Mars ain't the kind of place to raise your kids. Or is it?

## *Colonizing Mars won't be easy, but we can't let the challenge of exploration stop us.*

**By Glen Reynolds**

In the *New York Times* recently, Ed Regis wrote, “Let’s not move to Mars. First, there is the tedious business of getting there. Using current technology and conventional chemical rockets, a trip to Mars would be a grueling, eight- to nine-month-long nightmare for the crew. Nine months is a long time for any group of people to be traveling in a small, closed, packed spacecraft. ... In addition, there will be persistent mechanical noise and vibration, sleep disturbances, unbearable tedium, trance states, depression, monotonous repetition of meals, clothing, routines, conversations and so on.”

That’s true, of course. It’s also true, as Regis notes, that Mars itself is inhospitable: Cold and dry. In recent years we’ve discovered that Mars has a lot more water than we once thought, but “a lot more water” isn’t the same as “a lot of water.” There’s oxygen in plenty, too, but it’s not freely available in the atmosphere (except as part of carbon dioxide); [you have to extract it](http://isru.nasa.gov/CarbonDioxideOxygen.html).

Regis writes in response to a number of recent proposals — most notably from tech-adventurer [Elon Musk](http://aeon.co/magazine/technology/the-elon-musk-interview-on-mars/) — to colonize Mars anyway. Musk isn’t the first to make such plans; back in 1988, when I was working for then-senator Al Gore’s presidential campaign, I researched [Mars mission architectures](http://archives.chicagotribune.com/1969/09/16/page/40/article/nixon-backs-commitment-for-mars-trip) that NASA had worked up under President Nixon during the [Apollo era](http://www.nasa.gov/50th/50th_magazine/10presidents.html). But Musk has unique credentials: He’s a very smart guy, he’s a very rich guy, and he’s already [building](http://www.space.com/18853-spacex.html) working spaceships.

So going to Mars raises three questions: (1) Can we do it? (2) Even if we can do it, is it too hard? and (3) Even if we can do it, and it’s not too hard, is it worth the trouble?

The answer to question one is “yes.” We can send people to Mars. We [already send robots](http://mars.nasa.gov/mer/home/) to Mars, and have done it so often that it’s barely even newsworthy. In fact, Mars [is currently](http://space.io9.com/this-is-every-place-in-the-solar-system-ever-occupied-e-1645507693) the only known planet inhabited entirely by robots.

We also have plans. Lots of them. The “[Mars Direct](http://www.marssociety.org/home/about/mars-direct)” mission architecture developed by Robert Zubrinin the 1990s, and spelled out in his popular book, [The Case For Mars](http://www.amazon.com/gp/product/0684835509?ie=UTF8&tag=wwwviolentkicom&link_code=as3&camp=211189&creative=373489&creativeASIN=0684835509), would not only work, but would create the infrastructure for colonization from the get-go, and in less than a decade.   (When I email Zubrin about Regis’ article, he responded: "If Regis had lived in the Middle Ages, he could have made a good income painting dragons on maps.")

The answer to question two – “will it be too hard?”-- depends on what “too hard” means. Regis talks a lot about the personal discomforts involved in a Mars trip, but I suspect that the Mars crew would have things a lot easier than the crews of [Columbus](http://ageofex.marinersmuseum.org/?type=webpage&id=51) and Magellan, who themselves endured months-long voyages with scant rations, cramped space, and high stress. But they also had to climb high above the deck in the middle of a gale to take in sails and risked flogging or [hanging](https://books.google.com/books?id=PXJkAAAAMAAJ&pg=PA151&lpg=PA151&dq=emperor+of+%22rope+and+knife%22&source=bl&ots=7Jc8BrTPh5&sig=fPNUo5zCMEUTPeCtzobYxQI0-1o&hl=en&sa=X&ved=0CB0Q6AEwAGoVChMI48fF0cGNyAIVxsyACh3kmQU7#v=onepage&q=emperor%20of%20%22rope%20and%20knife%22&f=false) for even mild infractions. Exploration is always difficult and uncomfortable. People who like ease and comfort should stay home.

As for question three – “is it worth the trouble?”-- well, that’s the easiest. Yes, it’s worth it. If human beings become a multi-planetary species, we become harder to wipe out. If Musk’s ultimate goal of [a million colonists](http://aeon.co/magazine/technology/the-elon-musk-interview-on-mars/) living on Mars in a self-sustaining way bears fruit, then even calamities that would wipe out life or civilization on Earth, like a major nuclear war or asteroid impact, will no longer be extinction-level events. That’s a pretty big deal.

But I think there’s an even bigger reason to settle Mars: Earth civilization has become boring and inbred. Back in the 1960s, people talked about the development of a “[global village](http://www.livinginternet.com/i/ii_mcluhan.htm),” but village life can get awfully stagnant, especially when there is nowhere else to go. A Mars society, developing at a distance from Earth and in a different environment, would bring useful diversity to human culture.

So, contrary to Regis, I think a Mars colony would be a great idea. After all, innovation has always been doubted in its time. In reading Regis’ column I was reminded of another New York Times piece on the wastefulness and difficulty of space research. It was a 1920 editorial by the Times chiding Robert Goddard for his foolish interest in rocketry: Everyone knew, the Times editors wrote, that a rocket couldn’t work in the vacuum of space, as there would be nothing to push against. The Times published a [retraction](http://www.popsci.com/military-aviation-amp-space/article/2009-07/new-york-times-nasa-youre-right-rockets-do-work-space) 49 years later in 1969, as men landed on the Moon, commenting: “Further investigation and experimentation have confirmed the findings of Isaac Newton in the 17th century and it is now definitely established that a rocket can function in a vacuum as well as in an atmosphere. The Times regrets the error.”

Will space history repeat itself? I believe that it will.

(Reynolds, G. H. (2015, September 24). Mars ain't the kind of place to raise your kids. Or is it? Retrieved February 15, 2016, from http://www.usatoday.com/story/opinion/2015/09/24/glenn-reynolds-mars-colonize-explore-musk-nasa-column/72672032/)

**Answer Key**

Mars ain’t the kind of place to raise your kids. Or is it?

Glen Reynolds

**Thesis:** In spite of all the difficulties and risks, we should pursue the colonization of Mars to improve humanity.

**Main Point 1:** Ed Regis has suggested that we should not pursue the colonization of Mars because the the travel and living conditions will both be extremely arduous. However, he is wrong.

**Main Point 2:** A manned mission to Mars as well as colonization are extremely possible.

1. Robert Zubrin put forward a detailed plan for the colonization of Mars all the way back in the 90s.
2. More recently, luminaries such as Elon Musk have put forward intelligent proposals.

**Main Point 3:** The undertaking will certainly be extremely difficult, but exploration has always been extremely difficult.

1. Earlier sea-faring explorers under Christopher Columbus and Magellan endured worse than travelers to Mars likely would.

**Main Point 4:** Travel to Mars, and eventually colonization, is necessary because it helps to ensure the continuation of the human race in case of a world-wide disaster.

**Main Point 5:** Travel to Mars would also be beneficial because it would create more diversity in human culture.

1. Since the advent of “globalization” culture on Earth has become extremely homogeneous.

**Main Point 6:** In the past, people have always said that scientific achievements were impossible, but they were proven wrong.

1. A columnist in 1920 suggested that space travel would be impossible, since rockets would never work outside of our atmosphere.

Paraphrasing exercise (PRACTICE ONLY – NOT FOR GRADES)

**1)**  *“We also have plans. Lots of them. The “*[*Mars Direct*](http://www.marssociety.org/home/about/mars-direct)*” mission architecture developed by Robert Zubrinin the 1990s, and spelled out in his popular book,*[The Case For Mars](http://www.amazon.com/gp/product/0684835509?ie=UTF8&tag=wwwviolentkicom&link_code=as3&camp=211189&creative=373489&creativeASIN=0684835509)*, would not only work, but would create the infrastructure for colonization from the get-go, and in less than a decade.   ”* **(Reynolds, 2005, par. 6).**

* What keywords need to be kept in order to retain the author’s meaning?
* What repeated words or phrases can you delete entirely without changing the original meaning?
* Which words or phrases can you replace with synonyms or similar words?
* Write a one- or two-sentence paraphrase of the passage. Be careful to retain only the essential key words, while changing the rest of the word choices. Make sure to also change word order and sentence structure in order to paraphrase fully.

1. *“As for question three – “is it worth the trouble?”-- well, that’s the easiest. Yes, it’s worth it. If human beings become a multi-planetary species, we become harder to wipe out.”* (Reynolds, 2015, par. 8)

* What keywords need to be kept in order to retain the author’s meaning?
* What repeated words or phrases can you delete entirely without changing the original meaning?
* Which words or phrases can you replace with synonyms or similar words?
* Write a one- or two-sentence paraphrase of the passage. Be careful to retain only the essential key words, while changing the rest of the word choices. Make sure to also change word order and sentence structure in order to paraphrase fully.

3) *Innovation has always been doubted in its time. In reading Regis’ column I was reminded of another*New York Times*piece on the wastefulness and difficulty of space research. It was a 1920 editorial by the* Times*chiding Robert Goddard for his foolish interest in rocketry: Everyone knew, the* Times*editors wrote, that a rocket couldn’t work in the vacuum of space, as there would be nothing to push against. The*Times*published a*[*retraction*](http://www.popsci.com/military-aviation-amp-space/article/2009-07/new-york-times-nasa-youre-right-rockets-do-work-space)*49 years later in 1969, as men landed on the Moon. (Reynolds, 2015, par. 10)*

Good and Bad Summary Versions of “Mars ain’t the kind of place to raise your kids. Or is it?”

1. Identify which version is the good summary and which is the bad summary.
2. Make a list of everything that is wrong in the “bad summary.”

**Version 1**

In the article “Mars ain’t the kind of place to raise your kids. Or is it?” Glen Reynolds suggests that humanity should colonize Mars, despite all the difficulties and potential risks. First, Reynolds brings up an article in the *New York Times* by Ed Regis, where Regis suggests that colonizing Mars would be too arduous and too uncomfortable to pursue. Reynolds contradicts this by suggesting that a manned mission to Mars is entirely possible. As examples, he cites the plans of Robert Zubrin and Elon Musk. Furthermore, Reynolds explains that exploration has always been uncomfortable, and that discomfort is not a good enough reason to abandon Mars. Most importantly of all, he suggests that the colonization of Mars is essential for human survival; it would ensure the continuation of humanity in the event of a planet-wide catastrophe. Colonization would also help to diversify human culture, which has become alarmingly uniform since globalization. Reynolds concludes his article by suggesting that scientific achievements have always been doubted in their time, but that ambitious and innovative people have always been able to silence the critics.

**Version 2**

This author says that humans will never be able to travel to Mars because it is extremely far and it would also be extremely uncomfortable and difficult to survive. I personally find this confusing, since later he suggests that we CAN go to Mars and that we probably should. Anyway, Ronalds talks about this guy Zubrin who put together a plan to go to Mars for Richard Nixon. Reynodes also explains that there are three questions we should be asking when it comes to colonizing the planet of Mars. These three questions are: Can we do it? Will it be difficult? And Is it worth the trouble? Rooney answers all three of these questions by using specific examples. I’m not really sure how I feel about Mars, but I saw a National Geographic video that suggested it may be possible, so it is probably a good idea.