer).

Special edition of *Space Policy*, 30.4 (2014) on Space Ethics.