

Topic: Colonization of Mars

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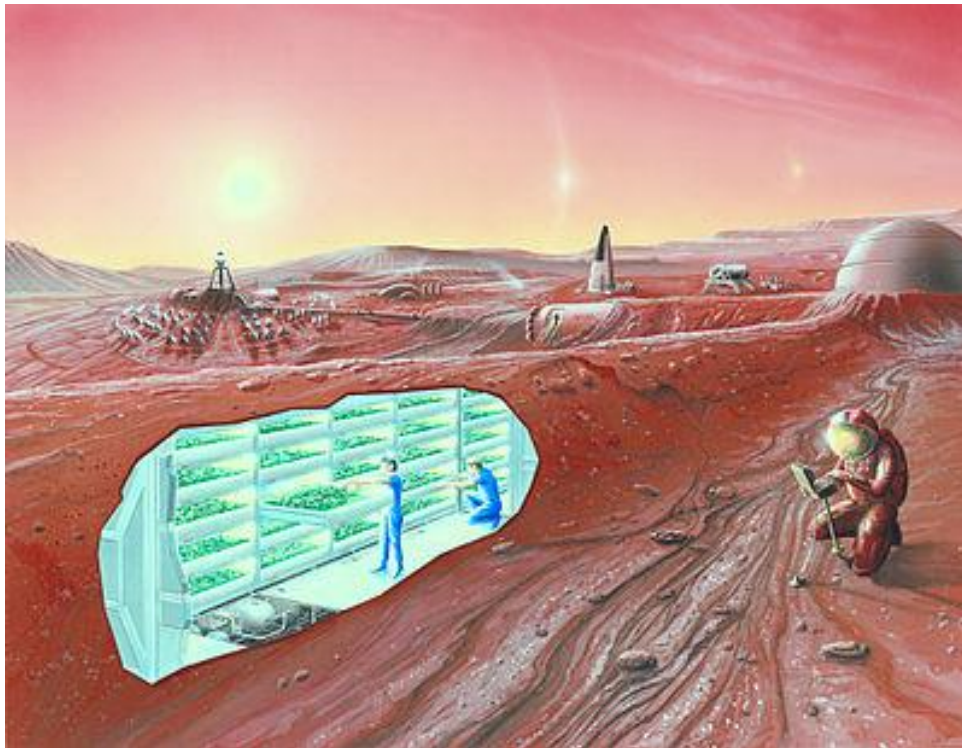
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Relevant Online Resources

Press

- [Nasa reveals plan to get humans living on Mars](#)
- [Elon Musk Gives Updates on Mission to Mars.](#)

TED Talks:

- [Your kids might live on Mars. Here's how they'll survive | Stephen Petranek](#)
- [The Exploration and Colonization of Mars: Why Mars? Why Humans? | Dr. Joel Levine | TEDxRVA](#)

Articles:

- [As Silicon Valley lays plans to colonize Mars, researchers offer a blueprint for governing it](#)
- [Journey to Mars - NASA](#)
- [NYT - Life On Mars 360](#) - Isolation is very much present in these videos
- [NASA believed they can make Mars Green again](#)
- [Lewis and Clark](#) - Colonization

Books:

- What Has Nature Ever Done For Us? - Tony Jupiter (chapter on Biosphere 2 --- suggested by Marina)

Machine Learning Bias:

- <https://towardsdatascience.com/how-do-machine-learning-algorithms-learn-bias-555809a1decb>

Border Control asking for social media phone access at airport:

- <https://www.nytimes.com/2017/02/14/business/border-enforcement-airport-phones.html>
- <https://www.theverge.com/2017/5/4/15551492/aclu-us-customs-and-border-patrol-aaron-gach-phone-search>

Daily Action (Ongoing)

- Read through Google Alerts about 'Mars', 'Colonization of Mars', etc...
 - <http://ibnservice.com/2017/11/07/mits-idea-of-sustainable-mars-habitats-is-redwood-forest/>
 - <https://www.smartbrief.com/s/2017/11/mars-habitat-design-contest-seeks-3rd-phase-entries>
 - NASA has kicked off the third phase of its Centennial Challenges program, asking contestants to use **3D printing**, **recyclables** or

Mars-sourced materials to design a habitat suitable for Mars. Ideally, the design concept could also be used on earth for temporary and affordable housing. (This is super interesting!)

Weekly Action 2 - Watch a relevant movie, go see an exhibit, etc (week of 11/3)

- 11/3 - Q: Who are the people funding SpaceX and Mars One? Are you able to find them funding any other suspicious companies that points to a potential motivation?
 - *Takeaway*: Dead End (nothing too interesting that I can get access to...):
https://docs.google.com/spreadsheets/d/1aMdGwWSHuYPvheBTJO4g8yLroUjIArUp_9Ik_PNHmeQ/edit#gid=0
- 11/6 - Watched the movie *The Martian* starring Matt Damon.
 - Reaffirmed visually some of the scientific challenges that we might run into (example, issues growing crops in current soils, not enough atmosphere to keep warm, etc.)
 - Aspect of isolation --- I think this was the most interesting aspect of this movie and could be something I could work with.
- 11/13 - Went to go see Jimmy Durham at the Whitney
 - It was really inspiring to see the breadth of work that he has created about a culture and community. The depth and detail leaves you feeling in awe.
 - *Takeaway*: Immersion into the community that you want to speak for and with is a must (whether you are a part of the community or not).

Weekly Action 3 - Additional Things to look at / interesting references (week 11/12 - ongoing)

- [Frances Stark](#) (How it applies to my project?: bible/rules of how to operate in the galaxy?)
- [Manifesto](#) - Inspiration for Audition tapes?
- Army recruitment - research for final presentation
- 23 and Me collection (who gets access to this?)
- Ancestry.com (I've heard they sell their data)
- [Say Something Bunny](#) - Performance based documentary (one-woman show where she leads the viewers through the story and plays the characters) Inspired audition tapes as well as final presentation
- [Yes Men](#)
- Marcus Coates [Journey to the Lower World, 2003](#) - Inspiration to make final a performance rather than just a presentation.

Notes from What Has Nature Ever Done For Us?

Weekly Action 4 - Read "What Has Nature Ever Done for Us?" (week 11/20)

Written by Tony Jupiter

- the sum of all the living systems and the relationships they have with each other
- functioning of all ecosystems is a subject under investigation for Biosphere 2
 - John Allen (created the idea for Biosphere 2) he was less interested in materials and things and more interested in relationships— The interactions that allow for a self-sustaining biosphere to function.
- "Teams of experts then set about detailed design of the biomes, choosing the species and the types of ecosystems that would be included. By far the most complex and challenging to design were the agricultural, rainforest and coral reef biomes."

Regarding above, who will be choosing the human species?

In Biosphere 2, Every species were very carefully chosen to support the ecosystem the the human species that occupy it. Animals that would be raised for food and companionship, determining the correct number of predatory and prey relationships, nutrients balancing to promote healthy soil and atmosphere. I feel that this is equally important to think through the human relationships and who we choose to bring to that new world.

When thinking about the social structure of how Mars will succeed, diversity in job function, ability, culture will need to be considered otherwise we will not be successful in the journey.

Questions regarding species on Mars: once stable, would we want to introduce different species from Earth on Mars or would there simply be two different species branches that would not overlap moving forward?

- Mark Nelson, one of the 8 crew in Biosphere
- ethnosphere (the world of human culture)**
- "Half an acre supported eight people for two years, with a half-day working that little piece of land and half the day doing other work. If you scale that up, you could support 10,000 people per square mile"

Relevant Interviews / Experts I reached out to hoping to start a conversations (weeks 11/20 - ongoing)

Tony Jupiter

An excerpt from my email.

“...One of the paragraphs in the Biosphere 2 chapter in your book mentions, “John Allen was less interested in materials and things and more interested in relationships— The interactions that allow for a self-sustaining biosphere to function.” Now when I hear that sentence, I immediately think of the concept of a balanced ecosystem by determining the correct number of predatory and prey relationships, nutrients balancing to support healthy soil and atmosphere, etc. However, what about the balanced relationships of the people in this new environment? Again, I ask the question, who do we send to Mars and who gets to make that decision? Would you be granted to go if you have a perfect 23andMe genetic score plus psychiatric evaluation? What would that way of determining look like? Will it just be the rich that make it to Mars? Silicon Valley #2?

I would love to hear your opinion on this topic. Do you think that “Biosphere 3” -- the colonization of Mars will be successful? And how would you propose we make the decisions of who gets to go and who doesn’t....”

No response even after a couple of follow ups.

Kim Binsted

Who were the psychologists on the ‘practice tests’?

HI-SEAS (highlighted on NYT 360)

<https://www.usatoday.com/story/tech/2017/09/15/psychology-experiment-kept-six-nasa-subjects-isolated-mars-volcano-8-months/669940001/>

http://hi-seas.org/wp-content/uploads/2016/01/HI-SEAS-MediaKit_01Jan2017b.pdf

The crew played games designed to measure their compatibility and stress levels. And when they got overwhelmed by being in such close proximity to each other, they could use virtual reality devices to escape to tropical beaches or other familiar landscapes.

The project's lead investigator, University of Hawaii professor **Kim Binsted**, said the crew members also kept written logs about how they were feeling.

"This is our fifth mission, and we have learned a lot over those five missions. We've learned, for one thing, that conflict, even in the best of teams, is going to arise," Binsted said. "So what's really important is to have a crew that, both as individuals and a group, is really resilient, is able to look at that conflict and come back from it."

From the second link above, I was able to reach out to **Kim and her research assistant Simon Engler** specifically about how they came to the conclusion as to who and how they deemed individuals as 'fit' to be put in this situation. Unfortunately, I didn't hear back, but I still found it interesting to read about this project and feel that it contributed to my project regardless of their contribution directly.

Conversation with Clay Shirky

1. Question regarding new thought on the topic****: **Where is there an example where individuals are entirely willing to give up their agency and why?**

- Robber's Cave experiment
- Cults
 - Jonestown
 - Heaven's Gate
 - Charles Manson to Bhagwan Rajneesh
 - Scientology

2. One serial killer and everyone is dead (puncture the oxygen tanks)

3. Men expendable and women aren't ---- Affect future generations.
Gender balance

Psychologist: Norbert Schwarz

<https://tfm.usc.edu/master-of-mind-games/> Human Behaviour --- who would be successful, why?

Reach out to Norbert to further a short conversation over email regarding his work below. To see his opinion on the importance of genetic diversity being sent to Mars regardless how similar we actually are genetically. Especially, since the concept of [Mitochondrial Eve](#), how far apart genetically do we need to be to be considered to be taken to Mar. I would assume we would want genetic diversity so that we are able to evolve and survive on that planet. I got an

automated email back saying that his response might be delayed since he was on sabbatical, but not word from him, even after couple of follow ups.

We are all related: <https://phys.org/news/2013-08-dna-earth.html>

Narrowed Focus for Final

Topics wanted to address in final based on research

Immigration rather than Colonization

1. Who will get to go?
2. Who will be the people that get to choose?
3. Immigration to Mars (already settled) not colonization of Mars
 - a. Commentary on current immigration status in U.S.
4. Privacy & how much of our agency we are willing to give up
 - a. What if immigrants coming to the U.S had to give genetic data as well? They are already starting to be asked to unlock phones at airport for social media investigations
5. Who will receive the data once collected?
6. AI and Machine Learning Bias

Why would people was to move to Mars? As a recruiter, what is my hard hitting notes?

1. Lots of opportunity for jobs on Mars

Mars Department of Homeland Security's motivation to get people to immigrate to Mars

1. Reduce extinction of human race
2. Gain every bit of data about each person moving to Mars (psychological, online data, genetic, etc)