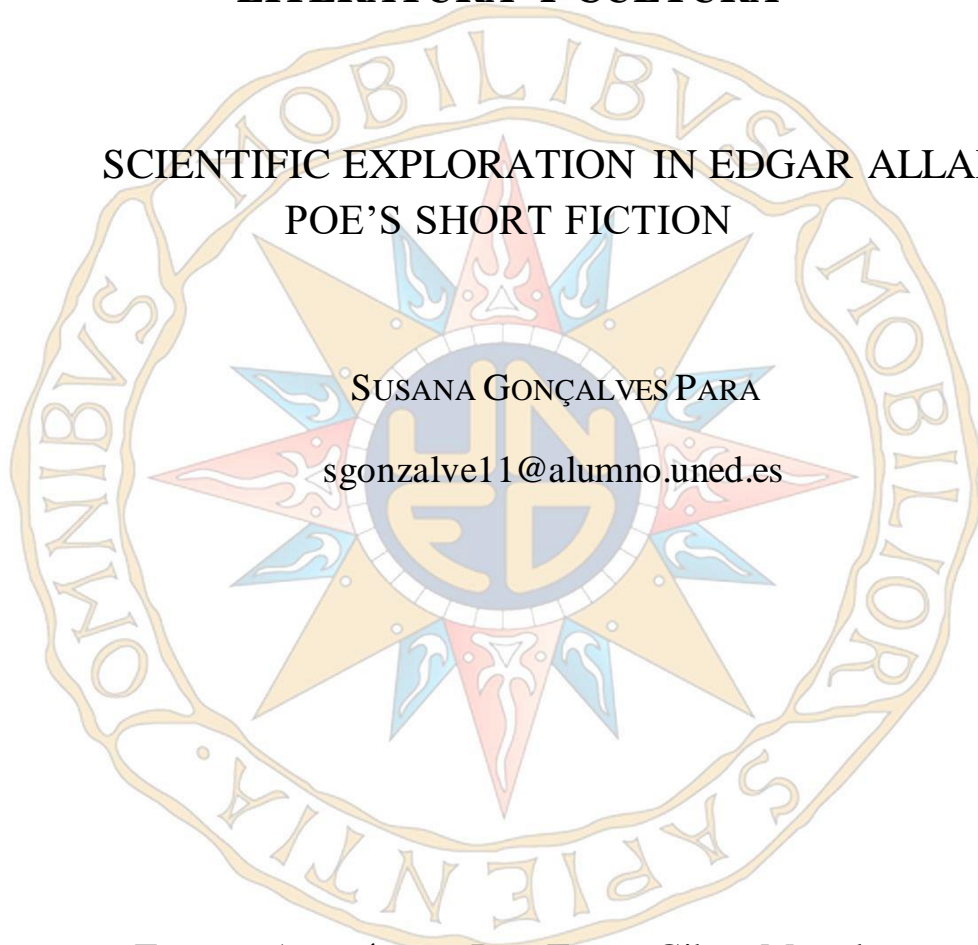




TRABAJO FIN DE GRADO

**GRADO EN ESTUDIOS INGLESES: LENGUA,
LITERATURA Y CULTURA**

**SCIENTIFIC EXPLORATION IN EDGAR ALLAN
POE'S SHORT FICTION**



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Abstract

The purpose of this paper is to underline the importance of scientific exploration as a major thematic influence in the works of American writer Edgar Allan Poe. In order to achieve this aim, three examples of his short fiction production related to maritime, aerial, and archaeological expeditions have been studied and put in context. This inspiration in early nineteenth century scientific issues opened the path for some of the literary developments that would later be known as science fiction.

Key words: Edgar Allan Poe, 19th century science, literary influence, scientific exploration.

To my daughter, who will talk with machines.

I would like to express my gratitude to my family and Charlie for their constant and unconditional support.

“Now voyager sail thou forth to seek and find.”

(Walt Whitman, “The Untold Want”)

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1. Introduction

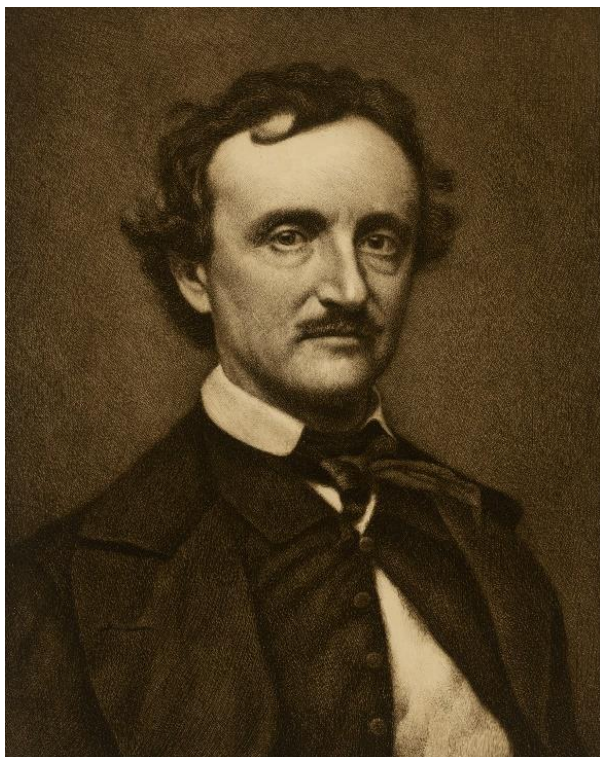


Fig. 1. Edgar Allan Poe portrayed by Jacques Reich. National Portrait Gallery, Washington DC.

Edgar Allan Poe (1809-1849), in addition to achieving mastery in the construction of the short story, introduced in his narratives new themes that range from stories of detection to fantastic journeys, experiments that challenge our knowledge or bloody murder mysteries, describing extraordinary but strangely plausible situations. He is considered the creator of the science fiction short story, a genre that began to be recognized as such in the first issue of the magazine *Amazing Stories*, published in 1926, when its editor, Hugo Gernsback, cited Poe along with Jules Verne and H.G. Wells as the models for a new genre that he would define as romance “intermingled with scientific facts and prophetic vision” (Attebery 33). Furthermore, Poe was a major influence for the writers that followed in the second half of the century, for whom he was the precursor, laying the foundation for future literary developments. His ascendancy can be found in Arthur Conan Doyle, Jules Verne, H.P. Lovecraft, and many more.

1.1 Thesis statement and objectives

Poe's science fiction tales are closely related to the discoveries of the early 19th century. The author's imagination combines the news of the moment about polar expeditions, Egyptology and aerostatics with theories and speculations about the Earth core, the galvanism, and the possibility of finding life in the Moon. Having in mind that Poe started producing his stories to make a living from his writing, it would not be unusual that the scientific trends of his time were an important source of inspiration for this author. Therefore, the thesis statement that will guide this work is "Edgar Allan Poe's short fiction show evidence of the author interest in scientific exploration."

According to this thesis, my paper has the following objectives:

- Assess how Poe's tales are considered predecessor and model of a new genre that choose science as a recursive theme.
- Trace the influence in his narrative of scientific advances contemporary to the author through three of his short stories, that being "MS. Found in a Bottle," "The Unparalleled Adventure of one Hans Pfaal" and "Some Words with a Mummy."

1.2 State-of-the-art

Being one of the most widely read authors in American literature, Edgar Allan Poe's work has been studied from very different approaches. I have focused on papers and publications that are related with the unique relationship that Poe had with the scientific issues of his moment. As science is present in various facets through his work, from the early poem "Sonnet – To Science" (1829) to the essay "Eureka, a Prose Poem" (1848), I have searched especially for those that reflect his interest on exploration, a minor theme if compared with Astronomy, one of Poe's recursive themes.

Most works on the author remark the importance of the context when dealing with this subject, as is stated in the book *The Cambridge Introduction*

to *Edgar Allan Poe*: “Some obvious historical influences on Poe include works about archaeological explorations, travel literature, [...] scientific or pseudo-scientific writings, newspaper columns, plus many more” (Fisher 15). The book *Edgar Allan Poe: The Critical Heritage* collects Margaret Fuller’s review published in 1845 on the anthology *Tales*, in which she remarked:

The writings of Mr. Poe are a refreshment, for they are the fruit of genuine observations and experience, combined with an invention that is not ‘making up’, as children call their way of contriving stories, but a penetration into the causes of things which leads to original but credible results. (177)

The article “Poe in Relation to his Times” analysed in 1923 the number of references to contemporary events in his extensive work, asserting that “Perhaps as many as half of Poe’s tales were based, in whole or in part, on contemporary happenings or were suggested by contemporary publications” (Campbell 297). Harold Beaver’s “Introduction” and “Commentary” in the volume entitled *The Science Fiction of Edgar Allan Poe* make an important study on the contemporary sources that Poe may have had at his disposal, and also offers very useful notes to each story.

“Poe and Scientific Anticipation” by Margarita Rigal and Ricardo Marín is an article published by the journal *Signa* in 2014 that offers a journey through Poe’s prose that highlights the importance that science had for the writer.

“Some Words with a Mummy” is the subject matter of an article that analyses its traces of orientalism — “Poe’s ‘Some Words with a Mummy’ and Blackface Anatomy”— and also of a publication in Spanish that relates this story with the time it was written: “De cuando Poe interrogó a una momia. Un extraño caso a caballo entre la antropología cultural y la arqueología forense: El orientalismo sometido a examen por el padre del terror racional,” the latter published in the UAM journal *Isimu*.

“The Unparalleled Adventure of one Hans Pfaall” is mentioned by almost all authors as an anticipatory account of what today is called “hard science fiction,” emphasizing the importance of plausibility in the story and its reception.

The setting is the axis of the plot in “MS. Found in a Bottle” and, as shared with *The Narrative of Arthur Gordon Pym*, is the main concern of the paper “Death, Madness, and the Hero’s Journey: Edgar Allan Poe’s Antarctic Adventures.” However, I should mention that I have searched for articles that support my interpretation on the origin of the black ship and its crew in “MS. Found in a Bottle” and have not been able to find any. I have read different and very interesting approaches to the text: Gary Scharnhorst analysed it in his paper “Another Night-Sea Journey” as an allegory of the *in utero* experience, being the descent into the whirlpool a representation of birth. For Fisher it could be read as a symbolic journey into the depths of the self (65); and even Harold Beaver mentioned in his “Commentary” on *The Science Fiction of Edgar Allan Poe* a study concluding that the ship’s captain was Christopher Columbus himself (qtd. in Beaver 337). Almost all studies acknowledge the influence of Symmes’ Hollow Earth theory on the text, but none of them suggest that the ghost ship provenance was related to it, as I explain below.

1.3 Methodology

Having fixed the focus of this study in the stories inspired by scientific events, it is of great interest the first published anthology based in this criterion, edited by Harold Beaver under the title of *The Science Fiction of Edgar Allan Poe* (1976). These tales were selected by the editor considering not only the subject matter but also the subjective emotion that they cause on the reader, the sense of wonder that has always been one of the essential features of science fiction. The three stories selected as primary sources are “MS Found in a Bottle,” “The Unparalleled Adventure of one Hans Pfaall,” and “Some Words with a Mummy.” They were chosen from this collection with the aim of relate them to different scientific trends of the time.

In order to place the author in his social context the biography by Canning offered by Lion (Literature Online) was fundamental, as well as Quinn’s *Critical Biography*, accessible through the Edgar Allan Poe Society of Baltimore website. *The Cambridge Introduction to Edgar Allan Poe* also offers

a useful account of Poe's works and their reception. Furthermore, to understand the state of science and its influence on the 19th society, the work by biographer Richard Holmes *The Age of Wonder: How the Romantic Generation Discovered the Beauty and Terror of Science* has served to give me an idea of the social reception of the discoveries of the time.

Regarding Poe as the creator of the science fiction story, other secondary sources have been consulted, such as the essay "Poe Invents Science Fiction" in *The Cambridge Companion to Edgar Allan Poe*, and also the chapter "Science Fiction Before the Genre" in the volume *The Cambridge Companion to Science Fiction*, that offers a detailed history of the genre, essential to better understand his enormous influence on future generations of writers.

The more specialized articles on each of the selected stories have helped me to learn about the author's references to different scientific explorations. With the aim to stress the importance of some of them, I have also consulted specific media, such as NASA educational web for information on the Moon and the *Encyclopaedia Britannica* website, that provides an article on the history of ballooning. Richard Holmes' *Age of Wonders* dedicates an entire chapter to the pioneers of aerostatics. Furthermore, it was necessary to consult data on the status of polar expeditions and on archaeological discoveries in Egypt at the beginning of the 19th century, which increased the list of resources and works cited.

By considering the short stories selected for study as the product of its time and its compositional circumstances determined by the context, it could be said that a New-historicist approach is reflected in this paper.

2. Edgar Allan Poe and the science of his time

At the end of the 18th century, a number of technical inventions were produced, giving a great development to the industry and communications. Those advances, mostly motivated for the use of steam engines, promoted

an important social change in the first half of the 19th. Consecutive discoveries in the field of electricity and its applications, as the electric telegraph, improved communications, hence journalism and the spreading of news of all scope. By the half of the century American society was very different from how it was at the beginning. Faced with new scientific discoveries, the most frequent attitude was that of surprise, wonder, and a little fear. While some people looked at the future with hope and enthusiasm for technical issues, others imagined it as a threat. Although wide spreading by press, most of those advances did not usually reach the common men, and many found them incomprehensible. But the scientific world was in turmoil. New disciplines of study had emerged, with the appeal of novelty and esoterism. Electricity was an untamed toy of great and unknown possibilities, and magnetism allowed what seemed like magic. The world around Edgar Allan Poe was in constant movement, so it was logical for him to grasp that movement in his writing and even go a little further.

Science fiction was not yet a genre, not even a concept, but what makes Poe its forerunner is his attitude when dealing with scientific issues. In some of his published short fiction this attitude is shaped for elements that already existed separately and that he manages to crystalize in a common conjunction: the utopic point of view, the fantastic voyage, the scientific mission, the satirical element, the Gothic, the technological vision, those being elements found in most of the contemporary science fiction stories.

Science-based fiction is always motivated by imagining the possibilities of the most advanced theories and discoveries of its time, trying to anticipate their consequent aftermath. Therefore, it is easy to identify the trends of the moment through the subject matter of the work: the mechanical give way to the electrical and robotics, which after World War II was followed by the atomic, then the space conquest, the artificial intelligence, currently the quantum physics, transhumanism, and so on.

The selected examples of Poe's short fiction were all published in weekly newspapers. All three were written in a way that could have been interpreted as those hoaxes that the author loved so much, as they took the

form of surprising testimony. The “manuscript” is a suspense crescendo in a tone that grows from seriousness to despair and fear. On the contrary, Hans Pfaall’s journey is framed in a ridiculous tale, as if Poe used the grotesque to present the arabesque, the latter being in that story the account of the trip itself. According Harold Beaver, some details in this text evidence that his author’s intention was not be taken very seriously: Pfaall takes off on April’s Fools Day, the top of his balloon had the shape of a fool’s cap and the people from Rotterdam had ridiculous names. In addition, his air condenser is named “the very ingenious apparatus of M. Grimm” (29), the same name that the famous fairy tale compilers, contemporaries of Poe. As for “Some Words with a Mummy,” it turns to be a hilarious satire about progress and knowledge that shares with Hans Pfaall’s adventure a detail that even could be a satire of press and journalism, the very way for Poe to earn a living, that conveyed the futility of the written word: the balloon that brings the letter from Pfaall to Earth is made of old newspapers, while the mummy is not rolled in linen bandages, but in *papier mâché* made with old papyrus.

To better understand Poe’s scientific stories it is needed to put them in context, thinking of course in the time they were written but also in the way they were read, mostly in weekly publications, at the light of the oil lamp, in a nation that was still building its identity.

3. “MS. Found in a Bottle”: Explorers from another world

The narrator of this allegedly found in a bottle manuscript relates how he is lost in the Austral ocean, in a ship adrift from where he wrote the message we are reading. Eventually, the ship is engulfed by a whirlpool placed just in the South Pole. Two great mysteries articulate this short story: what the huge whirlpool is and what the origin of the ghostly ship and its crew is. The influence of speculative Hollow Earth theories on Poe could provide an explanation for both issues. “MS. Found in a Bottle” was first published in the *Baltimore Saturday Visiter* on October 19, 1833.

At the beginning of the 19th century, the Antarctic continent was not yet mapped, it was an unknown vastness, hard to explore, subjected to extreme temperatures and climatic phenomena, and remained mostly unexplored until the 20th century. Poe, as an avid reader with such a curious mind, used to read travel literature and accounts of maritime expeditions, and even reviewed some for the *Southern Literary Messenger*. His inquisitiveness and his imaginative creativity led him to place the ending of this tale at the very South Pole long before any expedition got there: the Admunsen expedition was the first to reach it in 1911 (Ward).

It is not easy to imagine a landscape more adverse for human beings than the polar regions. This may be the reason why the Gothic imaginary, with certain spirit of cautionary tale, made it the perfect setting that blends solitude, harsh nature, and impenetrable mystery. The tragic Frankenstein's creature by Mary Shelley had already been condemned to exile in the frozen polar vastness, and Poe himself will return there with *The Narrative of Arthur Gordon Pym* later in 1838 (Møllegaard and Belcher 415).

The poles were at that time the epitome of destructive nature and therefore, one of the paradigms of Gothic space. It was first described by explorers as a dreadful and enormous void. As Katherine Bowers points out in her article published on the journal *Gothic Studies*, this setting produced a number of works that had distinctive features:

Polar Gothic conventions – extreme weather, harsh climate, ice and snow, poor visibility, creaking ship sounds, an eerie, muffled silence – create an atmosphere of fear priming both reader and protagonist for an encounter with a supernatural other, an external source of terror. (80)

Any expedition through this unexplored land was potentially dangerous, and for that very reason the audience was attracted to the narratives and journeys of intrepid travellers even —or mostly— if the chronicle was prone to describing extreme experiences of loneliness, anguish, violence, and death.

Parallel to the interest in maritime geographic research expeditions, the theme of the shipwreck as the worst oceanic nightmare is present in many different ways during the Romantic period, as in Samuel Taylor Coleridge's

poem “The Rime of the Ancient Mariner” (1798), to whose ghost ship point all the studies as the major influence for Poe and the strange ship and crew described in his “manuscript.”

There is also an accident at sea in Byron’s “Don Juan,” although perhaps the most famous representation of a shipwreck in Poe’s times was the masterpiece by French painter Théodore Géricault *Le Radeau de La Méduse* (*The Raft of the Medusa*). It so happens that this work was exhibited in London in 1920, just the year Poe left the city with the Allans.



Fig. 2. *The Raft of the Medusa* (1819), by Géricault. Louvre Museum, Paris.

The impact that the story of the French frigate *Medusa*’s shipwreck, on which the painting is based, caused on the society of the time, was to arrive to America at the same time as Poe did. The passenger’s odyssey became popular in the decade of 1820s through American press, which reproduced fragments of the narrative by Correard and Savigny, survivors of the raft, that was published in 1817. The account of their ordeal was later translated into English and widely spread. In addition, a full-scale copy of Géricault’s painting, made by American painter George Cooke (1793-1849), was exhibited in New York in 1931 and in Boston in 1933 with a large number of visits, which

indicates how interested the public was in the story of the raft and the horrors that happened on it. A series of articles by George Cooke entitled *On the Fine Arts* were published from 1835 to 1840 in the *Southern Literary Messenger* (Athanasoglou-Kallmyer). Given Poe's relationship with the *Messenger*, it is quite likely that they came to meet each other.

Names are also very important in Poe's tales, and often provide some clues to the reader. The mention of Batavia in the second paragraph of the "manuscript" foreshadows the shipwreck that is about to happen: Batavia was the most important port in Indonesia, but also the name of the Dutch ship that in the 17th century suffered a disastrous accident that went down in History as one of the bloodiest episodes of death and madness of its time, whose story is recounted by Mike Dash in his book *Batavia's Graveyard*. Poe, as a well-informed journalist, found a theme that was both morbid and contemporary at the same time in the shipwreck experience taken to the extreme, which was one of the motifs of death and madness in Dark Romanticism. By combining this atmosphere with a striking theory about the poles, Poe achieved a suspenseful crescendo and an astonishing ending for "MS. Found in a Bottle."

At the same time, during the 1820s the so-called Hollow Earth theory gained popularity. American John Symmes issued a brief manifesto in 1818 with the proposal of exploring the South Pole in the quest of a hole, convinced that, once they had dodged strong currents they would find there an entrance to an inner layer of the Earth. Based on these theories, the novel *Symzonia: A Voyage of Discovery* was published in 1820. The name of the author, Captain Adam Seaborn, is presumably a pseudonym, and the work is usually attributed to Symmes himself. In this novel the South Pole is the access to a subterranean world inhabited by evolved humans, apart from those in the surface (Blum 260).

Whether or not Poe read the novel, he undoubtedly was very close to these speculations. One of the strongest defenders of Symmes' theory was editor Jeremiah Reynolds, whom Poe admired enough to review his lectures on the Hollow Earth (Møllegaard 420). Reynolds broad towards the polar regions in an exploring expedition that returned to the US in 1831 and,

according Møllegaard and Belcher, “Poe was highly indebted to Reynolds’ descriptions of the South Pole region and influenced by his advocacy of Symmes’ Hollow Earth theory” (420).

The matter of the polar holes was taken seriously enough for the government to find funds for The United States Exploring Expedition to the South Pole (1838-1842) for the purpose, among others, of discovering the hole. They obviously did not succeed, but their adventure proves the great interest that the society continued to have in the subject during the 1830s.

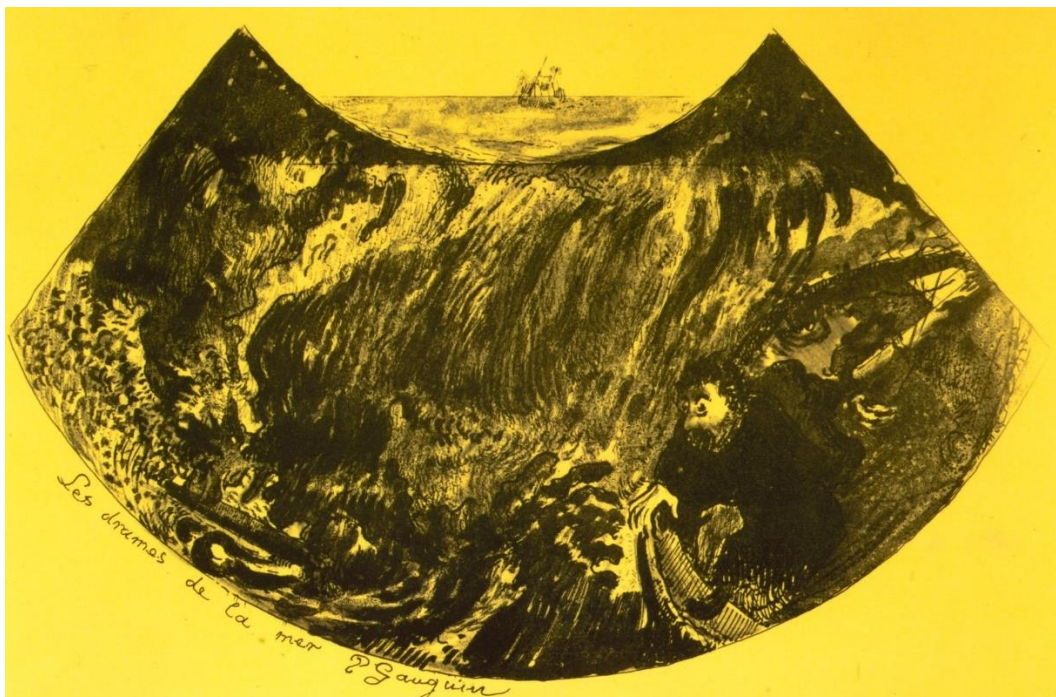


Fig. 3. *The Drama of the Sea* (1889), a lithograph by Paul Gauguin inspired by Poe’s fiction. Metropolitan Museum of Art, New York.

In “MS Found in a Bottle” everything leads to the whirlpool. As the narrator is “well aware of having made farther to the southward than any previous navigators” (Poe 5), the author uses diction to foreshadow the ship destination. Thus, the air is “loaded with spiral exhalations” (2), the noise is “like that occasioned by the rapid revolution of a mill-wheel” (3). Everything is spinning at a velocity “like the headlong dashing of a cataract” (10). The final moments are described as a fall into a drain: “we are whirling dizzily, in immense concentric circles [...] we are plunging madly [...], the ship is quivering, oh God! and — going down.” (11)

When reading the fall through the whirlpool, it is inevitable to think of Symmes' holes. Poe constructed his short fiction from the idea of a shocking ending, and what can be more surprising than the possibility of entering a secret world hidden under our feet? Eventually, the narrator understands that he is about to live an event never experienced before that could mean his death: "It is evident that we are hurrying onwards to some exciting knowledge – some never-to-be-imparted secret, whose attainment is destruction." (10) But then, why does the strange crew of the mysterious ship show "an expression more of the eagerness of hope than of the apathy of despair" (10) while descending into the hole?

For a science fiction reader, the apparently catastrophic ending of the "manuscript" changes the sense of the narrative the moment we assume the Hollow Earth theory as a hidden theme. Then the whirlpool is the door, the entrance to an inner alien world. But it is a two-way road. The strange and unknown language, the aging state of the crew and their problems to walk and move normally, the notorious otherness of the ship and everything it contains, the fact that the narrator did not recognize any object in the black ship despite having declared that he was engaged in the antiques business — all the details fit into this story giving the readers an ending that successfully provokes the kind of impact Poe was looking for. And it is that the amazement, the sense of wonder, comes precisely from understanding that the strange crew is not made up of ghosts. They were the *actual* scientific explorers. Neither their ship nor their navigation instruments come from our civilization. Exhausted and lost, undoubtedly affected by differences in gravity and pressure, they are heading for the whirlpool, seeking to be engulfed by it. That way, at last, they will be able to return home.

4. "The Unparalleled Adventure of one Hans Pfaall": To the sky and beyond

First time published in 1835 in the *Southern Literary Messenger* as "Hans Pfaall – A Tale" and reprinted in 1840 as "The Unparalleled Adventure

of one Hans Pfaall,” in this story Poe plays with the boundaries of fiction through another “manuscript,” this time relaying how a man would have travel to the Moon in an adapted balloon that provided him with breathable air. Hans Pfaall tells how he travelled from Rotterdam to the lunar surface in a balloon constructed by himself, with profusion of technical details and the determination that only reckless and desperate men could have.

Pfaall’s adventure is framed in a cartoon-like tale in a satirical tone with picturesque descriptions of the characters—in which it is impossible not to smile with the image of the citizens of Rotterdam dropping their pipes at the same time—that works as an introduction, followed by the narration contained in his letter, with meticulous technical descriptions of Pfaall’s flight to the Moon. Both parts show different writing styles, with which Poe seems to move between a ludic sense of fun and scientific solemnity: for detailing the real world he uses a satirical tone, but for describing the imaginary realm in Hans’ letter he does so as a matter of fact.

This story can be considered as the first to illustrate through fiction how an authentic trip to the Moon could be, taking into account the knowledge and technology of the time. It is not just a tale about an imaginary trip, but the attempt to raise a thesis as objective as possible, of the possibility of such an adventure. This characteristic is what turns it into an extraordinary example of speculative science fiction. Poe used the astronomical knowledge about the Moon that was already known and added elements of his own imagination, some of which proved, over time, astonishingly accurate.

The first balloon flight in America was made in 1793 in Philadelphia, ten years after the inaugural Montgolfier brothers’ flight in Paris. In the barely forty years that elapsed until the publication of “Hans Pfaall” the ballooning technique was improved, hot air was replaced by hydrogen in order to gain height and aerostatics reached great popularity: humanity could travel through the air, the ancient dream of flying had been fulfilled. In 1833 an aeronaut makes a successful flight in Baltimore while Poe was living in the city (Beaver 347) and every new ascent was reported as a high point of modernity and spread by American press. In the words of Romanticism biographer Richard

Holmes, “Ballooning proved to have extraordinary theatrical power to attract crowds, embody longing, and mix terror and the sublime with farce” (Holmes 222).

In describing the launch of the gigantic balloon, Poe abounds in detail about the type of gas that should be used, but makes Pfaall to be reluctant to explain how he obtained it:

[...] a *particular metallic substance, or semi-metal*, which I shall not name, and a dozen demijohns of a *very common acid*. The gas to be formed from these latter materials is a gas never yet generated by any other person than myself. (19)

It was known that with conventional gas a balloon could not reach such a height because in the vacuum of space there is no pushing force from the atmosphere. Although the author makes us believe that this vacuum does not exist, but that it is a very diluted atmosphere, he does not even consider using hot air for his balloon, as it would have had the added problem of keeping the burners on in a low oxygen environment. So, for the balloon to reach height, it would be enough to fill it with a very light gas, with less density than hydrogen. This piece of information results to be an example of anticipation: years after, in 1895, helium—which modern balloons are filled with—was identified (Watson), sharing some of the characteristics of Pfaall’s imaginary gas, which was “tasteless, but not odorless; burns, when pure, with a greenish flame” (19). Helium is not flammable, but it is colourless, odorless, and the second lighter element.

FICTION ANTICIPATES SCIENCE

•
Hans Pfaall's Balloon Seems to Have Been
Filled with the Gas Recently Found
in the Air by Prof. Ramsay.

Fig. 4. Headline in *The New York Times*, May 7, 1895, page 4. William Ramsay’s work in isolating helium was spread recalling Poe’s character.

Poe imagined, as already said, an actual trip, and therefore his reflections about what could happen should adjust to reality as much accurate as possible. That way, he proceeded to analyse every possible problem with

the caution of a scientist. First, he had to resolve mathematically the question of the separation between the Earth and its satellite according to the astronomical knowledge of his time. Hans Pfaall set the distance to the Moon approximately in 231.920 miles, not far from the actual data, which establish the average distance in 238.855 miles (NASA's Science Mission Directorate). The distance varies because the Moon travels around Earth in an elliptical orbit, being this a variable that the meticulous Pfaall takes carefully into account in his calculations. Either way, the resulting number is overwhelming, as it is stated that "the greatest height ever reached by man was that of 25.000 feet, attained in the aeronautic expedition of Messieurs Gay-Lussac and Biot" (27). Indeed, the Gay-Lussac balloon had reached a height of 7.600 meters in 1804, but the possibility of reaching a greater distance was implausible due to lack of oxygen.

Therefore, the second problem for Poe to consider was the density of the atmospheric mass, the rarefaction of the air according to the altitude, which obviously would endanger the survival of any living being. Hans Pfaall argues that as altitude is gained, the air steadily decreases but not disappeared altogether, and concludes that no matter how high the elevation is, a level beyond which there is no atmosphere will never be reached. Thus, the air would be similar to that in Earth, although in an infinite rarefaction condition. In order to process this air for breathing needs, Pfaall has the help of Grimm's condenser apparatus, a rare —and fictional— invention that would provide him with purified air when he manages to make a kind of cockpit by turning the balloon basket into a sealed compartment. With such a genius idea Poe anticipated again a logical solution that would become reality in the future: Auguste Piccard created the first pressurized cabin to reach the stratosphere by balloon, and he did it in 1931 (Piccard).

In addition to this system designed to supply the air extracted from the outside and introduced through the condenser, Poe leads his readers through all kinds of scientific solutions and extraordinary theories, like those about the adaptation of the human body to the lack of pressure. When Pfaall began to suffer the characteristic symptoms of the human organism at great altitude, he decided to undergo a bleeding, a very popular surgical procedure still in

the early 19th century to relieve hypertension. When he deduces that he must to wake up at regular intervals to activate the condenser, he invents a homemade alarm clock that wakes him up by dripping water on his head.

It is precisely in this constant process of solving problems through individual thinking where the fascination of this narrative lies, which continues to have scientific value despite the passage of time and the obsolete character of the science in which most of the technical knowledge of Poe drew on. His approaches to the subject were revolutionary, as they were conceived by imagining the real conditions in which they could work. And this is a characteristic that science fiction has highlighted through its history: by imagining the conditions, scientific advances are created to overcome them. Just as when imagining the future, all its elements are also imagined.

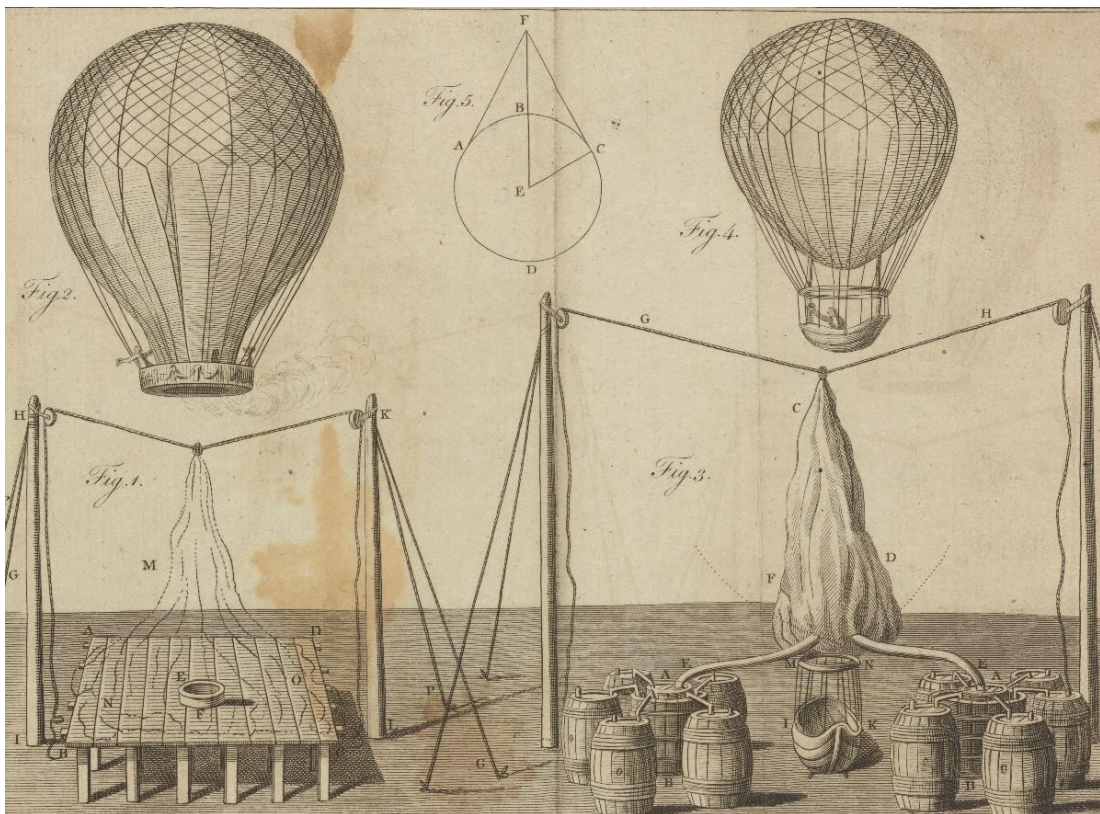


Fig. 5. Engraving in the book *The History and Practice of Aerostation*, London, 1785. Courtesy of Science History Institute.

All this turns this prodigious story into a model of what today is called “hard science fiction”: the one that is rigorously consistent with the science established in the moment of its writing. Today we know that the power of

rockets is needed to enter in the lunar orbit, but in Poe's times, the possibility of taking advantage of the Moon's supposed gravity did not seem like a wrong idea: "I should arrive at the exact point of my voyage where the attraction of the planet should be superseded by the attraction of the satellite" (51).

Pfaall carries with him on his odyssey several scientific instruments that uses to record his adventure. With a telescope watches the diameter of Earth, and of course the North Pole, on which he observes a circular centre that "was at all time darker than any other spot upon the visible hemisphere, and occasionally deepened into the most absolute darkness" (47). According Harold Beaver, this description can only refer to the Symmes' theory of the Hollow Earth, which influence on Poe's fiction has been explained in the previous chapter of this paper (13).

After having taken the story with a personal scientific vision, Poe integrates a fantastic element through the description of the strange lunar civilization and its inhabitants, some small and not very intelligent beings similar to elves but lacking ears, having developed some kind of intercommunication. This latter picturesque fact makes certain sense, because due to the absence of air the sound cannot be transmitted in space.

Hans Pfaall ends his letter by communicating that, after having living with the Moon people for five years, he has very important information to share but with the scientific community only:

I may have intelligence for the private eye of the States' College of Astronomers of far more importance than the details, however wonderful, of the mere voyage which so happily concluded. [...] I have much to say of the climate of the planet, of its wonderful alternations of heat and cold. (55)

This comment may have arisen by chance, but it is at least interesting that Poe anticipated a concern as foreign to his time as climate change.

The letter also mentions the discovery of "a variable zone of running water" (55), although in the time it was supposed that there was not water in the Moon. It was in 2009 when NASA orbiters found ice at the poles, in the permanent shadow zone. Furthermore, Hans reports the mysterious connection between each Moon creature with every individual on Earth, emulating the cosmic connection between the planet and its satellite.

These speculative contributions do not invalidate his scientific reflections, that ultimately arise from the same source, his prolific and brilliant imagination. For Poe, the scientific accuracy was needed only during the part of the story in which it was useful: the trip itself, a voyage to the Moon supported by scientific and technical knowledge that maybe was one small step for an author, but a great leap for a new literary genre.

5. “Some Words with a Mummy”: It’s alive!

Poe chose again for this narrative writing in the first person and in a shape of direct testimony. The narrator describes with a slightly acid sense of humour how the night before, after an abundant dinner, he is invited to a unique exhibition: the unrolling of an Egyptian mummy. When verified that the body had not been eviscerated the attendants decided to apply electric shocks to it, which brings the mummy back to life to have an interesting and very polite conversation with the audience. This short story was first published in 1845 in the *American Review: A Whig Journal*. In the form of an amusing satire on the progress, Poe deals on it with topics such as Egyptology and the applications of electricity, mixing them with one of his most personal and disturbing themes, the prolongation of life, or more accurately, the suspension of it to avoid death.

The 19th century began showing to the world the wonderful secrets of ancient Egypt. After the Napoleonic expeditions —whose most spectacular result was the discovery of the Rosetta Stone— and the victory of British empire in the country, western society was still assimilating the impact of the huge quantity of Egyptian treasures that were being brought to light and studied. The speculations about their secrets spread to a bourgeois and cultivated society eager for curiosities and fascinated by the exotic, that welcomed the enigma that ancient Egypt offered.

No doubt Poe was greatly impressed by the decipherment of the hieroglyphical writing by Jean François Champollion in 1822, since he names the French linguist with admiration in another tale, “Mellonta Tauta” (1849):

Would it not have puzzled these old moles, too, to have explained by which of the two ‘roads’ a cryptographer unriddles a cryptograph of more than usual secrecy, or by which of the two roads Champollion directed mankind to those enduring and almost innumerable truths which resulted from his deciphering the Hieroglyphics? (316)

Poe shared with Champollion his fondness for cryptography and riddles, and the analytical mind that created the amateur detective Auguste Dupin could not less than admire the person that had solved the apparently unsolvable enigma of his time. Besides, in the 1830s different expeditions increased the number of Egyptian treasures uncovered, new sets of pyramids were discovered, and countless tombs were opened, their treasures transferred to European museums and their mummies treated like exotic specimens.

Egypt became part of the literature and arts motivating all kinds of creativity: one of the most known poems by Percy B. Shelley was the sonnet “Ozymandias” (1818), inspired on the grandiosity and decay of the ancient empire of the pharaohs. Jane Webb Loudon’s futurist narrative *The Mummy. A Tale of 22nd Century* was published in 1827 and is considered the first work of fiction with a revived mummy (Beaver 384). About the western representation of mummies Tessa Baber writes:

These embalmed bodies inspired gothic literary works that explored themes of death, immortality, and resurrection. Works of mummy fiction of this period imagined the inherent ‘spirits’ of these mummies prevailing upon their new, foreign owners to released them to their own land and time. (63)

Egyptian architecture touched western society with its style, reflected in the famous Egyptian Hall in Piccadilly Circus in London and of course in many pantheons. Gentleman’s societies, as the Masons, took Egyptian images as their own secret symbols. This way, in parallel with Egyptology appeared the Egyptomania, that found amusement in the exotic image that the ancient civilization offered.

An example of that combination of science and entertainment can be found in the mummies' unrolling that took place in early 19th century: when an amateur Egyptologist got a mummy, usually through money, contacts and the antiques black market, an anatomist used to be hired in order to unroll it and show its secrets in a public event. That show satisfied the curiosity for the morbid, the condition of the body and the jewellery the corpse was decorated with. The practice became popular and some of the unrollers were very famous, like surgeon Thomas Pettigrew, who published in 1834 his *History of Egyptian Mummies* (Moshenska 463). This mixture of mystery, science and the macabre is reflected in the gathering of gentlemen that unwrap Poe's mummy. Placing the event in a private house in the middle of the night is a way to convey the secrecy of the act, while evoking the Gothic literary trope of the nightly and clandestine exhumation.



Fig. 6. Illustration in the 1852 British anthology of Poe's works *Tales of Mystery, Imagination, & Humour, and Poems*, p. 216.

Poe must have also known the work *Ancient Egypt* published in 1943 by US consul George Gliddon, who is directly satirized by the author by sharing his name with one of the characters of "Some Words with a Mummy" (Beaver 382). Poe was aware of the plundering that Egyptian antiques were

suffering, maybe for this reason one of the first things the mummy does when coming back to life is to reproach the Egyptologists in the room for the way the tombs were treated in the name of scientific research.

The gentlemen gathered to observe the mummy are astonished that the corpse is complete and with all the vital organs and decide to postpone the anatomic study. Instead, they decide to carry out “an experiment or two with the Voltaic pile” (157). At first, none of those present really intended to revive the mummy, such a result seem to be by chance: “About one tenth in earnest and nine tenths in jest, we arranged a battery in the Doctor’s study, and conveyed thither the Egyptian” (157).

As Marcia Nichols points out, electricity was the more fashionable scientific mystery:

Electrical demonstrations were also common entertainments, so it is unsurprising that the combination of dissection and electricity would have appeal. The first galvanic experiment on a human cadaver occurred in 1803 when Giovanni Aldini, the nephew of Luigi Galvani, put on a number of spectacular demonstrations before London scientific and aristocratic audiences [...] of his uncle’s theory of animal electricity. (4)

She refers here to Galvani’s theory, that defended the existence of a nervous electrical fluid produced by the brain, conducted by the nerves, and stored in the muscles. What he though was tested by nerve stimulation he called “animal electricity”, a vital force that animated the muscles when electric shocks were applied.

Poe had included before the Voltaic battery in “Loss of Breath,” another satirical piece published in the *Southern Literary Messenger* in 1835, whose breathless narrator receives electric shocks applied by a pharmacist. Harold Beaver has no doubts about how amazed Poe must have felt at the electrical experimentation of his time:

Even electrical and nervous phenomena were linked. That, too, was a tenant of the age [...] No wonder Poe was fascinated. Born midway between the practical triumphs of a Franklin and of an Edison, his aim was to be the comprehensive theorist, and seer, of the electromagnetic age. (VIII)

It had been stated before the importance of verisimilitude for Poe to achieve the most scientific accurate atmosphere in his fiction. Thus, when Count Allamistakeo —since that was the name of the deceased— wakes up,

the reader has been already warned that the mummy still had its organs, which make plausible—at least literary—the awakening; and also that two of those present were experts with good knowledge of the ancient Egyptian phonetic language, both two essential requirements for conversation to take place. In addition, it is clear that not any mummy could be revived, but it would be necessary that the previous embalming had been carried out while alive, in a catatonic or suspended animation state.

Despite this illusion of verisimilitude, Poe does not change at any time the humorous character of the story. What follows is a hilarious debate about mankind progress applied to religion, history and the historian's methods, architecture, politics, even to men's wardrobe. After several demonstrations of the obvious Egyptian superiority in technical matters, the mummy points out that for Progress—with capital P in the original—"it was at one time quite a nuisance, but it never progressed" (169). Concerning democracy and its importance, Allamistakeo explains that it was a system tested by his people and makes fun of it. His words are remarkable because of Poe's wit: "The thing ended, however, in the consolidation of the thirteen states, with some fifteen or twenty others, in the most odious and insupportable despotism that ever was heard of upon the face of the Earth," the name of the tyrant being a certain "Mob" (169). According Nichols, with this statement the narrative "playfully satirizes Jacksonian democracy" (2). Indeed, Poe uses ancient Egypt to deposit on it all the supposed virtues of the past that the democracy of his time claimed to have equalled or even surpassed.

About the debate that compares both civilizations on progress concerns, Harold Beaver concludes:

It is 'all a mistake o'! The very hieroglyphs drive home the spoof, even though this is not a palpable hoax. What opens with a threat of indigestion ends with a nightmare farce of the whole indigestible modern world - its industries, its faith in 'Progress', its democratic hordes. (381)

Poe ends this story by sharing the wonderful possibilities that an experience such as that of Allamistakeo could provide. Not in vain, as Tessa Barber points in her article, "local mummy hunters were often described by travellers as 'resurrection men'" (64). With his view aiming at the future, the narrator determines to return to the Egyptologist place and get himself

embalmed for at least two centuries, like a modern Rip Van Winkle, in a closure that achieves a surprising, slightly comical, absurdly macabre effect.

6. Conclusion

The analysed Edgar Allan Poe examples of short fiction have served to illustrate how different kinds of scientific explorations of his time influenced and inspire his imagination.

“MS. Found in a Bottle” takes the reader to the South Pole to meet the most unexpected explorers, while opening the path for one of the recursive themes in the science fiction genre, that of the alien visitors lost on Earth and searching for return home.

“The Unparalleled Adventure of one Hans Pfaal” presents the imagined space expedition with a barrage of technical information, which verisimilitude was to inaugurate a new kind of literary adventure that would be continued in 1865 with French writer Jules Verne and his book *De la Terre à la Lune (From the Earth to the Moon)* and decades after, with the science fiction sub-genre of the “space opera.”

“Some Words with a Mummy” scoffs at both the galvanic experiments and the archaeological expeditions of his time, presenting an ending that could be the precedent of today’s science fiction trend that deals with the possibility of store the mind in digital format to achieve the same purpose: avoiding, or at least delating death.

Therefore, through the previous pages it has been confirmed that the scientific advances contemporary to the author played a very important role for Poe to choose themes that waked up the interest for the unknown while maintaining a certain mystery that helped him to achieve the effect that he wanted to provoke on the readers.

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