

One-way ticket to Mars? No!

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*Soon it will be possible to put a human on Mars. All that is required is time and a substantial amount of money. Humankind is impatient, however, and recently the idea has been floated that we could speed up the process, and cut the cost, if we would send a colony of humans on a one-way ticket to Mars. Concrete projects are entirely unrealistic in technical and funding terms, which, however, has not stopped the general public from being fascinated by the idea. And the idea has a logic, even if current projects do not. It is, indeed, cheaper and quicker to send people to Mars, if we do not need to concern ourselves with their long term prospects or getting them back. This Perspective explains why we should explore Mars with astronauts, and why we should **not** do so without being able to bring them back.*

1. The Context

Over the last couple of months many papers, journals and online websites have covered the topic of a one-way ticket to the Red Planet. The idea that, within the next ten years, a chosen few might be able to go and spend the rest of their lives on Mars has attracted not only global attention but caused a lot of debate, despite the proposed projects being entirely unrealistic from a technical, financial and schedule perspective. Still, human exploration of space has, in this odd context, reconnected a bit with its 'Armstrong' moment. Sending a human being to Mars would satisfy our need to explore, push the physical boundaries of humanity, and in the era of ultra-easy communication the entire world would be able to be a part of the experience. But is it too good to be true? Or, rather, is it too early to be good?

2. Why the One-Way Ticket?

When reflecting on the general idea of a one-way ticket to Mars (without in any way endorsing the feasibility of the current 'projects') the main issue is to understand the rationale. Why send people on a one-way ticket, if you could instead return them? Three main reasons are stated or implied:

- 1) It will delay the activity
- 2) It will make it too costly
- 3) There is no need to bring people back

So let us look at these reasons one by one.

2.1 It will delay the activity

It is evidently true that having to be able to bring back persons from Mars will delay humankind exploring its vicinity with humans. But does that really matter?

If we want to understand Mars and what it is made

of then human presence might, of course, be optimum. However, rovers and robots can do a lot of the fact finding for us – and those, indeed, we do not need to bring back. But robots cannot colonise Mars for us, so if that is our aim, perhaps one-way tickets are OK. Perhaps humanity should strive to become extra-terrestrial as well as terrestrial life, and that as a matter of urgency.

Very respectable scientists, such as Stephen Hawking, have suggested that humankind must colonise other planets in order to have an escape when our own planet becomes uninhabitable. This may be true but we consider this a horrifying perspective if it is taken to mean that it is so urgent that we cannot wait until we can do so properly (and to be fair to Hawking this is not what he suggests). We consider this argument even more horrifying if it implies that we need to colonise other planets because humankind has messed up Earth to such an extent that it is uninhabitable. We pity the 6.9999999 billion humans that will not be saved by Mars as an Arc of Noah, and we strongly suggest that instead of entertaining escapist dreams like this we should stop maltreating Earth and concentrate our efforts on rolling back the destruction which we have wrought unconscionably for such a long time.

From an ethical perspective we also question whether humankind should be entrusted another planet if we cannot manage the abundant resources of Earth in such a way that colonisation of other planets becomes unnecessary. And we consider it unlikely that much happiness will come from permanently transplanting humans from the environment they have been evolutionarily conditioned for, to what for all intents and purposes will be an overwhelmingly hostile and inorganic habitat.

2.2 It will make it too costly

At first glance it appears more costly to bring the colonists back than to just leave them there. But is that truly so? It would be true if the colonists within a very short period of time could build a self-sustaining environment, meaning that they would not have to rely on supplies to be continually provided from Earth by means of the most expensive mode of transport known, namely by rocket-launched supply vehicle. The ambition of the colonists will presumably be exactly to build an autarkic society on Mars, but it defies logic to believe that this can be done quickly. Hence, the

colonists will rely on supplies and spare parts from Earth for any foreseeable future. This fact makes it unlikely that it will be cheaper to send colonists on a one-way ticket than to prepare properly and be able to return them after the colonist dream has been lived and the feasibility demonstrated. One of the most disturbing aspects of the one-way idea is that, contrary to what is being stated, this is not just a bunch of enthusiasts doing what they want with their lives. If the idea would be allowed to be realised it would force the hand of the global community to finance a permanent settlement on Mars, a hugely expensive undertaking which should be subject to normal democratic decision-making. Of course, at one point this might become affordable and worthwhile, but currently it is not. So, again, the issue is: why the hurry? In the democratic process we, the authors of this piece, would be inclined to support the aim of demonstrating the possibility of humanity's long-duration stay on another planet, but not the establishment of a permanent settlement before this becomes much cheaper than it would be today.

There is a permutation on this theme to consider, which is that one could argue that we should send persons on a one-way ticket and while they 'live and prosper' on Mars we figure out how to possibly get them back and how we can make the permanent settlement affordable and independent of supplies from Earth. Yet, again we ask: why the hurry? Why use humans as guinea pigs, even if they are willing, when there is a much better way, admittedly involving more time, but, for that, being less costly, and, importantly, preserving our humanity in the moral sense.

2.3 There is no need to bring people back

One argument in favour of a one-way ticket might be that those hardy Mars colonists would not want to go back anyway – just like most of the Pilgrim Fathers colonising America. This argument overlooks a most obvious fact, however, and that is that the Pilgrim Fathers left for America in the hope of better lives than the persecuted ones they left behind. The Mars colonists know that the life that would await them on Mars would be infinitely worse than the one on Earth. So the motivation is ultimately curiosity or fame, not the search for a better life. Yet it can be doubted that curiosity will be seen as much of a benefit after the colonist has spent 20 years in a small, uncomfortable and potentially unreliable hut with a very limited

number of other people he or she might have grown to detest or have lost the ability to like or to love. The hippie dream of the commune can quickly become very stale when it is not lived in Big Sur, where even the splendour of the nature and liberal use of recreational drugs did not ensure sustainability. And as for fame it might not be worth much when the other colonists might be similarly famous, and when there is nobody to stop you in the street to ask you for an autograph. Oops – no street, at all!

If a potentially better life would await the colonist on Mars nobody should seek to stop them, but if that better life consists of only fame and the satisfaction of curiosity, then we should let those benefits be reaped by those who can also return to tell the tale and bathe in the adoration of fellow humans. Ultimately it is society's curiosity which is satisfied vicariously and it is society which bestows fame. It seems entirely proper that society declines the offer of colonists to explore Mars at the expense of being unable to return to a truly better life here on Earth.

Apart from this there is a real question mark against the assumption that a capability to bring people back will not be practically needed. Faced with a reality which nobody can truly imagine there will without a doubt be many who will change their minds in the shorter or longer term. There will be those who will become seriously ill and will be untreatable in the Martian haven, and there will be those who lose their minds because of the disastrous decision they made to take the one-way ticket. And, of course, the Martian abode might mal-function beyond the possibility of repair. So Earth society will say, 'tant pis, they made their choice and will now have to live and to die with it'? Don't think so! Surely we would go into Apollo 13 mode and try everything possible to save the stricken Martians. Yet, this is not proper. What is proper is to wait with such adventures until we have the means also to escape when something goes wrong – and yes, we have time to wait! For 5 million years humankind stayed on the Blue Planet. The red one can wait another 20-30 years!

3. Libertarianism

The strongest argument for the one-way ticket might be perceived to be the libertarian one: if a person wants to jump out of a plane without

parachute, let him! The libertarian logic in its extreme form would lead to the legalisation of hard drugs, consensual cannibalism and, most importantly, to the abandonment of the compulsory use of the seat belt. Nevertheless, hard drugs are banned by society, as is consumption of human flesh and driving a car without fastening the seatbelt. Those of us favouring these rules do so because we believe that human freedom must be exercised within boundaries of civilisation and standards of collective care. We know that using the seat belt will save many lives, so we, as a society, dictate that these lives be saved.

More relevantly, we as a society also prohibit the selling of organs of living donors and put strict limits on human testing of medicines in order to protect the destitute who might otherwise be tempted to cast aside all caution in pursuit of sustenance.

In a similar logic we believe that even if the one-way colonists would go voluntarily they should not be allowed, because it runs counter to our culture of not using humans as guinea pigs, or at least not to that extent.

The colonists will argue that they are not being used as guinea pigs, because they go for their own sake, so the case is more like the use of experimental medicine by the incurably ill. And yet also there our laws and culture are very restrictive. The bottom line of that argument is, however, that it is not entirely true that the colonist will go just for their own sake. Ultimately it is society which will enable their dream, and society will do so because it wants to live vicariously through the colonists. No colonist will pay the trip entirely her- or himself, and we are hence in an entirely different situation than that of space tourists. The libertarian argument, questionable as it is in the first place, would only have some validity if society would not have to underwrite the effort, either as the funder in the first place or supplier and rescuer thereafter. And only if society did not have the strong impulse of vicarious living – one that is amply demonstrated by the overwhelming public interest in the mooted, and entirely unrealistic projects. The libertarian dream is an individualistic one – the one-way ticket dream is inherently collectivistic! As a collective we should say no!

4. Conclusion

There are many reasons for not allowing the one-way ticket scenario to go ahead, reasons like the immature state of the technology for such a venture, issues of applicable laws and their enforcement, the possible national appropriation of other planets, currently outlawed by the Outer Space Treaty, and our terribly incomplete knowledge about the effect on human health of permanently moving away from the place of our evolutionary origin, levels of radiation being an obvious case for worry.

The overriding concerns for us in saying that such endeavours should not be allowed to go ahead are, however,

- that they unduly nurture an escapist dream that might distract us from doing right by our existing planet
- that we should not allow ourselves to use human guinea pigs in order for us to live a dream vicariously
- that society will inevitably be drawn into the quest because a permanent settlement will have to be permanently supplied and, more likely than not, individual or all colonists will have to be rescued. Sooner or later society will have to step in
- that there are no good reasons to hurry to go to Mars in this manner. Let robots go on the one-way ticket, and let us not confuse the value of a human life with that of a robot!



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