

The Existence of Extraterrestrial Life

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CHAPTER 1 : INTRODUCTION

Have you ever thought about whether we are alone? This is where the theories and thoughts of the existence of extraterrestrial life that are living far away beyond our universe to our galaxies have come up from a lot of researchers and scientists. The studies have concluded performing research and testing theories towards this question, but also the results of how others would react to the discoveries of extraterrestrial life. But these researchers not only go towards our studies but also use technology and also the help of other nations trying to discover whether this mystery of extraterrestrial life exists or not. Discovering the existence of extraterrestrial life can explain how humans would react to it positively or negatively. But it has shown that humans would have a more positive reaction to the discovery of extraterrestrial life than a negative reaction. Which shows that some humans would be ready for this encounter. But what about religious people? Since when it comes to living creatures that were created or introduced scientifically was the standard of God's creation or that god created everything? From heaven to earth.

Whether positive or negative humans will either conclude accepting extraterrestrial life existing or choose not to accept it. Humans tend to have a fight-or-flight situation, and when it comes to an introduction to a foreign creature, humans tend to find it as a threat and find a way to eliminate it before eliminating them. But discovering extraterrestrial life is believed to be positive because that way we'll know that we are not alone and study the discovery of extraterrestrial life. But when it comes to trying to discover them we use the imagination of making movies and just like in the movie *Andromeda Strain*, the main purpose of shows us a thrilling story about a team of scientists who must work quickly to prevent a deadly extraterrestrial virus from spreading and

wiping out humanity. This will show how we know that we're not alone and explore the nature of these new creatures that we have discovered. The research behind discovering extraterrestrial life will give us many outcomes because knowing what is out there is not only an advantage for us but also will help us understand not only our planet but also our universe.

CHAPTER 2 : LITERATURE REVIEW

The search for extraterrestrial life is something that not many scientific studies are focused on, yet creative stories about ETs and our reactions to them are very common in books, TV, movies, and other media. Some scientists and astronomers took up the challenge to expand their knowledge and theories by studying the planets around us both within and beyond our solar system. One study claimed that they had discovered a microscopic extraterrestrial life form on an asteroid from Mars called the ALH 84001. This announcement caused widespread excitement when President Bill Clinton announced it in a special press conference. Others have used their imagination and knowledge of human history and psychology to form their opinion on what's out there and how we would react. Based on increasing scientific knowledge and discoveries in the sea, dry deserts, and high-salinity pools, many more mysteries of life in extreme environments have been found. More recently, humankind has decided to consider a range of broader and more realistic theories on the nature of extraterrestrial life, even though it might already live among us or that Earth life itself was brought here from elsewhere.

There may be some dangers that come from seeking out extraterrestrial life that we have to be careful of and ready for. The purpose of this research is to demonstrate how there is a possibility of extraterrestrial life out there, whether big or small and that our reaction to it has the potential to be very positive or negative. There are opposite views on whether a search for ETs should be conducted because depending on how the human race would react to such news, would it create chaos or will everyone accept the understanding that we are not alone? Thus, our efforts to discover the existence of extraterrestrial life could be an advantage or disadvantage. On one hand, it could be considered good to know about the existence of

extraterrestrial life if only to know what we would be up against if it were hostile. On the other hand, the existence of ETs would be profoundly challenging for the human psyche, religions, and governments. This project considers scientific approaches, psychological studies, and creative media that imagine what would happen if we encountered some form of ET.

What does it mean to be defined as extraterrestrial? Scientists have used that word to describe a creature that is not from our world. The science used to define 'life' depends on where they can find life. In the article “Comet Provides New Clues to Origins of Earth’s Oceans” by Cassandra Bell, she goes on to explain how Earth holds many basic elemental components, and what some of these elements can be of habitation to comets. Comets can hold many elements since they are like snowballs but made of rock, dust, ice, and other frozen chemicals that evaporate. That happens when they come in close range with the sun. These comets may hold the same elements that are available on Earth, mostly when the main basic elements are soil and water. The world's largest airborne observation or SOFIA (Stratospheric Observatory for Infrared Astronomy), in December 2018 observed the Wirtanen comet that has made its closest approach to Earth. But their data have obtained a comet that carried “ocean-like” water. But what do they mean by “ocean-like”, as stated in the article, “But using special instruments, scientists can detect two types: regular water, H₂O, and heavy water, HDO, which has an extra neutrally-charged particle called a neutron inside one of the hydrogen atoms. Scientists compare the amount of heavy to regular water in comets. If comets have the same ratio of these water types as Earth’s oceans, it indicates that the water in both may share a common origin.”

This shows how there is the possibility of “Earth-like” elements floating out in space or on another planet with the same features as Earth. Which can mean that life could be living out in

the universe. Continuing into the science how of astrobiology, could help in discovering all the different ways that life could be constituted and where to look. As stated in the article “Searching for extraterrestrial intelligence signals in astronomical spectra, including existing data)” by Borra, Ermanno F., explains the importance of analyzing standard astronomical spectra can carry out searching for extraterrestrial life. There is confirmation by published experiments that exhibited a once-in-on-while signal in the spectra that can effortlessly be generated by forwarding light pulses that are distinct by non-stop time intervals. To summarize he states, “For an ETI, the technique would also have the advantage that the signals could be detected both in spectra and searches for intensity pulses like those currently carried out on Earth.”

To have technology on our side to help discover any form of signals that can assist in locating extraterrestrial life shows how there is never a specific place to look for life. But there’s still the likelihood of our technology picking up on their signals, and finding life. But if that was the case, the next paragraph goes into the psych science of how people would react to the announcement of ET life. That theory connect with the peer article “ Fear, pandemonium, equanimity, and delight: human responses to extra-terrestrial life” by: Albert A. Harrison, who gives a good explanation of all emotion that may arise worldwide from the human race of this announcement, was that it will all be overwhelming and confused. With the option of accepting this form of announcement. He has claimed, “Over the years representatives of many disciplines have answered the Committee’s call for studies to prepare humanity, intellectually and emotionally, for the great discovery.” The human population as a whole needs a guide on how we should respond if this was to happen. There is the side of those who would rather let the government deal with it, and there’s the side that will take matters into their own hands and deal

with these unwelcoming visitors. Extraterrestrial life is no practical life because the thing scientists and researchers are looking for is some form of life. The main part is what type of material they would be composed of. The purpose of this research is to demonstrate how there is a possibility of extraterrestrial life out there whether big or small and that we have the human technology to get to the bottom of this research. There are opposite views on whether this study should be conducted because of how the human race would react to such news. Would it create chaos or will everyone have the understanding that we are not alone? In conclusion, trying to discover whether the existence of extraterrestrial life could be an advantage not only to our knowledge but also to what we are up against if anything is found. Whether friend or foe.

Organizing these three questions; How would the human race react to the discovery of extraterrestrial life? How are we trying to discover ETs today? Can human technology identify some life forms on other planets? What are the proofs needed? Wow signal, other possibilities.

How would the human population react to definitive news of an ET? Is trying to discover extraterrestrial life an advantage or disadvantage?

What is an Extraterrestrial Life:

Extraterrestrial life is no practical life because the thing scientists and researchers are looking for is some form of life. The main part is what type of material would they be conducted of. As stated in the article “**Extraterrestrial life constructions materials.**” by: M.Z. Naser, “ Our understanding of such indigenous resources, from materials science, construction, and structural engineering points of view, is lacking and continues to hinder further development of Earth-independent habitats (CITE).”

There have been planets that they have had their discoveries or theories on to find out whether extraterrestrial life lives on them, and if so what type of material would they be composed of that are on their planet. To complete their exploration mission both the National Aeronautics and Space Administration (NASA), and the European Space Agency (ESA) have joined hands to make a breakthrough on what they will find out. Analysis has identified the processing of this procedure as a suitable product of non-terrestrial construction materials in the alien environment of space and highlights this trend to make an appearance in the future, and will be directed to stimulate further research in this area. The discovery of the first extraterrestrial life forms was on ALH 84001 from an asteroid from Mars. This founding of the smallest life from a rock from space is proof that there might be some form of life out there.

In conclusion how they end this article with;

“We conclude thus: The McKay et al. (1996) paper was a seminal benchmark that stimulated the opening of the field of astrobiology and the search for life on Mars.”

This realization of life on Mars’s rocks proves that there is no specific structure or material that extraterrestrial life is conducted with because these extraterrestrial lives will be constructed with what they use on their planets to survive.

The Industries Behind These Studies:

NASA, Linguistic and Inquiry and Word Counter (LIWC), and other places have obtained research behind what it means if there is a possibility that extraterrestrial life has value and the means to exist. Researchers and scientists have concluded that they also need the help of their technology. There are also studies of how AI was able to detect extraterrestrial communication outside our planet. But all put aside that not many of their technologies were successful in

discovering this communication with extraterrestrial life living beyond. Using their Square Kilometre Array or SKA technology to operate in frequency ranges is used to aid in this experiment, and this type of device is often used by military radar or other communications. Penny (2004), states how it's believable that the natural place to look for the frequencies of radio of these signals is part of a majority of past, present, and future exploration for extraterrestrial intelligence that is in the electromagnetic radiation range of the spectrum. There has been evidence that astronomer Duncan Lorimer and his research students have stumbled across the evidence of an extraordinary amount of radio energy. This radiant energy has swept through the solar system and washed over the southern hemisphere of the earth with a powerful burst within less than 5 ms in duration. The research behind this research showed how it lasted 10 years.

“ The most ambitious search so far for extraterrestrial beacons was the Phoenix Project, which ran for nearly 10 years (from 1995 to 2004), and observed 800 stars (out to 240 light years from Earth) with Arecibo, Parkes and the Green Bank radio telescopes (over a frequency range of 1.2 to 3 GHz).”

That is why scientists believe that while using these devices they will be able to communicate with the intelligence of extraterrestrial life. In which the highlight irony that was recently discovered by Loeb & Zaldarriaga (2007) noted that there is an approach of increased sensitivity of new radio arrays like Low-Frequency Analyzer and Recorder(LOFAR) could monitor the radio frequency interference (RFI) produced by a distant extraterrestrial civilization. The capability of AI or new computer applications has deep learning models with expectations of intelligence to isolate similar inconsistencies in huge data of information that have been obtained across space science disciplines. These industries have taken the technologies to the next level and also tried to test their limits. Selecting the process of the model, SKA came to

study the effect of constraints on connectivity, absolute trends, or more substance in the era, with two sets of calculations required to compare relative traits. There are results on a base hypothesis of the symbol correlation. (described in Bozhilov and Forgan 2010; Forgan & Rice 2010).

Human Emotions Against Change:

Durant (1953) and Harrison (2011) stated at the beginning of the article “ How will we react to the discovery of alien life? In 1953, the Robenson panel warned of the danger of massive Steria, and a recent national poll found that 25% of American respondents anticipated people with panic.” Having just a thought that extraterrestrial life might exist in the universe will not only cause panic but also chaos amongst everyone and our countries. There have also been studies from the Linguistic Inquiry and Word Count (LIWC) online sample that focuses on how humans would react to the past discoveries of extraterrestrial microbial life which has claimed that extraterrestrial life has been found on the meteorite of Martian origin. But there’s no better way to spread the news than from the media. There have been several used previous studies with the assessed cultural product and effects on the states with an attitude at a cultural level, and also values. (Greenfield, 2013; Grossmann and Varnum, 2015; Iliev et al., 2016; Varnum and Grossmann, 2016). Following the pilot study of how “Media Coverage of Discovery of Extraterrestrial Microbial Life.” In the studies, there’s an assessment of the initial path of General responses to the announcement of whether there will be the discovery of extraterrestrial life, or that there’s a suggestion of this possibility of discoveries. An important claim in the article was;

“Across these studies, we found that reactions were significantly more positive than negative, and more reward vs. risk-oriented. A mini-meta-analysis revealed large overall effect sizes (positive vs. negative affect language: $g = 0.98$; reward vs. risk language: $g = 0.81$).”

While conducting this study the LIWC used their software (Pennebaker et al., 2015) to research to determine the percentage in which each article with a total of words has reflected on whether there was a negative or positive effect, rewards, or a risk. Learning how scientists are ready for this “encounter” and so they performed this pilot researches, and there is evidence of all the methods and results with graphs that are shown and described. Gives a whole perspective on this study altogether. In conclusion, the general discussion is that there is the possibility of a positive response to the discovery of extraterrestrial microbes and that the news would cause comfort that there is a fact we are not alone in the universe. This would be a new worldwide eye-opener to everyone, also involving the battle between religion and scientific facts behind whether there is the existence of these extraterrestrial life forms. Since there is no right or wrong on whether there will be a positive or negative impact because not everyone is open to new ideas and discoveries.

CHAPTER 3: METHODS

Introduction: Research Design

The way my research questions were approached was that I had to cut down on what exactly I wanted to figure out and also on how questions would get me answers from the articles or resources that I had researched. They were both qualitative and quantitative because the majority of the resources that I obtained have gathered data on people mostly on how much of the population would react, and on the calculation of how far our forms of communication can reach out in the universe. My topic is to figure out the public's response to if extraterrestrial life did exist, and how it would affect everyone whether it's positive or negative. But also how human technology can be of help in discovering these extraordinary creatures. Existing or non-existence. But I focused on one main question and two sub-questions overall to break down my research. Questions are; How would the human race react to the discovery of extraterrestrial life? How are we trying to discover ETs today? Can human technology identify some life forms on other planets? What are the proofs needed? Wow signal, other possibilities. How would the human population react to definitive news of an ET? Is trying to discover extraterrestrial life an advantage or disadvantage?

Selection Criteria/Search Terms

The peer-reviewed article, "Are We Alone? Philosophical Implications of the Discovery of Extraterrestrial Life" by: Mary Gerhart and Allan Melville Russell, summarizes this article from Paul Davies (1995) about how there are three possible positions on the matter of life existing in our universe. There are also his concerns, as stated,

"the philosophical assumptions that underlie belief in, and the search for, life beyond the

Earth, and the impact that the discovery of alien life forms would imply for our science, religion, and beliefs about mankind [sic]" (xi-xii).”

They focus on Davis's point of view and theory in ways that he believes show there are many possibilities of the philosophies of how there are both sides of the "multiple incarnations" issue, from his book. But it was strange since there was a lack of philosophical argument. Davies believes that extraterrestrial life is part of an extremely large group that involves everything from a simple fungus to a human being. Furthermore, Davies claims, “the discovery of any form of life would imply the existence of all forms.” Associating with another peer-review article, “ Fear, pandemonium, equanimity, and delight: human responses to extra-terrestrial life” by: Albert A. Harrison, he explains how fear, pandemonium, equanimity, and delight are the emotion that will be all mixed up together if there were any form of extraterrestrial life, and that we shouldn’t let that idea of their existence go over our heads. Even though there are people out there who are religious and have their belief systems, denying scientific findings or recasting them as theories don't change the fact that the human race has not exceeded its limits of the unbelievable.

The methodological approach that was made for my research was mostly online through the Purchase College library search, but also from my research on Google. The qualitative data that was performed was on how many percent of the population would react positively or negatively to the encounter of meeting extraterrestrial life. The way I was able to obtain this information was by searching “Extraterrestrial life” in the Purchase College library search, and online and it has given all the articles that were based on “Extraterrestrial life”. The many articles that popped up were articles about discoveries, expectations, the technology used, etc.

But I had to narrow down what I was looking for because there was a wide variety of what I was looking for or random articles that showed up. I analyzed this information by reading over the majority of the articles that I found to be useful just by reading the titles, but some were deceiving and didn't get to the point. So I had to take out those types of articles that weren't much help. But using the Purchase College library search to search for peer review articles was helpful and useful for my research. The limitations and obstacles that I had to go through were that some of the articles were useful, but you had to pay for them. No one should pay to read an article. The way I dealt with not finding the articles that I needed was by trying to find alternative articles and sources. But I had to make sure I the writer understood it, but mostly my readers. I tried to make sure that all my informative answers were handy and supportive of my research questions.

Data Collection and Analysis Methods

My literature review was all my gathered information from both primary and secondary that was which is useful and will be easily put together. For my literature review, I made sure that I narrowed down my research so that only the main and important articles were written down for a better understanding. The participants that were used for this research were a wide variety of people but no one in particular. Studies have shown that there would be a positive reaction to whether an encounter was ever to happen. No physical run-ins for participants happened, and no tools or materials were used to get these data acquired. I used this method because the internet provided many resources, whether useful or not.

The experiment behind my methods for this chapter is my interview. That includes a set of 5 questions for 4 individuals to answer about the existence of extraterrestrial life forms existing and their impact on everyone. But this interview will focus on these 4 individuals' opinions. While focusing on these 5 specific questions I wanted to find a way to get my interviewees thinking and get in-depth of their answer. These questions are broken down from being simple then really get in-depth on how others religiously or spiritually would be affected. Mostly have them answer the questions as though extraterrestrial life was found and making its way to Earth. Before I was ready to conduct my interview I made sure my interviewees signed an Informed Consent Form so that they are well notified about how the whole thing will process. They agreed to use a false name by providing me with any of what they chose. The names given were **Annita, Kai, Suzie, and Kim**. I made sure they were in a comfortable place to start, and before we started I made sure to ask them if they had any concerns. While asking them the questions I observed how each of my interviewees was reacting to the questions being asked, and them answering it. Being able to see each of their opinions and reactions, had me thinking about what my reaction would be if I had to think about my answer to these questions. This interview was assessed qualitatively. The questions asked helped to get the 4 individuals' answers, and by using their answers to get data. Analyzing their answers by approaching their explanation to collect each interviewee's response then put all of their answers into a group. That way I will be able to see the difference or similarities between their views.

Study quality and risk of bias

The study is high quality because of peer-reviewed sources, and any bias was managed, because we are trying to understand what it means for something to be extraterrestrial or how the

human race would react. There is a 50/50 chance of opinions being positive or negative. The study quality is how there has been the use of various tools and techniques to collect data, such as telescopes, spacecraft, and radios, and inspect any form of discoveries using established scientific methods. This also includes using astronomy, astrophysics, biology, and geology, and working mutually to increase their chances to detect extraterrestrial life. As for the risk of any bias, there is a form of a structured difference from the truth or accuracy of the results. In the search for extraterrestrial life, potential sources of bias could be influenced by social media and cultural biases, such as the belief that life can only exist in certain conditions or the expectation that extraterrestrial life will resemble life on Earth.

Conclusion:

In conclusion, I start with the Research Design, and the deep research in the Selection Criteria/Search Terms, then describe a thorough explanation of my Data Collection and Analysis Methods and break down how my study quality and risk of bias all clarify the means of my research questions. I want to focus on the breakdowns of all the methods that were obtained so that my readers will be able to get an understanding of how I got my results. This chapter holds the role of being the legs of this paper, and without it, this paper wouldn't be able to lead the way to the outcomes of my findings. These methods were all applied to the RQs. The next chapter gives the results.

CHAPTER 4: FINDINGS

Now bringing us to the part of the chapter that is the backbone, and what will give these questions the structure that it needs to form this paper. Throughout my paper, I have mentioned these questions and explained the concepts of my findings through many resources, and in these resources have cited important pieces of information that I believed to stand out and give the best explanation of what I was trying to describe in each specific paragraph. I was able to do some more research by looking at movies and reading sci-fi articles, looking at psych papers, and the media. I was also able to read one novel that I believe was worth mentioning, named “War of the Worlds”, by: H.G. Wells, and there’s also a movie with the same name which I thought will be very helpful to finding either similar or different information from both the movie and book. Now to get started on what was discovered from my research, to note down the three important questions for the readers once again they are; How would the human race react to the discovery of extraterrestrial life? How are we trying to discover ETs today? Can human technology identify some life forms on other planets? What are the proofs needed? Wow signal, other possibilities. How would the human population react to definitive news of an ET? Is trying to discover extraterrestrial life an advantage or disadvantage?

Let’s begin with the main question or what I would call the forehead kiss of my paper. That is, **How would the human race react to the discovery of extraterrestrial life?** The reason why I say this main question is the chef kiss of my paper is that it focuses on not only one person's POV but the whole world! That’s about **8.0 billion** people who will be hit with such a discovery. Whether that discovery of extraterrestrial life is small or big, only as long as it exists and whatever is uncovered is what everyone will react to. Either good or bad, that individual

extraterrestrial life form or forms will have all eyes of the human race on it. This main question is also the umbrella covering both two research questions. While focusing on this question many resources were acquired and broken down to distinguish the answers found in the most simple well-explained manner for the reader. While engaging on how humans will react to this form of news. Transition us to RQ1, “How would the human population react to definitive news of an ET? Is trying to discover extraterrestrial life an advantage or disadvantage? That chapter will aim at telescopes, radio/listening, or microbe-oriented discoveries. For human technology trying to identify some type of life forms on other planets what confirmation would we need for us to believe that it’s true, and why was the Mars rock rejected?

Now let's tweak behind what technologies were used to try and reach beyond our galaxies just to get a bit of contact or visual presentation of extraterrestrial life that exists out there. There is the thought of radio signals out there we can listen to or any form of communication that just doesn’t fit being something of humankind. As mentioned in the article, “The Breakthrough Listen Search for Intelligent Life: A 3.95-8.00 GHz Search for Radio Technosignatures in the Restricted Earth Transit Zone” by Sheikh Sofia Z, Siemion Andrew, Enriquez J Emilio, Price Danny C, Isaacson Howard, Lebofsky Matt, Gajjar Vishal, Kalas Paul. It has been said that an electromagnetic frequency range of 3.95-8.00 GHz has the potential for extraterrestrial life to discover our Solar System and that target was nearby at 7-143 pc. Robert C. Byrd Green Bank Telescope was used to observe standard BL data recordings. It records diversified travel, tracks, and journeys no matter how long or how far it takes. The article continued by stating, “We searched these data for artificial narrowband (\sim Hz) signals with Doppler drift rates of $\pm 20\text{Hz s}^{-1}$. We found one set of potential candidate signals on the target HIP 109656 which was

then found to be consistent with known properties of anthropogenic radio frequency interference. We find no evidence for radio technosignatures from extraterrestrial intelligence in our observations”

This is associated with the article, “Giant radio telescope will boost search for extraterrestrial life”, by: Nadis Steve on how a new radio telescope called the Square Kilometer Array (SKA), will be the largest and most sensitive radio telescope ever built, and will be able to detect radio signals from planets beyond our solar system. Scientists will be able to use the telescope to search for signs of extraterrestrial life and have the capability to study the universe more broadly. The article explores the potential implications of discovering extraterrestrial life, including ethical considerations. Nadis highlights the importance of the SKA in advancing our understanding of the universe and the possibility of extraterrestrial life.

Then there are also the studies of life components that can build up life, starting with amino acids, organic building blocks, carbon/silicon, oxygen, hydrogen, nitrogen, phosphorus, calcium, and sodium. Then explaining how they come together to create this life. But these compounds don't only create life alone, but what if there is another exponent that plays a role in this process? Lightning strikes! Can lighting play a part in creating building blocks for life on Earth? The question is how is it that that lighting can be the start of a new creation or something out of this world? Mentioned from the Royal Society of Chemistry: Chemistry World cites the article “Lighting may have created essential building blocks for life on Earth" by: Jamie Durrani, he explains how the earth is a mafic rock covered in carbonated weathering rind (a discolored, chemically altered, outer zone or layer of a discrete rock fragment formed by the processes of weathering), and when struck by the lighting of temperature over 3000k. That strike played a prime segment in creating the phosphorus compound of life on Earth early on, and all that started

small and accelerated as time went on. As cited in the introduction of the article stated by Durrani he mentioned, "New findings from researchers in the US and UK suggest another potential source of material needed for biological compounds such as DNA and adenosine triphosphate. Until now these reactive phosphorus compounds were mostly believed to have arrived on meteorites." Mentioned by: Nell Greenfieldboyce she states in her article "How A Building Block Of Life Got Created In A Flash " how it is believed that phosphorus is in addition to another key point to being a part of life being created. "All life on Earth requires phosphorus, from the tiniest virus to the largest organisms," she notes." Phosphates being an earthly mineral already existing on Earth already a basic cell, and with that coming in contact with a very strong jolt of electricity gives it the opportunity to be a part of creating some form of life and benign the backbone of the DNA.

In short, no matter what we do, researchers or scientists will find a way to create some form of technology to get in contact with and try to communicate with whatever is outside of this solar system that lives among us who reside on this big blue and green planet. Even if that meant the new form of extraterrestrial life could be spotted on earth just by the strike from a strong electric shock that came from the sky could help or generate this new life form. This shocking news can accumulate to either panic or a chance to try and understand all or any new forms of life that are not a mammal, plants, etc, and the main life form on Earth... humans. It seems as though the proof we hope to find lies within our signals, and the signals out from the Solar System. The rock from Mars being rejected was just the start of something extraordinary that we wouldn't know or be able to comprehend. Pinpointing to RQ2, " How would the human population react to definitive news of an ET? Is trying to discover extraterrestrial life an advantage or disadvantage?" This question will look into psych papers, the media/sci-fi for fears,

psychology, and possible good reactions. One example of the reaction of extraterrestrial life came upon us when the Mars rock was announced.

This part of the chapter is where it will focus on people's reactions and emotions whether it's welcoming or fear. Beginning with the article, "How Will We React to the Discovery of Extraterrestrial Life?", by Jung Yul Kwon, Hannah L. Bercovici, Katja Cunningham, and Michael E. W. Varnum a peer review. The article in the introduction covers all the possibilities of panic that are likely to take over the nation if that day were ever to come. But how will they conduct this experiment without having their data and results at hand? So the way they conducted this experience was by asking Americans to participate and the result showed that "American respondents who anticipated people would panic" (Harrison, 2011). There's been presentation of exposure to extraterrestrial life in fiction views for over a century has called to the attention of potential downsides of alien contact, from H. G. Wells' "War of the Worlds" (Wells, 1898/2003), to television series like "The X-Files" (Carter, 1993–2002), also films such as "The Day the Earth Stood Still" (Blaustein and Wise, 1951), "Independence Day" (Devlin and Emmerich, 1996), and "Edge of Tomorrow" (Hoffs et al., 2014). Movies play an important role in the human imagination of when or if these extraterrestrial lives were to give Earth a visit. Most movies do focus on the downside of their visit; invasion. While others focus on how we should try to understand them and try to learn from one another; peace/unity. Let's start with what the human population is concerned with the most and that is an invasion, and if that were to happen then fear will rise in us all.

Movies are the top main thing that brings out the imagination of if extraterrestrial life came to Earth. The movie "The Andromeda Strain" explores the dangers of technological advancements and it's the role of science in society. Also by portraying the potential consequences of government secrecy and the importance of transparency in times of crisis. But not all films are about their invasion and their downside, but some do focus on how we try to understand them and how we need to help each other. Movies that show the invasion of extraterrestrials are War of the Worlds, Independence Day, Annihilation, Aliens, and Signs. In these movies, extraterrestrials have come to Earth, but not in a peaceful manner. They came to invade us and transform our planet into their home. There have been many movies where Earth is a habitual place for organisms to survive and thrive. So these extraterrestrials see that it would be best to just take Earth rather than share it. The research I have obtained from watching these movies is that these extraterrestrials had a weakness in some of the resources on Earth. But like in the movie Annihilation, the extraterrestrial chooses to find a way to adapt to Earth by trying to merge with the organisms that already lived there, and the way they succeed was that they found a way to merge with the human body to survive. While in other movies, all it took was a small thing or resources to be deadly to them. Which prevented them from invading us. Most of the time it took us a plan of how we can push them and prevent further casualties. That is how these movies show the fear that we all wish to be just a nightmare that will never come to life. In the peer-review article, " Fear, pandemonium, equanimity, and Delight: human responses to extra-terrestrial life" by: Albert A. Harrison, his introduction started by stating, "For approximately 50 years, the physical and biological scientists, who led the search for extra-terrestrial life (ETL) and intelligence (ETL) have welcome contributions for behavioral and social scientists to better understand the psychological, social and cultural implications of the

search and its consequences.” The beginning of his article started by explaining how our feelings shouldn’t be limited but we should be ready for the consequences of them coming to Earth for a worldwide response. Switching to the other side of extraterrestrial life coming to Earth, that is us coming together to become one.

This is where our imagination of these films became to be of how we should not fear extraterrestrial life but understand them. Movie directors show a positive point of view of them visiting Earth. Their extraterrestrial movies are unique and independently show how we can learn from extraterrestrial life when they come to visit. That is where movies like; Arrival, Star Trek: First Contact / The Next Generation, and Contact, come in and show the understanding side of how we should learn from one another. We should see how humans and extraterrestrials are all one kind. One movie that stood out in this thought was Arrival. This movie focuses on how these highly intelligent extraterrestrial lives came to Earth to help us, and if we refused to help destroy the human race. They saw how we were afraid, but they knew that we could communicate with them and try to learn from one another, and one of our scientists came and took the time to communicate with them and learn their languages. That is because in the future we will need each other's help, and understanding their language was the first step in peace. It’s not all the time that extraterrestrial life comes to Earth, and we should look for war because there is little we know of what lies out beyond space. In the article, “Why aliens would (probably) come in peace”, by: Sarah Begley, claims the overdramatic measure That Hollywood does on movies and how it highlights one of humanity’s most widely held fears: that if and when we do encounter extraterrestrial beings, they will wreak all kinds of havoc, much as they do in the movies. She also mentions in her article the 5 Myths of what would happen if extraterrestrial life were to

come to Earth. She stated, “But while Hollywood suggests we should expect to battle their inhabitants, science tells a different story. Here, are five popular alien myths that Aliens debunk.” These 5 Myths are: **1)** ‘Aliens would eat us’, **2)** ‘Aliens would breed with us, **3)** ‘Aliens would look like us’, **4)** ‘Aliens would be “living” creatures, and **5)** ‘Aliens would steal our waters and metal. Honestly, while reading that article it did explain how Hollywood does exaggerate these movies and what extraterrestrial life should or will look like. We use movies as a protocol to get us prepared for a ‘what if’ situation, and it gives a peace of mind and entertainment that is pleasing to the eyes to watch. Lastly, to add the response to my interview questions from the 4 individuals who took their time to answer these 5 questions.

While asking each individual these questions I made sure to focus on their response and only to be astonished by each of their responses. That is why I also wanted to add the response of my interviews in my paper with their consent. Just so that my readers also have the opportunity to read the responses of these individuals’ own POV. The next part will be the interview questions and each individual response, and they will be color coded. But to protect my interviewee’s identity they have given me alias names they would prefer that be used.

1) What is the likelihood of extraterrestrial life existing in the universe?

Annita: I think it could be very possible that extraterrestrial life exists based on what we know for sure.

Kai: The likelihood of extraterrestrial life exists in the universe is over 90%.

Suzie: I think it’s pretty likely, because there could be other living things other than what’s around us.

Kim: is very likely, because the universe is very big. There are a lot of other planets and I’m pretty sure it’s not the only planet, out here.

2) What kind of life forms might we expect to find if they exist?

Annita: I mean, they can look any different kind of way. So I don't have a particular way of how they would look like other than what movies have shown us. So to be the only way possible that I'd known, they would look like.

Kai: The type of life form we might expect to find if they do exist are other human Extra-Terrestrial and aquatic life forms.

Suzie: Aliens maybe supernatural things, all things of the above.

Kim: other humans, aliens? Unknown animals.

3) How might the discovery of extraterrestrial life impact our understanding of the universe and our place in it?

Annita: It can impact us both ways negatively and positively. I mean, they can either share their weapons with us and their knowledge and everything else. That or they could either use it to just take over the world, but whichever one goes.

Kai: The impact it will have will be that we are not the only one in our universe and that we may not be in the higher food chain.

Suzie: It just shows us that there are more possibilities for discovering other things like different planets and things.

Kim: It changed the fact that we think we're the only ones out there who would know that there are other life forms.

4) What are some of the challenges you believe that scientists face in their search for extraterrestrial life?

Annita: I mean, unless they have the proper devices to search deep into space, they would be able to find extraterrestrial life. But unless they don't, then it would be quite hard and just trying to find the ranges of the messages they need to send deep into space. But other than that, it's hard.

Kai: The challenges I believe the scientists face are finding new technology and also finding new land.

Suzie: Like, how do you know they exist? What do you know? What do they look like? Those types of questions.

Kim: Is it hard to communicate with people or it's hard to communicate with another planet without knowing how to communicate with other planets?

5) How might the discovery of extraterrestrial life impact religion and spirituality?

Annita: It can very much impact religion. I'm not sure about spirituality but for religion. God never created anything other than this world and the Sun and Moon, which means basically in a religious, non-religious sense. There is no such thing as extraterrestrial life or other planets or the worldly things out there.

Kai: I believe the discovery of extraterrestrial life will impact religion greatly because over 90% of our population is religious. And for 1000s of years, we have believed that we are the only one in our solar system. In our Milky Way galaxy.

Suzie: Because then I feel like people's like theories on Supernatural will be proven, whether like, you know, there is something out there or there is

Kim: A lot of people will lose belief because they will now see that we're not the only life form out there.

I appreciated the participation of my interviewees who took their time to answer my questions just so that I could conduct my own research. Everyone has their own opinions, and these opinions are what help us understand where every one of us comes from without ideas. Even if the idea will come to the matter of 'agree to disagree'. Only one out of four thought that extraterrestrial life will be unknown. Since even the human race has no specific knowledge of what extraterrestrial life is supposed to look like. We use our imagination to create these unknown beings that we believe live out in the galaxies among us. The interviews helped answer my research questions because I wanted to get the point of view of others besides what I have read or what Hollywood movies have portrayed. Hollywood has had a big role in bringing extraterrestrial life to life even if it means creating assumptions about their actions whether they are friends or foes. Since not everyone would have the same response to extraterrestrial life landing on Earth. There is the chance for some people to accept it and see where it goes while others would feel queasy just thinking about what lived beyond us. Are they more intelligent than us? Are they superior to us? Worst of all, Are they here to annihilate us?

In closing, the decision on how the human population will react is very indecisive. These movies' main purpose is to entertain audiences with a suspenseful story while also exploring

thought-provoking themes related to science and society. Just like in H.G. Wells's book "The War of The Worlds", H.G. Wells's book purpose of the book is through the Martian invasion, Wells highlights the brutality of imperialism by portraying the Martians as invaders who are indifferent to the suffering of the humans they encounter. The novel follows an unnamed narrator, who witnesses the destruction caused by the Martian tripods as they ravage southern England. The story explores the themes of imperialism, colonialism, and the dangers of technological progress, as well as the resilience of humanity in the face of overwhelming odds. Furthermore, the novel can be interpreted as a warning about the dangers of relying too heavily on technology. Overall, "The War of the Worlds" was a groundbreaking work of science fiction that not only entertained readers but also explored important social and political issues of the time. But we are all on one page, and it's that we have to be ready at all costs for what will happen. In which we will have to fight for our protection or sit down and get to know one another and become allies. Many experiments try to get many participants' opinions on this theory of outside beings becoming a reality. But the way people vary in their opinions it is difficult on how that one decision will affect the whole population's decision. Since not everyone will be welcoming since we all do have fear embedded in us.

CHAPTER 5: CONCLUSIONS

Finally, we are reaching the last phase of this research paper, which will wrap up all that has been explored and where some questions have been answered. I started with the most simple place to begin explaining the topic of this whole paper. That is by describing what it means for something or someone to be extraterrestrial. Also, where can we find them, and if we were to find them how do this organism's components survive out there? While focusing on this question that may seem simple, it branches out to a deeper meaning and discovery of how we will determine this extraterrestrial life. If they do exist how will we be able to find them and communicate with them? So we use our technology and resources just so that we can see or hear any form of signals that are lingering out there in our solar systems. Scientists have done all they could just to see if they can be able to find these extraordinary beings, wherever they are. Some researchers have taken time to study how there is the possibility of extraterrestrial life. They use the work of others and connect the dots with their theories to create an article for the public to read. Whether out of interest or aid of understanding what is out there. There is also the thought of extraterrestrial life being formed from Earth or having 'same-like' elements from Earth. If that were the case, then who would the human race be able to wrap their heads about the news becoming true?

That's where the main reason this paper focuses on, and that's how the human race would act out on getting these new visitors on Earth. Earth is the place we humans call home, and as it is we want to protect it no matter what. Hence, why we should study extraterrestrial life no matter if they are out there or a figment of our imagination. We live in a really big solar system.

Understandably, there is no possible way that we are the only living beings that are thriving on this one planet Earth. What about the planets? We want to know who or what is residing in them.

What I have discovered is that during my interviews with my participants, their responses had details, but even they felt as though extraterrestrial life does exist. The way I saw where their mind was set was intriguing. Their answers were simple yet explained how even they wouldn't be certain of how the discovery of extraterrestrials will play out. Each of their responses explicates their reaction to whether they exist. In my opinion, conclude that even they would rather want to learn about if they came to Earth.

No matter how we see it, some will believe in the existence of extraterrestrial life. Ever since we have discovered other planets scientists and researchers made sure to find out what lies beyond and on those planets. Since humans and many other living organisms reside and survive on Earth, then what about those other planets? What type of living organisms live there? Now all we are left with is for us to wonder if we will find them, and if that is the case can we learn from each other and live as one in this big universe together?

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