

# Colonising Mars: Lessons from the Past

## Introduction

With humanity's tenacious desire to continually push the boundaries of our habitable reality, it is no wonder that our contemplations turned to life outside of our planet. Named after the Grecian God of War and emboldened in our fantasies as our 'sister planet'<sup>1</sup> Mars has long inspired imaginations. In the mid-1800s, an American astronomer Percival Lowell looked out to the planet Mars and rejoiced in seeing what he believed to be canals on its surface. Convinced that these were signs of intelligent lifeforms, he spent the rest of his life attempting to convince the population of his discovery; so beginning the stint of Mars in sci-fi popularity(1).

In today's world, establishing a colony on Mars has taken its first steps out of science fiction, and into reality. Billionaires such as Elon Musk are claiming they will colonise Mars within their lifetimes, suggesting establishing a Martian colony of a million people by 2050(2). Elon's reasoning behind these colonies seems to reflect an altruistic idealism. He claims that humans need to establish a presence on Mars to conserve "the continuance of consciousness as we know it"(3). But how fastidious has his thought process been, and are there lessons to be learned from the past before we springboard a colony into the future?

In this essay, I hope to explore some of the forewarnings provided to us by earlier civilisations, whilst highlighting questions we should be asking when considering future colonies. Although offering no solutions, the aim is to emphasize the complexities behind colonisation and to suggest a 'bigger-picture' approach when considering humanity's next move in establishing a successful colony on our 'sister planet', Mars.

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<sup>1</sup> Scientists believe that Billions of years ago, Mars may have once looked similar to Earth, with both an atmosphere and liquid water on its surface. This has led to the concept that Mars is our 'sister planet'(24).

## Where do your loyalties lie?

Great civilisations grew their influence by expanding and conquering new lands. From the Mongolians in the East to the British in the West; great empires were forged (and felled) on the backs of colonization. However, expansive growth also opened society up to weakness. When spread too thinly across the atlas of the world, Empires could often lose their grip on the political control of these colonised lands.

The Roman Empire is accredited as being one of the most influential empires in human history. During the period of the High Empire<sup>2</sup> it encompassed an area of roughly 5 million km<sup>2</sup>(4). Its collapse is a topic of debate amongst many historians, however, the most likely answer is that Rome's monumental growth coupled with opposing internal perspectives meant it was too powerful to be governed under one rule(5,6). An example of this is witnessed within the Roman colonisation of Britain. A wild and untameable place, the first Roman settlement of Camulodunum<sup>3</sup> was established under Emperor Claudius circa 43 AD(7). However, control of Britain was onerous, and Rome had to invest great amounts of manpower and resources in maintaining it. The importance of this tale comes into play when considering what is required to establish a colony on Mars. Insurmountable investment of resources and energy would be needed, potentially leaving the investing nation weakened by the expense. This mission is also likely to require international cooperation and financing, meaning whoever oversees the colony of Mars may preside over vast amounts of resources sent in from Earth. This access to great power allows human nature the opportunity of being corrupted.

A corruption of this calibre was witnessed in Roman-Britain, where multiple Generals stationed there utilised their access to large armies in an attempt to usurp the empire of Rome(8,9). Although unsuccessful, this civil unrest eventually contributed to the fall of the Empire. When considering Mars, it would be wise to consider the concept of loyalties shifting between nations to grapple for increased power on the Galactic stage.

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<sup>2</sup> 'The High Empire' is the name given to the Roman Empire between 31 BC – 305 AD when it was at its peak territorial and political power.

<sup>3</sup> Now known today as Colchester, Essex.



An evolution of these events can be seen when reflecting on the expanse of the British Empire and colonisation of North America through the Thirteen Colonies<sup>4</sup>. Although bringing the British empire great wealth and prosperity<sup>5</sup>, the colonies were taxed highly as Britain had incurred high debts following the French and Indian wars(10). This caused great unrest throughout the Thirteen colonies as they felt they were no longer represented within the British Empire leading to the American Revolutionary war in 1775 and its independence from British rule.

This segregation felt by the Americas is a clear warning to be acknowledged. If the Martian colony feels underrepresented within the scope of politics, it may become ungovernable and demand independence. The establishment of a colony does not entitle Earth to unquestionable governance over the territory.

With these points in hand one can start to consider, if humanity were to establish a colony on Mars, and pour resources into ensuring the maintenance and security of this colony, can we incontestably believe that the loyalty will prevail? If war were to break out on Earth between 'parental nations'<sup>6</sup>, is there danger that the Martian colony will become dominant in the fight – or even align with the nation's enemies? By inputting enough power and resource into a colony on Mars to ensure its sustainability, one is also paving the way to ensuring its independence from Earthly control.

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<sup>4</sup> The modern-day USA

<sup>5</sup> By 1770, the 'Thirteen Colonies' (later the USA) made up 40% of the British Empire's gross domestic product(25).

<sup>6</sup> The 'parent' or coloniser of the new territory.



## United we stand, divided we fall.

It is a well-understood concept that strength comes from unity. Many civilisations<sup>7</sup> throughout time have fractured and subsequently collapsed - the division of society weakening them to any external invasion or attacks. It is therefore paramount for the success of a colony, to preserve the unity of the society.

Easter Island (or Rapa Nui) is an example of a small, isolated island which according to European explorers was barren and desolate.<sup>8</sup> For decades, the demise of the Easter Island Colony was attributed to the Polynesians degradation of the environment, leading to societal collapse. It was believed that the Polynesians over-farmed the soil to support their exploding population(11), whilst deforesting the land to aid in the construction of the giant Moai<sup>9</sup>. However, recent research and Carbon-dating techniques suggest that this was not the case(12). Archaeologist Carl Lipo proposes that the construction of Moai may have been the preserver in the Easter Island Society(13). It is now believed the introduction of Polynesian rats caused widespread deforestation within the first few years of the colonisation of Rapa Nui(12,14). This rapidly led to the degradation of the environment and the limiting of valuable resources. However, by coming together in a community and building something of value to them all, they were able to prevent civil warfare from breaking out(15). Furthermore, it is suggested that the building of statues helped divert any aggression felt between tribes, allowing a non-violent form of competition to emerge(12). The idea of non-violent competition preventing war is not a new one, with King Iphitos of Elis introducing the Olympic Games in 776 BC as a means of preventing the continual cycle of warfare in ancient Greece.

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<sup>7</sup> Mongolian Empire after the death of Genghis Khan, The Egyptian empire due to societal splintering, and as mentioned prior The Roman empire.

<sup>8</sup> Discovered by Jacob Roggeveen in 1722, roughly 164km<sup>2</sup> and 2000km from the nearest inhabited island, void of any trees.

<sup>9</sup> Giant megalithic platforms (ahu) and multi-ton statues, known as Moai were culturally significant to the Polynesian peoples.



If we are to establish a colony on Mars, it will be isolated with restricted resources and likely populated with many individuals from different nationalities. Historically we can assume that there will be interpersonal disputes, with the threat of anarchy always looming. If it is to be a sustainable civilisation, we need to enforce a means of unity amongst the people. If we observe Easter Island, the positive reinforcement in building Moai's drove the people to continue to survive and thrive in the face of adversity. They were able to feel pride and a sense of accomplishment, even when resources were limited, and life may have been challenging. As a Martian colony may mimic this type of restricted environment, it is important to take inspiration from those on Rapa Nui. The colony will need to feel a sense of purpose and drive to help continue its existence on Mars without civil collapse. If this can be coupled with a means of non-violent competition it will serve as an outlet for any disagreement that will occur, hopefully helping to keep societal collapse at bay.



## 'No man is an island'.

The final crux in identifying lessons from past civilisations considers colonisation in its entirety. Whilst many empires ebb and flow with the sands of time, there is one pivotal element to their success: their connectivity with the established civilised world. The famous poem 'No man is an island' by John Donne(16) clearly illustrates this point; that humans are only the success of their society, we need each other to survive.

A clear example of this is witnessed with the rise and fall of the Greenland Vikings. As the first Europeans to encounter the Americas, they were renowned as tenacious raiders and traders(17). In 985 AD, Erik the Red established the first European settlement in Greenland: Eysribygd<sup>10</sup>. According to legend, he named the island 'Greenland' in the belief it would be more enticing to prospective settlers, and he was right. With 5000 inhabitants during the height of its success, it prevailed as a wealthy colony for roughly 500 years(18). Life in Greenland would have been challenging, with temperatures barely exceeding 10C even in the height of summer, and the sun barely rising in winter. Regardless of this, the Vikings thrived and became extremely wealthy, largely due to the trade of walrus tusks, which provided highly sought-after ivory to Europe. Many medieval artefacts<sup>11</sup> have been carved by Walrus tusk, supplied by the Greenland Vikings(19,20). For all their ingenuity and adaptability however, they were still heavily reliant on Europe for iron and other essential materials. This trade route was the lifeline of Greenland, which meant that if Europe suffered, Greenland suffered. This unbreakable bond is easily applicable to the colonisation of Mars. Mars is void of any natural resources we can use in the modern-day (that we know of). Without fertile soil or an atmosphere, it will require vast amounts of resources to build and maintain it. This binds its fate to the fate of the Earths.

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<sup>10</sup> Eysribygd in Icelandic means 'Eastern Settlement'

<sup>11</sup> Most famous Luxury items including the Lewis Chessmen, made from Walrus Ivory.



The disappearance of the Greenland Vikings<sup>12</sup> coincides with the first outbreak of the devastating epidemic that wiped out nearly a third of the population<sup>13</sup> of Europe: The Bubonic Plague(21). The Plague hit Norway particularly hard, with some estimates suggesting over 50% of the population was wiped out, decimating many industries, including trade and shipping(22). This prevented the Greenland Vikings from receiving their vital shipments from mainland Europe. Coupled with climatic events, the loss of trade with Europe is the most likely downfall of the Greenland Viking's civilisation and by the end of the 14<sup>th</sup> Century, there were no longer Vikings in Greenland(23). If similar situations as this were to occur during the establishment of a Martian Colony, it would have detrimental impacts. Without a continued supply of spare parts, raw resources, and food a Martian Colony would be unable to survive. We do not have access to technology that is not reliant on Earth for construction, which means if we are to colonise Mars before 2050, the colony will still be heavily reliant on Earth.

The importance of this lesson cannot be stressed enough. The Vikings were successful and wealthy in their new land and adapted to the harsh conditions. But this was only possible if they maintained a trade route with Europe. The colonisation of Mars is no different. No matter how valuable our economy deems any materials found on Mars, or how priceless the scientific knowledge gained from it is, a colony on Mars will not survive if it can no longer trade with Earth. There is no denying it may become sustainable in the future, for we do not know what raw materials lie beneath the surface. However, with modern technology as it stands, colonisation within this century will still be heavily reliant on Earth. The fate of a Martian colony is intrinsically bound to the fate of our planet for survival.

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<sup>12</sup> Estimated to be around the 1300s.

<sup>13</sup> It is estimated that over 20 million people died.



## Discussion

The aforementioned civilisations offer a caveat when looking ahead in founding a civilisation on Mars. If we are to believe Elon Musk in his endeavour to establish a large colony by 2050, it is imperative that we consider what can be learnt from the past to prevent a future collapse. In this essay I have suggested three outlines for consideration, but these are by no means exhaustive and only provide an entry into the analysis of successful establishments.

The first is that the resources and energy required to establish a colony on Mars may alter the political powers on Earth, potentially centring them closer to the Martian colony. With the likelihood of collaboration required to establish on Mars, this may go further to undermine alliances and relationships on Earth, creating opportunities for political instability. In the same way we saw the Roman-British General's vying for the ultimate power of Rome, so might a new colony strive to usurp the global powers of Earth.

Furthermore, after generations of 'Martians' have lived on Mars, they may be less inclined to follow the rules and regulations set upon them by Earthly powers. Just like the colonised nations that have come before them, there may be a demand for independence to allow a Martian colony to forge its own way.

The second consideration is that a successful Martian colony will need avenues of cooperation and unity to prevent civil unrest. Limited resources and restricted environments are likely to create a mentally challenging environment within the colony, creating a realistic danger of societal collapse. Easter Island, in the face of barren environments, had success in the community construction of culturally significant Moai. This united effort in creating statues helped unify the island nation and prevent civil unrest when resources were scarce. The construction of Moai went further to offer a form of non-violent competition which allowed releases of tensions felt between the peoples. Humanity will need to incorporate this style of unity with competitive expression into the heart of the Martian colony to ensure continued stability.





Finally, the most important lesson to note; the success of a Martian colony can only be obtained through the continued support and success of Earth. If trade were ever to collapse between the planets, the extended colonies would suffer. Just as the Vikings were only able to thrive in the face of climatic difficulties, due to economic trade with Europe - Mars too will be bound to the home planet. Currently, Earth is the only wealth of resources we have, and if it collapses humanity does too. This final point truly brings into question the reasoning behind colonising Mars.

Earth is facing destruction of monumental proportions; climate change, deforestation, food insecurity and pandemics are all very real threats when considering the future of Humanity. If we continue our plundering of the planet as we do now, humanity will not see the end of this century. This makes the concept of colonising Mars futile if planet Earth is unable to support it. There is no Planet B, and whilst pushing the boundaries of humanity's reality may seem attractive now, without sustaining a colony on planet Earth, there can be no human civilisation. Humanity's next steps to ensure a successful colony on Mars should instead turn inwards towards Earth. If we can sustain our lifestyles on this planet we call home, there is a great opportunity in projecting humanity into becoming a multi-planet species. We must address the issues at hand in ensuring humanity's survival or else we run the risk of collapse and fall like our ancestors before us.



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