Chapter 14
The Detection of Extraterrestrial Life: Are We Ready?

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Abstract This chapter offers a sociocultural perspective on the scientific search for life beyond Earth. It sheds light on the ways in which alien life is imagined and theorized in order to assess the possible societal response to the detection of *other life*. This chapter is based on the findings of research conducted over two years in the UK, which conceptualizes the extraterrestrial life hypothesis as a significant part of the general worldview, constantly shaped by the work and discoveries of science. Based on these data, the chapter offers insights into the current Western concepts of other life as understood, perceived, and interpreted by the scientific community and popular culture. The post-detection scenarios currently discussed deal mostly with a profound cultural shock following discovery of a superior extraterrestrial civilization. In contrast, the most recent scientific quest for *other life* now operates with a distinctly different concept of extraterrestrial life that ushers in other possible reactions to a detection or a contact. To establish current concepts of *other life* then seems to be crucial for predicting the societal response to a first contact. The chapter presents an overview of multiple conceptions of *other life* in science and science fiction to outline the potential variety of responses. The aim of this chapter is to suggest that the societal readiness and overall acceptance of the *other life* hypothesis needs to be taken into account and that the actual response to the discovery of *other life* will be determined by the actual form or type of life detected. This chapter will present examples from science fiction and other ethnographic material collected during fieldwork to demonstrate how popular culture has adapted the *other life* idea and how the presupposed *other life* is perceived.

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14.1 Is There Anybody Out There?

The past five decades have seen the rapid development of the scientific search for life beyond Earth, providing new insights to help determine whether we are alone in the cosmos. Inevitably many questions have been raised about the impact of the discovery of extraterrestrial life (ETL) on society. In recent years, there has been an increasing amount of literature published on the role and contribution of the social sciences to anticipating the societal response to the detection of ETL (Dick 2006). The role of anthropology in deciphering messages from extraterrestrials and dealing with the social consequences of detection has also been recognized (Denning 2011).

This chapter will focus on the cultural universe formed around extraterrestrial affairs as reflected in the imagination of Earthlings, in the world of fantasy where the close encounters with *other life* take place. Throughout this chapter the generic term *other life* will refer to ETL concepts that are commonly employed in science and science fiction, both embedded in popular culture. The diverse, sometimes contradictory, elements of the imagined Otherness listed below will introduce a variety of *other life* forms narrated in our stories.

This current contribution uses ethnographic examples of imagined contact with the other to examine post-detection scenarios. I address the importance of the human imagination in popular culture to present ETL as reflected within contemporary Western society. In the pages that follow, I will argue that current imagery and perceptions of ETL may play the key role following detection. My question is "Have the narratives about the encounter with aliens made the possibility of *other life* appear to be something to which one can get accustomed?"

14.2 Science and Science Fiction: The War of the Worlds

In 1898, H.G. Wells—whose work has been described as a turning point of the science fiction tradition (Suvin in Waites 1982)—published his famous book *The War of the Worlds.* One year later, Nicola Tesla, staying up late in his laboratory in Colorado Springs detected a suspicious sound; Tesla believed the signal originated from Mars. Shortly after that, in 1913, Edmund Ferrier summarized contemporary discoveries and discussed the evidence from Percival Lowell's observations of Mars surface: "Does all this mean that there are no inhabitants in the planet Mars? No. Mars is certainly inhabited. The collapse of the fairy world constructed by bold imaginations on the base of the canals of Schiaparelli disposes only of the wonderful engineers of whom Mr. H. G. Wells has given us, in his *War of the Worlds*, such a fantastic and captivating description" (Ferrier 1913, 108).

Martians became even more popular in 1939. The famous radio play *War of the Worlds* produced by Orson Welles caused a nationwide panic amongst at least one million of its listeners in the US (Cantril 1966). The on-air dramatization of alien attack demonstrated the "power of a narrative" (Berger 1997, 138) as well as the compelling power of mass media. Moreover, it provided a blueprint for a detection

scenario that has shaped mainstream contemporary expectations of the societal response to the discovery of ETL: contact with an alien race will be a distressing event with global impact. The alien superiority is clear from the first lines of H.G. Wells' book: "And we men, the creatures who inhabit this earth, must be to them at least as alien and lowly as are the monkeys and lemurs to us" (Wells 1898).

Since the invention of cinematography, more than three hundred movies presenting a non-human life form have been produced, including more adaptations of *The War of the Worlds*. The film of that title from 1953 directed by Byron Haskins was released in the US and ten European countries between 1953 and 1955 (IMDb 2012a). Steven Spielberg's *War of the Worlds* was distributed to 67 countries worldwide in 2005, showing on more than four thousand screens in the US and UK alone (IMDb 2012b). Reaching a global audience, the fictional invasion of a superior alien race became a popular part of the modern West's narrative history.

And so has the UFO phenomenon. Although regarded as irrational, UFO sightings and abduction stories developed into folk mythology and are reflected in cinematography and mass media. The nine seasons of the TV series *The X Files* from 1993, narrating the story of an FBI agent who investigates paranormal activities and seeks "the truth out there" were followed by a film *The X Files* (1998) where "Mulder and Scully must fight the government in a conspiracy and find the truth about an alien colonization of Earth" (IMDb 2012c). Notably in the filmography of Steven Spielberg we find references to alien abductions. In his *Close Encounters of the Third Kind* (USA 1977), the first humanoids to leave the alien spaceship after successful contact were the abducted pilots.

On the scientific front line of search for *other life*, there was much activity. A turning point in the history of the scientific search for ETL occurred in 1960, when Frank Drake performed his famous radio experiment in the Search for Extraterrestrial Intelligence (SETI), Project Ozma. This was shortly followed by other search (SETI) and messaging (METI) activities including the Arecibo Broadcast and Voyager's Golden Record, followed later by the Cosmic Call and Teen Age Messages. Since then messaging to extraterrestrials has grown into the public sphere: A Message From Earth was created "democratically via the internet, made up of pictures and words from Bebo users" (A Message From Earth 2012) and broadcast in 2008 from the Evpatoria radar facility.

The year 2008 opened a new era in METI as well as in marketing: a Doritos commercial was broadcast toward the Great Bear constellation. Labeled as "First space ad targets hungry aliens" (Barras 2008) or "How to make a bad first impression" (McGovern 2008), the Doritos advertisement became the first commercial ever transmitted to the universe.

14.3 Our Place in the Universe

> "Space… the Final Frontier. These are the voyages of the starship Enterprise. Its 5-year mission: to explore strange new worlds, to seek out new life and new civilizations, to boldly go where no one has gone before." *Star Trek* (opening narration) (IMDB 2012d).

There is no doubt that the scientific, fictional, and mythological concepts of *other life*—that is, ETL, science-fiction characters, and UFO sightings and abduction experiences, respectively— are focused around one cosmological question: Are we alone in the universe? Not only do they seem to be different facets of one thing, but all three of them are regarded as essentially cultural.

The anthropological dimension of UFO phenomenon had been highlighted by Grunloh (1977), who described the UFO sighting as a contemporary cult related to the religious visions of the past. Battaglia (2006) introduced the notion of the cultural universe and recognized extraterrestrial culture as a field of anthropological enquiry in the volume *E.T. Culture*: Anthropology *in Outerspaces.* Particularly the understanding of knowledge production and diffusion enables us to boldly explore the strange, new socio-cultural worlds formed around scientific activities and alien life, the "galaxies of discourse" (Battaglia 2006, 2).

The anthropology of science enables us to access the vast space where socio-scientific interactions take place. Works of science are cultural practices that exist in a social context (Martin 1998). Natives of Western culture are accustomed to scientific culture as they are scientifically literate (Harding 1991), and have access to scientific knowledge and science fiction, both shared via mass media. Here we arrive at the key premise of this chapter. The extraterrestrial life hypothesis is conceptualized as a significant part of the contemporary worldview, constantly shaped by the work and discoveries of science.[1] The concept of *other life* is not an element that destabilizes the belief system of a Western culture natives, but rather is in varying degrees embedded into their worldview.

14.4 Changing Perspectives: The Vision of New Worlds

More than a century has passed since the pioneering time of science fiction, as well as the scientific quest for other life forms. This century yielded developments, inventions, and scientific progress that brought humans to the Moon and transformed the Western world politically, economically, institutionally, and culturally.

Since the outset of the Space Age a whole set of new disciplines and institutions emerged: the office of outer space affairs, planetary protection, outer space treaties, and the prospect of space tourism. In 1987 the UN Report of the World Commission on Environment and Development (Brundtland Report) was addressed to "our common future":

> In the middle of the 20th century, we saw our planet from space for the first time. Historians may eventually find that this vision had a greater impact on thought than did the Copernican revolution of the 16th century, which upset the human self-image by revealing that the Earth is not the centre of the universe. From space, we see a small

[1] This chapter is based on data gathered from multiple sources during ethnographic research project *In Search of the Inhabited Universe*, conducted through the Department of Anthropology, Durham University.

> and fragile ball dominated not by human activity and edifice but by a pattern of clouds, oceans, greenery, and soils. Humanity's inability to fit its activities into that pattern is changing planetary systems, fundamentally. Many such changes are accompanied by life-threatening hazards. This new reality, from which there is no escape, must be recognised—and managed (UN 1987).

The opening lines of the Brundtland report leave us with no doubt: the global vision facilitated by the view-from-outside of "us" is the result of space exploration. Similarly, the Apollo 8 astronaut Frank Borman reported after seeing Earth from outside: "When you're finally up at the moon looking back on earth, all those differences and nationalistic traits are pretty well going to blend, and you're going to get a concept that maybe this really is one world and why the hell can't we learn to live together like decent people" (Space Quotations 2012). The problems we face by virtue of our sharing one planet are highlighted through the experience of the "one-world" and "whole-earth" (Cosgrove 1994).

The identity question plays a key role in any anthropological writing. In this case, the inhabitants of "one-world"—Earthlings—have been inscribed with a new identity that unties boundaries of culture and introduces loose boundaries of being human. When describing human beings from planet Earth, as seen *sub specie aeternitatis* ("under the aspect of eternity"), we can borrow a description provided on the Voyager Record. This "scientific narrative about human beings" (Capova 2008, 77) displays a generic human identity that rests primarily in biological factors and is further based upon cultural universals, elements common to all members of our species, for instance language and reproduction. The Earth citizen of the 21st century, removed from the boundaries and traits of his/her native culture, is ready to set off into the new inhabited universe and introduce the non-anthropocentric identity, the "interstellar humanity" (Dick 2000).

No longer at the edge of science and society, and far from being marginal or heretical, the idea of *other life* seems to be focused around important topics of human identity, related to the origin of life and addressing questions of contemporary cosmology. Particularly after NASA launched the Origins program, another important question came to place—our extraterrestrial origins: Are we all children of the universe? The works of science have changed and are changing our understanding the world—in other words, our worldview—and also our understanding of ourselves.

14.5 ET Life in Numbers: Yes or No?

Now we turn to the quantitative evidence on the popular understanding of ETL. Following the emergence of the ETL idea in public spaces, several surveys have been undertaken to map public opinion. In this chapter, we examine views from the UK and US, the latter being a center of SETI activities.

In a 2008 survey in the UK, 43 % of respondents stated that they "have never seen a UFO but believe they exist" and 9 % of respondents reported that they have seen a UFO (YouGov 2008). While 36 % of people said they don't believe UFOs exist, almost the same percentage of people said that both the British and

US governments have information on UFOs and extraterrestrials that they are concealing.

Two years later, in the survey commissioned by the Royal Society, nearly half of the respondents said that they believed extraterrestrial life exists, while 28 % said they do not, and the same percentage of respondents didn't know (YouGov 2010a). Approximately one quarter of those surveyed expressed the belief that scientists should not be actively searching for and attempting to make contact with extraterrestrial life. Another YouGov survey from 2010 (YouGov 2010b) explored the key areas of social life related to scientific discoveries including global warming, public health, and religion. That survey found that public opinion was evenly split on whether evidence of life elsewhere in the universe would be found.

The Gallup Poll from 2005 exploring paranormal beliefs in the US, Canada, and UK showed that on average 21 % of respondents believed that "extraterrestrial beings have visited Earth at some time in the past" (Lyons 2005). According to the Ipsos international survey conducted in 2010 in 22 countries on behalf of Thompson Reuters (Ipsos 2010), 20 % of respondents agreed that "alien beings have come to earth and walk amongst us in our communities disguised as us." With the highest percentages in this survey being in India (45 %) and China (42 %), the question of cultural differences in ETL perceptions arises. Because ETL detection is likely to have global consequences, post-contact activities need to be managed on a multicultural and multinational basis, taking into account sociometric factors such as gender, religion, age, and educational level of respondents.

14.6 E.T. or ETI?: On the History of Ideas and Confusion

Arguably, the belief in *other life* oscillates around 50 % when the definition of *other life* surveys is not entirely explicit and includes "extraterrestrial life," "aliens," and "alien beings." In the rhetoric of science, however, we can identify two fundamental concepts of *other life*. The first possibility arises from the tradition of SETI searches: an intelligent, detectable, and inherently peaceful (scientific) civilization that initiates contact. The second, more recent concept of microbiological life is the subject matter of astrobiology. Key concepts of *other life* as presented and worked with in the scientific search for ETL include the following:

- advanced lifeforms in an advanced stage of technological development
  - advanced civilization (SETI)
  - postbiological civilization (SETI)
  - remnants of an extinct civilization (SETI)
- life at an early stage of development
  - traces of microbiological life (astrobiology)
  - evidence of past microbiological life (astrobiology)
  - habitable environments (SETI, astrobiology)

- other

  – unimaginable and unpredictable (within the rational frame)

As I observed during my fieldwork, these are the two key ETL concepts that are currently recognized by the scientific community. At the same time, however, during my inquiry into activities related to search of life beyond Earth, I realized that my research design would benefit from rethinking the popular concepts of *other life* presented in the media and the public sphere in conjunction with the scientific concepts.

In popular understanding, is there a clear distinction between UFOs, aliens, and ETL? When searching Google.com one gets nearly three million search results for the phrase "extraterrestrial life," but the number increases to fifty-one million for the phrase "UFO" and nearly forty million when entering the phrase "aliens."[2] This greater volume of searches for "UFO" and "aliens" than for "extraterrestrial life" is consistent with other variants of extraterrestrial species in popular culture:

Aliens	Little grey men (grey aliens)
Visitors	UFOs
ETI	There must be something out there

Science fiction produces a wider variety of imagined life forms. Wikipedia's (2012) entry "Fictional Extraterrestrials" is now arranged in alphabetical list of fictional aliens that classifies hundreds of species, divided into the following lists: humanoid, mammalian, non-sentient, reptilian, parasitic, aquatic, exotic, arthropod, robotic, and plant species, and intergalactic communities.

Having reviewed the variety of imagined others, we now turn to imagined contact scenarios. In the language of science fiction studies, each contact scenario follows a set of conventions in popular culture genres (Berger 1997, 127). The movie *Contact* (USA 1997), based on the novel by Carl Sagan, provides a rather scientific example of another common contact scenario, in which the receipt of a message from an advanced civilization is followed by a strong societal response. This fictional contact takes place in a political context, receives widespread coverage in mass media, and religious considerations arise when selecting the right candidate to make contact with the extraterrestrial civilization.

Contact in the *War of the Worlds* adaptations is portrayed as a struggle for survival, accompanied by panic and fear, a scenario similarly seen in the movies *Independence Day* (1996) and *Cloverfield* (2008). A contact scenario with a totally unknown and potentially harmful ETL is seen in the film *Sphere* (USA 1998) when the team of contactees is being briefed about the action plan:

> [08:03] "We think there is an alien life form on the spacecraft and that is why you are here. You are the human contactees that were recommended by the Goodman Report. We have a biochemist to assess the physiology of the Unknown Life Form. We have a mathematician because that will probably be our common language. And we have an astrophysicist to locate its place in the cosmos."

[2] Valid as of April 28, 2012. In the case of the phrase "aliens" the high volume of searches may be elevated following the release of the Alien vs Predator film and personal computer game.

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> "Listen up [reading, quoting a report]: 'Contactee meeting an unknown life form, or U.L.F., must be prepared for severe psychological impact. Stress reaction when confronted by unknown life form has not been sufficiently studied and cannot be entirely predicted in advance. But the most likely consequence of contact is absolute terror. That's from Goodman's report" [08:48].

The latest works within the genre of science fiction bring new perspectives on contact. Notably in *Avatar* (USA 2009), contact is upgraded to a new level by showing humans as a more advanced civilization infiltrating a peaceful tribe on an alien planet. In the social commentary *District 9* (USA 2009), an alien population is moved out to a ghetto, allowing the viewer to see first contact from the perspective of apartheid.

On a less serious note, in the *Star Trek* parody *Galaxy Quest* (USA 1999) the representatives of an alien race visiting Earth are initially ignored because, in their human-like forms, they look too like the other fans of the defunct *Galaxy Quest* television series. Another lifeform is, sadly, eaten by a dog in *Hitchhikers Guide to the Galaxy* (2005).

The most influential works presented above cover only a small portion of the extensive body of science fiction, which do not begin to explore cinematography produced in other parts of the world. Nevertheless, this brief review illustrates ways that the extraterrestrial life hypothesis has been examined, not only as a subject of scientific inquiry, but also as part of a virtual world and our current narratives. The works of science fiction present not only conventional views based mostly on the binary opposites of hostile and peaceful alien race but also offer alternative perspectives on the contact situation.

14.7 Are We Ready for Contact?

On a few occasions during my fieldwork, people told me that they wouldn't be surprised to learn that the stories about alien visits to Earth and conspiracies are based on actual events. Similarly we have seen in public polls that a considerable number of respondents believe that aliens were or are present on Earth. The central argument of this contribution lays in showing the idea of *other life* in a different perspective and from a sociocultural perspective it is highly relevant to include popular conceptions about other life and science fiction stories in the ETL debate. While in the rhetoric of science the concepts of ETL are clearly defined, public opinion includes multiple and less articulate concepts of *other life* featuring various degrees of otherness. If the ETL debate is to be moved forward, a better understanding needs to be developed of the cultural landscapes from which the reaction of the public to the detection of extraterrestrial life arises.

We can speculate on the possible wider implications of our narratives about the encounter with aliens. But to be clear, we must be cautious about making any generalizations independent of the specific contact situation. The immediate societal response to the detection of extraterrestrial life will be cultural as well as

individual, but above all contextual, and in any case influenced by the type of life discovered. Since it is impossible to anticipate the nature of unknown life forms, we cannot reliably predict how contact will unfold also because a variety of cultural, social, and historical factors will shape both short-term and long-term responses.

However, we should consider the sociocultural evolution and ask if the generation of *Star Trek* fans, familiar with the fictional idea of an inhabited universe, would be shocked to find out there is bacterial life outside of Earth. Would the day we discover microbiological life beyond Earth be the day the Earth stood still, particularly after NASA's 1996 announcement of evidence for primitive bacterial life in a meteorite from Mars (NASA 1996) and following the study week on astrobiology held by the Pontifical Academy of Sciences in the Vatican (Pontifical Academy of Sciences 2009)?

As is typical for this topic, we get more questions than answers. Despite the Great Silence, after fifty years of actively search for other life and science fiction works, westernized Earthlings seem to be more receptive to the idea *other life* than at any point in history. Alien life is vividly imagined and publicly discussed and as such embedded in popular culture and social conversations. The mass media play a key role as a dispersing tool, broadcasting not only fantastic stories about the imagined other but also scientific information and subsequently influencing public opinion globally. The others are described in our stories; they take part in our TV shows, films, science fiction, folk mythology; they are embedded in popular culture; and they reflect our hopes, fears, and anxieties.

Appendix I. List of Films

Avatar. Directed by James Cameron. USA: Twentieth Century Fox Film Corporation, 2009.
Contact. Directed by Robert Zemeckis. USA: Warner Bros. Pictures, 1997.
Cloverfield. Directed by Matt Reeves. USA: Paramount Pictures, 2008.
Close Encounters of the Third Kind. Directed by Steven Spielberg. USA: Columbia Pictures Corporation, 1977.
District 9. Directed by Neill Blomkamp. USA: TriStar Pictures, 2009.
Galaxy Quest. Directed by Dean Parisot. USA: DreamWorks SKG, 1999.
Hitchhikers Guide to the Galaxy. Directed by Garth Jennings. USA, UK: Touchstone Pictures, 2005.
Independence Day. Directed by Roland Emmerich. USA: Fox Home Entertainment, 1996.
Sphere. Directed by Barry Levinson. USA: Warner Bros. Pictures, 1998.
The X Files. Directed by Rob Bowman. USA: Twentieth Century Fox Film Corporation, 1998.
War of the Worlds. Directed by Steven Spielberg. USA: Paramount Pictures, 2005
War of the Worlds. Directed by Byron Haskin. USA, Paramount Pictures, 1953.
Star Trek: The Next Generation. Created by Gene Roddenberry. USA: Paramount Television, 1987–1994.

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