



SCIENCE IN VERNE AND POE THE PYM CASE

JUAN MARCOS BONET SAFONT

In 1897, Jules Verne's novel *An antarctic mystery* was published both in periodical form and as a complete book. It is a continuation of Edgar Allan Poe's story *The narrative of Arthur Gordon Pym of Nantucket* (1838). In this article, we will use the plots of both novels to show the different images of science and technology presented by the two authors. We address both Verne's and Poe's approach to science, as conveyed through their fictional stories. We also discuss how Verne's scientific descriptions are much more extensive than Poe's, a testament to Verne's rational and learned character, as opposed to Poe's more fantastic and imaginative approach to science.

Keywords: Poe, Verne, science and literature, Pym, South Pole.

The works of Edgar Allan Poe (1809-1849) and Jules Gabriel Verne (1828-1905) share an essential feature: the creation of a fantastic tale using scientific knowledge and theories without resorting to magical, supernatural or esoteric elements (so popular in the wonderful Gothic literature of the nineteenth century). They can, therefore, be considered precursors of science fiction literature, where science replaces magic, mysticism and religion. Authors, Poe and Verne in this case, used science as a resource to increase the authenticity of their texts, using scientific language to lend their stories an air of truth. However, they were two authors who understood the scientific endeavour in very different ways. Poe's view of science was very close to the ideals of the German *Naturphilosophie*, characterised by the idea of the unity of matter (nature) and spirit, a holistic metaphysical understanding where everything is connected to everything, a multidisciplinary approach to scientific study (Faivre, 2010, p. 69). Verne, strongly influenced by the scientific ideas of his editor, Jules Hetzel (1814-1886), understood science from a

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positivist philosophical perspective, very close to the ideas of Claude-Henri de Saint-Simon (1760-1825) (Navarro, 2005, p. 108). In this sense, Verne's novels, profoundly influenced by positivism, reveal a blind faith in the scientific method, focusing on the power of reason, experimental science and the study of general laws and specific facts (Evans, 1988, p. 33). This is reflected in the choice of scientific evidence that supports the plot of his novels and provides solid principles of scientific culture for the reader. In Verne's *Voyages extraordinaires* series of novels, we can find, for instance, hot air balloons, giant cannons, chemical products, climatology, spaceships, geological descriptions, futuristic means of transportation, zoology and botany, astronomy and scientific and technical instruments such as barometers and compasses (Nieto-Galan, 2011, p. 76).

Although Poe worked on themes that would inspire Verne later on, as we will see in the next section, the scientific theories in his tales come from fields such as medicine, anthropology and astrology. In general, we find much more speculative science in Poe, closer

Despite his similarities with Jules Verne (on the left, photographed by Nadar circa 1878), Edgar Allan Poe's (on the right) vision of science was characterised by the idea of the unity of matter and spirit, a holistic metaphysical approach where everything is connected to everything.



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In contrast to Poe's novels, Jules Verne's work is deeply influenced by positivism, focusing on the power of reason and faith in the scientific method. This is reflected in his *Extraordinary voyages*, where Verne provides the reader with solid scientific principles.

to the philosophical ideal of Romanticism; science mixed with areas of knowledge that were immediately rejected by positivist scientists, like astrology, religion and several fields from cosmological metaphysics (Cartwright & Brian, 1999, pp. 165–170). In this regard, two of the theories used by Poe to create his tales, either as the central focus of the plot or in a peripheral way, are animal magnetism or mesmerism and phrenology (Falk, 1969, p. 536). There is not a single reference to animal magnetism or phrenology in Verne's works. In fact, Verne's novel *The Carpathian castle* (1892) reveals his intellectual stance towards topics such as spiritualism, ghosts, haunted houses and vampirism, widely used by Poe. In Verne's novel, they are explained through a number of inventions and technical devices, instead of through paranormal, magical or esoteric explanations.

The narrative of Arthur Gordon Pym of Nantucket was published as a book in 1838. It masterfully combines the themes of sea-adventure novels, such as stowaways, mutinies, shipwrecks, cannibalism,



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mysterious islands, savages, etc. with the usual elements of Poe's horror tales, like claustrophobic or unhealthy atmospheres, death, madness and solitude. Jules Verne wrote many marine-themed novels, so his works left few of the usual topics of marine adventure untouched. Particularly in his novel *An Antarctic mystery* (1897), we find a theme that recurs in his work, the conquest and taming of nature by man through science. The novel is, chiefly, an encounter between untouched nature (the southern seas, Antarctica and the South Pole regions) and scientific reason. As a matter of fact, Verne's story retraces Pym's steps and provides a rational explanation to every supernatural, magical or esoteric element in Poe's text. From Verne's perspective, Poe's ending speaks of a natural phenomenon made perfectly understandable by science.



We find Poe's influence on Verne in different texts of the French writer. Thus, in *Five weeks in a balloon* Verne was inspired by *The balloon-hoax* and *The unparalleled adventure of one Hans Pfaall* while in *Around the world in 80 days* we find a plotline used by Poe in the story *Three Sundays in a week*. In the picture, a theatrical poster of a play based upon Verne's works.

«VERNE'S PASSION FOR THE SEA CAN BE SEEN IN MOST OF HIS NOVELS. HE WAS AN EXPERT IN THE SCIENCE OF NAVIGATION, IN THE DIFFERENT TASKS CARRIED OUT ON BOATS OF THE TIME, IN RIGGING AND NAVIGATION TOOLS»

■ POE, INSPIRING VERNE

In 1864, Verne published a long literary study about Poe in *Musée des familles*, in which he summarised and commented upon some of his tales. Poe's influence on Verne can be traced through the analysis of this study, in which Verne explicitly alludes to works that would later prove to be profoundly inspiring for him. Particularly, inspired by the encrypted message in Poe's *The gold-bug* (1843), Verne would use encoded messages more than once in his novels (Navarro, 2005, p. 53). Verne's story *Five weeks in a balloon* (1863) was inspired by two tales by Poe that feature balloon journeys: *The balloon-hoax* (1844) and *The unparalleled adventure of one Hans Pfaall* (1835). However, in the aforementioned literary study, Verne criticises the mechanical and technical details that Poe used in his tale, which, according to Verne, are clearly insufficient to steer a balloon. In the same vein, Verne complains about the tale *The unparalleled adventure of one Hans Pfaall* (1835), saying that Poe could have made the story more credible if he had not violated the most basic laws of physics and chemistry in his text (Lottman, 1996, p. 113). Certainly, we can see the influence Poe had on Verne at the end of *Around the world in 80 days* (1872), where Verne uses one of Poe's plotlines from the short story *Three Sundays in a week* (1841) (Gabriel, 2009, p. 3). However, it is Poe's *The narrative of Arthur Gordon Pym of Nantucket* (1838) that had the greatest impact and influence on Verne, who would use a similar plot (Salabert, 1974, p. 195) in *The survivors of the Chancellor: Diary of J. R. Kazallon, passenger* (1875). In addition, Verne would then write a continuation to Poe's story that would be published in his last years under the title *An Antarctic mystery* (1897). Thus Verne answers his own question, posed in the literary analysis of Poe's work, 28 years later. Presented with the abrupt end of Poe's novel, the French writer asked: «Who will ever take it up again?» (Verne, 1864, p. 24). As we shall see below, the choice of seafaring themes by the authors is neither accidental, nor peripheral.

■ DETAILS ON NAVIGATION AND LIFE ONBOARD IN POE AND VERNE

It is important to note, concerning this last point, that both Poe and Verne had sailing experience and were familiar with life aboard a ship. In the case of Poe, we know that he took long trips in a small sailing boat around the different lakes near each of his places of residence (Meyers, 1991, p. 3). When he was only six, in 1815, Poe embarked on a 34-day-long journey from Virginia to Liverpool with his parents; he returned

to the United States five years later (the return trip was 31 days long). Later, Poe would spend his brief military career on a warship, covering the marine route between Boston and Charleston (Standish, 2006, p. 72). However, personal experience was not the only source Poe used to depict aspects of the seafaring life. He used a maritime handbook entitled *A new universal dictionary of the marine* (1769), from which he would draw information for his works; for example, unusual details such as how to eat a turtle (Tyler, 1992, p. 20).

Verne's passion for the sea can be seen in most of his novels. He was an expert in the science of navigation, in the different tasks carried out on boats of the time, in rigging and navigation tools (Viñas, 2009, p. 24). Verne owned three boats during his life: the *Saint Michel* (from 1868 to 1876), the *Saint Michel II* (from 1876 to 1877) and the *Saint Michel III* (from 1877 to 1886), each bigger, better and more luxurious than the previous one. Before this, in 1867, he had been on a long transatlantic sea journey with his brother, in the US-bound *Great Eastern*.

In his novel, Poe writes about different aspects regarding ships, the compass, the stopwatch, the temperature of air and water, the speed of marine currents, the knowledge of sea winds, the use of sounding lines to check the depth of the water and the speed of the ship, the importance of good distribution and lashing of the cargo, the problem of scurvy during a long journey and extensive measurements of position providing latitude and longitude. Meanwhile, Verne mentions the barometer, the mercury thermometer, the sextant, the marine chronometer, the importance of correct cargo stowage, the use of energy in the sails, latitude and longitude observations, different manoeuvres for different kinds of sails, the use of marine maps and navigation charts, the technique to turn salt water into fresh water through freezing and scurvy as a common disease in a sailing life. In this sense, Poe and Verne are similar in the way they use these details about sea navigation and technical instruments, although Verne uses a far greater number throughout his novel, and they are more detailed and extensive.

Regarding this, two points stand out in both Poe's and Verne's novels: an excessive use of latitude and longitude coordinates to locate the boat and the inclusion of the ice field as an obstacle to overcome and a natural enemy that can frustrate and condemn the entire seafaring expedition. The former reflects their technical sailing expertise, as they acknowledge the importance of the boat's location in reaching the desired destination (as far South as possible, in this case). The latter reflects the author's thorough research on the exploration of



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Both Verne and Poe used descriptions of the wildlife and landscape of Antarctica, although Verne provides much more detail and demonstrates a rigorous scientific ethos, which Poe lacks. However, in the novels by both authors we find references to animals such as penguins (above) or tortoises of the Galápagos Islands (right).

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the South Pole, knowing that most ships had to turn around or had been trapped in the ice floes. However, both aspects are used not only to provide authenticity to the stories, but also as purely narrative resources, since constant information on the ship's latitude and longitude adds dynamism to the tales and gives the impression of the passing of time as the plot evolves, a development that could be difficult in a marine setting. Similarly, the dangers of the ice floes offer the dose of danger and thrill necessary for an adventure novel.

In the next section we will show the scientific topics that, together with aspects of navigation and sailing already discussed, provide such impressive authenticity to both stories.

■ ON GEOGRAPHY, ZOOLOGY, BOTANY AND METEOROLOGY IN PYM

Poe and Verne imagined Antarctica as a landmass with a sea crossing in the middle. This idea helped to diminish controversy about the Antarctic continent, as it allowed for the sightings of land in these latitudes by some sailors and the reports of open sea sailing by others. According to this, it would be possible to cross the continent without sighting the coast due to the fog. In his novel, Poe mentions – but does not describe in depth – zoological features like the turtles in the Galápagos Islands, whales, Humboldt penguins, Port Egmont hens, Cape pigeons, sea swallows, albatrosses, manatees, seals, sea elephants, Arctic bears and cormorants. Verne is much more detailed and extensive in his zoological descriptions of penguins, whales and the other animals and birds in his novel. Both authors agree on some topics to which they devote



several pages, like the alliance for survival between albatrosses and penguins, the description of different kinds of ice floes and the theories about their formation, the description and theories explaining the *aurora borealis*, the explanation of the formation of the ice field around Antarctica, the description and use of the cabbage *Pringlea antiscorbutica* and the environmental concern due to indiscriminate hunting of whales, seals and penguins, which was endangering those species. However, despite these general background similarities, which we discussed before, Verne provides more encyclopaedic details about locations, provides abundant data on geology, zoology, botany, meteorology, the history of their discovery and their socio-political history. In this way, Verne devotes several chapters of his novel to a thorough description of the Kerguelen Islands, the Tristan da Cunha Archipelago, the Sandwich Islands, the Falkland Islands and the South Orkney Islands. This is consistent with the educational and didactic spirit of Verne's *Extraordinary voyages* book series, which, according to his editor, Hetzel, must have summarised all the geographical, geological, physical and astronomical knowledge of modern science (Evans, 1988, p. 26). On the other hand, Poe's story, as we shall illustrate in the following section, lacks that rigorous scientific spirit and sets much wider parameters for scientific speculation and literary fantasy.

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■ FANTASTIC POE 'VS.' RATIONAL VERNE

In *An Antarctic mystery*, Verne refers numerous times to the fantastic and incredible nature of Poe's narration, insisting on the difference in authenticity between both tales, so that Poe's seems to be an imaginative fantasy while Verne's is more fact-based and authentic. In this sense, Verne strives excessively throughout his novel to convince the reader that taking the *The narrative* as fact is little short of madness and that Poe's tale can only be seen as a work of fiction. Some examples of this are: «Edgar Poe's romance was nothing but a fiction» (Verne, 1897, p. 44), «a work of imagination by the most brilliant of our American writers» (Verne, 1897, p. 68).

However, Verne is in a difficult position as a writer: on the one hand, the protagonists in his novel have to accept the authenticity of the Pym story for their own story to develop. On the other hand, Verne does not want to write a narrative with fantastic or unreal elements, unsupported by the science of the time. Thus, his problem is how to justify, invalidate or neutralize all the descriptions Pym wrote in his account, which are, obviously, mere fantasy, unsupported by reason or science. Therefore, in his story, Verne accepts the existence of the two islands imagined by Poe, Bennett Islet and Tsalal Island,

but cannot accept some of the descriptions of these imaginary islands and their environment, such as the extraordinary speed of marine currents, the abnormal temperature of the (extremely hot) water, the strange screen of vapours rising from the horizon, the black colour of the water, the fantastic wildlife of the islands, the strange trees, the weird rocks with an unusual structure, the rivers with waters of rubbery texture, etc.

Therefore, Verne uses different plot devices, some simple, some more elaborate, to invalidate and neutralize all the fantastic content in Poe's story in his own novel. One of the main strategies to explain the fact that the protagonists in the novel do not encounter any of the fantastic elements described by Pym is the allusion to poetic license used by Poe: «Concerning the imaginative contribution of the American author to the work, it was, undoubtedly, the inclusion of all those strange phenomena in the last chapters» (Verne, 1897, p. 195). Another of Verne's strategies is to explain all of Pym's fantastic descriptions as a product of his



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In 1897, Verne publishes *An Antarctic mystery*, a follow-up to Poe's *The narrative of Arthur Gordon Pym of Nantucket*. The writer used several plot strategies to invalidate the fantastic elements found in Poe's story, like justifying some of Pym's descriptions as the result of hallucinations caused by extreme environmental conditions and poor health.

feverish imagination and hallucinations caused by extreme weather conditions and his frail health: «one of those hallucinations which must have troubled the mind of Arthur Pym» (Verne, 1897, p. 288).

Finally, Verne reveals that the gigantic white human figure found by Pym at the end of his narrative is an ice mound with a human form. This mound, which is an enormous magnet, exerts an incredibly strong attraction on every metal object within a large radius. Pym's corpse is found there, dragged to the place by the magnetic force of attraction on the rifle slung on his back. Therefore, Verne finally concludes: «These were physical facts which we had just witnessed, and not imaginary phenomena» (Verne, 1897, p. 342).

CONCLUSIONS

We have seen that Poe's and Verne's vision of science are very different; for the former it is closer to the philosophical ideal of Romanticism; for Verne, science is understood within the parameters of scientism and positivism. However, both authors used science as a device to increase the authenticity of a text, relying on scientific language to boost the credibility of the story.

We have noted a deeper scientific analysis, more detail and richer descriptions in Verne's text compared with that of Poe, in terms of the educational and illustrative aspects of Verne's *Extraordinary voyages series*. In this regard it is clear that Verne had engaged in more research than Poe on the historical review of the South Pole exploration, on the geographical, zoological, botanical and meteorological descriptions, and on different aspects of navigation and seafaring life.

Finally, we pointed out Verne's issues with fantastic or irrational chapters in Poe's novel, and how the French author works to invalidate, neutralise or explain them in his narrative, for which he used the strategies discussed above. We could very well say that Verne solves the Pym enigma in a scientific way. 🕒

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Juan Marcos Bonet Safont. MA in History of Science and Scientific Communication, working in the López Piñero Institute of the University of Valencia (Spain). He is currently doing his doctoral studies about Historical and Social Studies on Science, Medicine and Communication at the University of Valencia, with a thesis concerning the relationship between fictional literature and scientific knowledge.