Rhetorical Analysis of “*Radiation makes Mars mission unlikely”*

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 The National Aeronautics and Space Administration (NASA) is the United States’ government agency responsible for the nation’s civilian space program, and aeronautics and aerospace research. Recently, NASA had intended to send astronauts to Mars by the year 2030; however, the agency was given a “no-go,” at least for now. *Radiation makes Mars mission unlikely* by Todd Halvorson, an Independent Aerospace Journalist and Senior Aerospace Reporter for USA Today, is a persuasive based article expressing his thoughts and dangers of sending astronauts to Mars. *Why we can’t go to Mars?* is a video by the same author, Todd Halvorson, which shows a similar, but shorter explanation of the article’s issue. He incorporates the rhetorical appeals and strategies of ethos, pathos, and logos to argue about the great dangers for exploring Mars in text and with visual aids.

 Halvorson uses a substantial amount of ethos or ethical appeal to enforce his reasoning in the article. The subject of sending astronauts to Mars is being explored by the best and most distinguished scholars, scientists, engineers, health professionals, and ethicists in the nation. In addition to Halvorson, other speakers, including Robert Behnken, the Chief Astronaut of NASA, and Kristin Shrader-Frechette, a professor from the University of Notre Dame, present their arguments on the ethical issues of the scientific and technological developments. The minute the concerns of safety arose, the prospect brought up questions having to do with safety and health regulations as well as whether or not the astronauts were ready for this expedition. The National Academy’s Institute of Medicine has also taken action on this issue and a report is due in April 2014. The greatest issue is the radiation because the exposure to radiation can cause cancer to the astronauts. Many experts are voicing their opinions on the issue at hand. Robert Behnken compares this situation to a wartime situation, where the nation always has a solution; “We need that level of reasoning from the Astronaut Office perspective” (Behnken, 2013). This shows the Behnken values the opinion of the public and NASA to undergo the mission in the future. All this information serves to give Halvorson the amount of credibility required when it comes to space exploration.

 Along with the ethos, Halvorson also incorporates pathos in his article. However, the usage is acute and obscure to those who do not have background information on space expedition and women rights. The use of pathos in this article is exemplified when Halvorson discusses the discrimination against women astronauts. This is due to the exposure to radiation which can cause fatal cancer, which is another form of pathos in the article. “So in particular, in my case, if I had a Y chromosome, I would be qualified. But because I have two Xs, I’m not” (Astronaut Peggy Whitson, 2013). This particular quote shows some emotion and humor towards the female astronauts who are not allowed on this mission as to men. The reason that the females are not allowed to go on the mission is because of health regulations; due to lower threshold for space radiation because of the other risks of cancer such as breast cancer. Figurative language was also used in conjunction to pathos in order to interpret the reasons why women only qualify for half of potential missions; “the pool dried up” (Halvorson, 2013) which meant that the “pool” or group of astronauts were diminished when radiation exposure limits were considered. Finally another example for pathos in this article is the concern that agency and the public have towards astronaut’s life risk if the mission were to continue.

 In addition to the ethos and pathos, the article contains the usage of logos. The logical appeal that Halvorson uses in this article to break down his argument is very powerful because of the different support. As mentioned before, Halvorson works for USA Today as a Senior Aerospace Reporter for the past twenty-five plus years. This alone contributes to most of the legitimacy to support the argument because of the many years of knowledge in this area of expertise. As also mentioned in the ethos appeal, he quotes various experts such as NASA’s Chief Astronaut Robert Behnken and Kristin Shrader-Frechette from the University of Notre Dame. All of the experts in their respective fields have their own opinions on what NASA should do, however, NASA follows the standards established by the National Council of Radiation Protection and Measurement, which used the Hiroshima atomic bombing to set the standards on how much radiation a person can absorb. The article also explains the specific types of radiations and the percentage of intake of each that a male or female can withstand. There are many different statistics, but what portrays the difference between the radiations here on Earth and on Mars are images of the atmosphere and surface of Mars taken by NASA.

 Visuals are also incorporated in the usage of rhetorical elements. The article has three different types of visuals that have to do with the proposed topic of exploring Mars in the near future: two images and a video. The visuals assist the reader in interpreting the ethos or ethical appeal in this article. The author of the article, Todd Halvorson, is also the speaker in the video in which he discusses the same issues presented in the article. The images, however, come from the United States agency NASA; basically the only ones in the nation who can provide images of the universe. With that being said, the credibility of the pictures is of great value because they come from the only source in the nations. One of the images shows the atmosphere of Mars which helps differentiate from the Earth’s atmosphere and why radiation is a big issue. The second image is taken from the NASA Mars rover ‘Curiosity’s’ Mast Camera in a site called “Rocknest” during the October and November of last year. Once again, the image comes from an only source, but in this case of the entire world. Curiosity was the only successful mission to Mars! Even though the images show only the surface and the atmosphere of Mars, the reader can interpret why the issues of sending people to Mars exist.

 The images and video pertain to the pathos appeal in which, as mentioned, show the major difference between our planet and Mars. There is a sense of emotional response that the public sees from Halvorson in the video. Halvorson shows neglect and looks uninspired toward the goal being achieved. Halvorson is explaining the issues presented in the article, however, this time we can hear his tone as he presents his research. The tone of his voice portrays the great concern towards the astronauts’ lives. The images evoke sadness to those who want to complete the goal of going to Mars because they portray the difficulties of walking or even landing on Mars.

 Finally the rhetorical appeal of logos behind the visual aids includes statistics of the expectations of going to Mars. The images address the topic thoroughly and the video shows the Mars rover Curiosity on the surface of Mars which has to do with one of the images in the article, which helps to show that the information is coming from the same reliable source because the speaker of the video is the author of the article, Todd Halvorson. Halvorson quotes the Chief Astronaut of NASA in the video as he did in the article. Finally there are dates and times in which the article was posted and when the pictures were taken to support the argument and to show how recent the statistics are. The dates are posted on captions below the images, for example, one of the images explains to the reader what is being seen in the image.

 The usage article and the visual aids work very effectively together by helping the reader understand the topic. NASA may or may not be ready to send their astronauts to Mars; however, they will accomplish this because the mission is the “Holy Grail of U.S. human spaceflight” (Todd Halvorson, 2013). The images in the article are placed in a chronological matter that helps the reader understand the reasons for the “no-go.” The greatest effect was the video because it had the author of the article explaining his story to the public.

 Todd Halvorson does a great job writing this article. It has enough information and support from very credible sources, including his work, and he uses rhetorical appeals and strategies of ethos, pathos, and logos to argue about the great dangers for exploring Mars with our current technology. Not only does he mention the issue or argument NASA is facing, but as well as the opinions of various intellectuals in the field. The nation is aware that they don’t have the technology needed to undergo this expedition, but they will not give up. They know that it will require lots of work and help from many to succeed; however, they are more concerned of the lives of the astronauts who will achieve this dream. Halvorson recognized the issues and uses ethos, logos, and pathos to support the argument.

References

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