

SCIENTIFIC DISCOURSE IN THE WORKS OF EDGAR ALLAN POE

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Abstract | The birth of science fiction takes place along the 19th century, following the progressive settlement of scientific discourse. This allows the development of the novum, a concept established by Suvin. According to this concept, those elements alien to the expectations of reality shared by writer and reader are validated by the scientific discourse, and therefore become plausible. Even though Edgar Allan Poe uses certain motives that will afterwards configure science fiction, his distrust for scientific discourse does not allow us to consider him a pioneer in the genre. In his texts he proposes a synthesis between Reason and Imagination inspired by Pascal, and recurrently satirizes the gullibility of those that accept as true any event that poorly resembles scientism.

Keywords | Poe | Science fiction | Novum | Reason | Scientific speech.

On one occasion Jospeph Engelberger, father of the industrial robot, was asked about the exact definition of the concept robot. However, not even a person of his intelligence was able to give a satisfactory answer. In face of the astonishment of the questioner, Engelberger countered with a quote that is found in all treaties on robotics as if it was the matter of a spinal cord: "I don't know how to define what a robot is, but I can identify one when I see it".

With the genre popularly known as science fiction we find ourselves in a similar situation. Intuitively, anyone seems capable of identifying a piece of work that belongs to the genre when in front of it, but on the other hand finds it much more complicated to find a definition that satisfies the broad thematic melting pot that characterizes science fiction. And it is precisely this multiplicity in the content of the genre that gives way to a profusion of theories that develop, in turn, their own origins and genealogies. Thus, the beginning of science fiction varies according to the conceptualization that satisfies us the most. If we decide to go with the utopian speculation, we can consider *Utopia* (1516) by Thomas More one of the precedents of the genre, in the same way as is we highlight the encounter with the other and travel to exotic places, we can draw up a genealogical trajectory that passes A True Story (2nd century D.C.) by Lucian de Samosata and The Book of Wonders (13th century D.C.) by Marco Polo. On the other hand, if we opt for a more political and satirical focus, we can come to see an antecedent in Gulliver's Travels (1727) by Jonathan Swift¹.

Although these motives influence the birth of science fiction. attributing them some kind of forefather status is to take the genre too lightly. There is no doubt that science fiction feeds on this collection in themes and motives, but it is certain that it does not do so exclusively. In other genres like the marvelous and fantastic descriptions of unknown territories and encounters with the other are also abundant, in the same way that the gothic also can be considered a type of political satire. As a result, we must ask ourselves for that which defines science fiction at the margin of the motives that shape it.

In this respect, the influent theorist of science fiction Darko Suvin has sketched a definition that should be analyzed for its critical repercussions. Therefore, to Suvin science fiction is

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1 | LUCKHURST, Roger (2005): Science Fiction, Cambridge, Polity Press, 15-16.

The effect of alienation is produced by the eruption of a divergent element in relation to the empirical expectations of the writer. Suvin calls this differential element *novum*, a category which includes everything from genetic mutations to space and time travel. But *novum* must be legitimated by a scientific discourse with which it establishes a dialectic discussion. Without this tension, the text would fall under the category of genres like the marvelous or the fantastic³. Through this scientific patina the science fiction writer constructs the new empirical frame that, in contrast to the fantastic, does not intend to exceed the limits of the expectations of reality but rather widen them through a fictionalized scientific discourse.

So, although science fiction and fantasy are a priori antonymic genres, they require the same cultural conditions to shape themselves. The scientific revolution, beginning in the 17th century but refined and popularized throughout the 19th, substitutes a frame of reference that includes the supernatural by another, whose matrix is constituted by the scientific method and that, as such, marginalizes all kinds of abnormality. In this way, the fantastic is found written in our reality at the same time that it infringes upon it⁴. Its reason for being is located in the margins of the expectations generated by scientific discourse. On the other hand, science fiction amplifies the generative matrix of reality to understand phenomenon that, in a different manner, seem anomalous or supernatural. In science fiction the fantastic is hyperrationalized.

As such, we can affirm that one of the conditions for the genesis of the science fiction genre is the confidence in scientific discourse, which necessarily implies that aforementioned hopes are deposited in the progress of science and technology. It is notorious that in dystopias the presumed improvements of scientific progress and the uses they allow themselves for are called into question. In 1984 (1948) George Orwell warns about the use of technology with totalitarian motives, and in *The Time Machine* (1895) by Herbert George Wells, one of the canonical fathers of science fiction, presents a discouraging evolution of humanity provoked by complacent use of scientific benefits. But to distrust science does not necessarily imply contemplating scientific discourse with the same degree of distrust. In *The Time Machine*, Wells argues

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- 2 | SUVIN, Darko (1979): Metamorphoses of Science Fiction: On the Poetics and History of a Literary Genre, New Haven, Yale University Press, 8-9.
- 3 | ROBERTS, Adam (2000): Science Fiction, Londres, Routledge, 8.
- 4 | ROAS, David (2001): "La amenaza de lo fantástico", D. Roas (ed.), *Teorías de lo fantástico*, Madrid, Arco/Libros, 25.

8 | TATON, René (1973): "Condiciones del progreso científico en Europa occidental", R. Taton (ed.), Historia General de las ciencias La ciencia contemporánea I. El siglo XIX, Barcelona, Destino, 692.

that the use of science and technology as tools for domination can bring on the destruction of humanity. One can blame his criticism for being more political than scientific, but in either case Wells does not doubt scientific discourse. It is precisely a fabulation about time considered a fourth dimension that permits the protagonist of the story to travel in time. Obviously, both Wells and the reader know that they are within the realms of fiction, but the trust of both in scientific discourse is what makes possible that such inventions become varnished with a patina of probability. According to the aforementioned, we can affirm that the faith in scientific discourse is the condition sine gua non for the genesis of science fiction.

In this manner, we cannot trace any genealogy of science fiction that goes back much further than the 19th century. It is certain that scientific discourse first shows up during the 17th century, but this is not unanimously accepted until the 19th century. Because of this, some of the critics that have wondered about the origins of science fiction coincide with the penetration of scientific language in society⁵ or the institutions for education of scientists and technicians of low or medium qualifications⁶ are some of the necessary conditions for the emergence of science fiction. The 19th century subject does not only contemplate how his daily life suffers constant changes provoked by a development that seems unstoppable and impersonal but, also, his mental structures are affected, explicitly or implicitly, by the propagation of scientific discourse. The concepts penetrate common language and little by little the proper method of science modifies the horizon of expectations as well as former notions of the real and the possible. Science and progress are even fashionable, a sign of distinction. All types of deceits are consigned to the folkloric environment. proper to scarcely cultured people. The 19th century man is projected forward, and science is his new faith. The industrial revolution may not have had too much science, but undoubtedly the men that brought it about were full of scientific spirit⁷.

But as all change of cultural paradigms the progression of scientific discourse was not unanimous nor complete or exclusive. Voltaire's Watchmaker God, that divinity separated from the world, permits the combination of science and religious sentiment, but throughout the 19th century, Christianity and its associated world views still enjoy certain power. In early 19th century Great Britain, nerve center of industrial development, the Royal Society and universities of Oxford and Cambridge were strongly influenced by aristocratic and ecclesiastical personalities convinced that scientific discourse implied materialism and atheism8. Around the

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- "The Origins of Science Fiction", D. Seed (ed.), A companion to Science Fiction, Malden, Blackwell, 28.
- 6 | LUCKHURST, Roger, op. cit.. 16-17.
- 7 | BERNAL, John Desmond (1989): Historia social de la ciencia, Barcelona, Península, volumen I. 405.

same time, the United States of America did not dispose neither of an own industry nor scientific development by decision of the colonial English law. In fact, its industrial capacity would not bloom until the end of the 19th century and the pure sciences would remain lethargic until shortly after the Civil War⁹.

In front of that panorama it seems frankly complicated to conceive something similar to science fiction further back than the 19th century. Frankenstein or the Modern Prometheus (1818) by Mary Shelley approaches what would later be science fiction, although a greater scientific development is needed and a more profound penetration of science in society until the appearance of the works of Wells and Verne, from who we can affirm as being some of the indisputable forefathers of the genre. Nonetheless, there are many critics that insist in pushing back the birth of science fiction, and although those who distance themselves from the 19th century put forward arguments of little weight, it results more complex contradicting those who position themselves at the beginning of the century. Although without the popularity it would later enjoy. scientific discourse is habitual within cultured 19th century spheres, and many writers use concepts and ideas from science, even though it might be in a rudimentary form. Edgar Allen Poe is one of them, and not few critics have insisted in attributing him with not only the title of master in the fantastic but also of the forefather of the detective genre and science fiction.

Burton Pollin sees in Poe an antecedent and inspiration of the genre using to sustain that affirmation the criteria established by Hugo Gernsback to identify science fiction: 1) the use of scientific data, 2) stories of travels to remote places within and outside of the Earth, 3) richness in detail in the description of past or future times and 4) considerations about technology in future contingents. Burton Pollin adds up to thirty-nine stories hypothetically pertaining to the science fiction genre, although in many of them it has a minor role. Francisco Javier del Castillo does not doubt recognizing a collection of stories to call scientific anticipation in the works of Poe either, as well as a list of motives that in a recurrent form are found in science fiction: extraordinary experiences, travel narratives, political satire or comical vein¹⁰.

In "The Facts in the Case of M. Valdemar", one of the most famous fantastic stories by Poe, he offers us a meticulous and cold description of a fictitious experiment in which a terminally ill man with tuberculosis is hypnotized. One of the principle objectives of the story is to achieve an effect of verisimilitude in the reader, an

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9 | COHEN, I. Bernard (1973): "La vida científica en los Estados Unidos en el siglo XIX", R. Taton (ed.), *Historia General de las ciencias. La ciencia contemporánea I. El siglo XIX*, Barcelona, Destino, 704.

10 | CASTILLO, Francisco Javier (1991): "Ciencia ficción y anticipación científica en la obra de Edgard Allan Poe", A. Sánchez Macarro (ed.), Studies in American Literature: Essays in Honor of Enrique García Díez, Valencia, Universitat de València, 40.

objective which Poe goes to a lot of trouble in the exposition of the physiology of the subject subjugated to the experiment.

The Leith lung had been for eighteen months in a semiosseous or cartilaginous state, and was, of course, entirely useless for all purpouses of vitality. The right, in its upper portion, was also partially, if not thoroughly, ossified, while the lower region was merely a mass of purulent tubercles, running one into another.¹¹

In relation to the reception of the story, "The Facts in the Case of M. Valdemar" not only achieved the expected effect of verisimilitude but was taken as a journalistic description of an event which, although strange, was indisputably real. The story was published in the American Magazine but was reviewed and summarized in the *Morning Post*, which positioned itself against the true content that it supposedly contained. According to the editor of the Morning Post, although marvelous on an aesthetic level, they had discovered a variety of irregularities in the affirmations that composed the story, for which they decided to publish a summary although without attributing the hypothesis of truth to the explained case. Edgar Allan Poe himself takes up the polemic in the first entry of his Marginalia, where he also reflects over the naivety of the magazine Record according to the poor arguments that argue in favor of the true content of the story. Poe, it goes without saying, went against both positions. He accuses the Morning Post of boasting about knowledge on a pathology that they in reality don't have, and Record of stupidity for believing the hoax of Valdemar and trying to prove the truth of the text by arguing that one only need to take the "internal evidence" as irrespirable proof of the told truth¹².

We here find two contradictory positions although certainly symptomatic of Poe's character. On one hand, interest in logic and reason, as showed in stories such as "The Gold Bug" or those that form the cycle led by the gentleman Auguste Dupin. These stories are written with great precision and with the intent of producing in the reader, not only a determined effect of verisimilitude, but also to function mediating an internal logic. Not in vain, Poe referred to these types of narrations with the name "tales of ratiocination", with which he evidences an instrumental and non-essentialist use of the concept of Reason.

In certain aspects, we can put his stories of reason on a level with those which intend to create the same effect, but through the use of technical jargon taken from diverse disciplines, whether those

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11 | POE, Edgar Allan (1976): "The Facts in the case of M. Valdemar", H. Beaver (ed.), *The Science Fiction of Edgar Allan Poe*, Penguin Books, London, 196.

12 | POE, Edgar Allan (1973): Ensayos y críticas, Madrid, Alianza, 243-244.

NOTES (1972): **Buenos** Aires.

be mechanics, physics or medicine, to name three examples. It is evident that Poe was enthusiastic about all kinds of riddles and logical challenges. He enjoyed challenging his readers of Alexander's Messenger to send him cryptograms with intricate solutions; or dissolving mysteries like the one in "Maelzel's Chess Player". These stories and logical exercises do not depend on the exterior truth if not on a combination of "internal evidence" that determine their construction. And this is, precisely, where the stories of reason and those that depend on scientific discourse part on irreconcilable paths according to Poe's criteria.

The Bostonian infuriates in face of the arguments in Record not for their buying the trick presented in "The Facts in the Case of M. Valdemar", but for their trying to justify its true nature. We can suppose that Poe would have become thrilled with a praise of the skilled use of medical concepts and procedures, but what he could not tolerate was the intentional justification of the truthfulness of the case through the surprising argument of "internal evidence". Because, such as Vincent Buranelli defends in his essay on Poe:

> Las historias sobre crímenes acontecen dentro de un marco de condiciones minuciosamente establecidas y convenidas, tanto por el escritor como por el lector, y la verosimilitud existe únicamente cuando esas condiciones se cumplen. [...] En el caso de la criptografía, las reglas son objetivas y escapan a todo control, ya que se dispone de todos los hechos. En este caso, la intuición de Poe tiene un campo de acción adecuado, trabajo con eficiencia y arriba a soluciones irrecusables.¹³

The stories of reason and the cryptographic enigmas are supported by a type of instrumental logic that can be justified by the "internal evidence", but "The Facts in the Case of M. Valdemar" to a great extent depends on the correspondence established with the medical aspect of scientific discourse. What is then, that which Poe intends with the stories similar to "The Facts in the Case of M. Valdemar"? Seen from the previous case, we can affirm that in these texts what Poe follows is precisely to call into question scientific discourse through the presentation of a better reality that surpasses it, mechanism that defines, precisely, the fantastic according to what we have presented. We know that Poe anxiously devoured magazines about all types of scientific novelties, although the majority of the cited writers are second rate, more suggestive but less compromising¹⁴. Proof of this knowledge is found in the complexity of the technical mechanisms and terminology found in stories such as "The Balloon Hoax" or "The Unparalleled Adventure of One Hans Pfaall", and also in the profusion of scientific concepts in his controversial poem "Eureka".

13 I BURANELLI. Vincent Edgar Allan Poe, Compañía General Fabril Editora, 59.

14 | CORTÁZAR, Julio (1973): "El poeta, el narrador y el crítico". E. Poe. Ensavos v críticas, Madrid, Alianza, 22.

But it is also very certain that in Poe the romantic heritage is still present, as his treaty *The Poetic Principle* suggests, where he defends the auto-justification of the work of art, or the longing for immortality and transcendent Beauty that is consubstantial to man¹⁵. Even in a poem with the eloquent title "To Science", he laments the marginalization of the imaginative spirit provoked by scientific discourse:

Hast thou not torn the Naiad from her flood, The Elfin from the green grass, and from me The summer dream beneath the tamarind tree?¹⁶

However, Poe, as we have already seen, does not entirely reject the knowledge produced by scientific discourse. Because Poe does not put into doubt the validity of scientific knowledge but rather questions whether it can be conceived as an explanatory omni-comprehensive matrix. For him there is one principle rector that puts together the three mental faculties which he puts forward in The Poetic Principle: the intellect, taste and moral sense. Influenced by the synthesis of reason and sentiment of Pascal he discovers that the common element is the heart, which he refers to as *intuition*. This intuition is a subconscious process that underlies in each of the three mental faculties and allows us to find a unifying principle in the phenomenon particular to each one of them¹⁷. In this way, we can conclude that intuition is a process of irrational roots that allows us to analyze the transpired facts in the three mental dimensions, although this does not mean we can achieve a method that unifies these three environments.

This is the base from which Poe questions the validity of the scientific method as an omni-comprehensive method, although in reality what he intends is to deny the validity of any attempt of those characteristics. Poe is not an anti-rationalist romantic, nor does he adhere to the totalizing eagerness of scientific discourse. In his stories we find clearly fantastic elements in the previously mentioned sense, such as events that occur on the margin of the expectations of reality prevailing at the time. But at the same time, he wrote tales in which a paradigm change that distances itself substantially from gothic tradition is present. In these, horrific elements are no longer ghosts or enchanted castles but fatalities proper to an era in which the dominions of Reason begin to impregnate important aspects of society. Insanity, altered states of mind, selection, psychotic outbreaks, neurosis are recurrent in this new type of horror and fantastic tale, and however much those critics who want to see in them a testimony of the agitated state of mind of the author insist, we believe that its true value

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15 | POE, Edgar Allan (1973), op. cit., 88.

16 | POE, Edgar Allan (2000): Poesía completa, Hiperión, Madrid. 76.

17 | BURANELLI, Vincent, op. cit., 53-54.

stems from the obsession with an illustrated paradigm of horror and the fantastic that renews and transmutes the gothic tradition.

Considering this, how can we fit the tales in which Poe tries to produce a verisimilitude through scientific jargon into this world view? Let's take some of the most prominent examples. Following with "The Facts in the Case of M. Valdemar", we detect that the first part of the story develops a frame in which scientific observation is applied scrupulously. The details and technical procedures are meticulous and there are always multiple observers who analyze the evolution of the experiment. It is worth mentioning the importance of this last aspect since it allows us to clear up the doubts about an event narrated from the subjective point of an individual, procedure broadly used by Poe, who valued the anomalous states of mind to question the truthfulness of the story.

However, the event with which he finalizes the story escapes the previous methodological rigor. The actual object of the study, Mr. Valdemar, is seized with a series of physical, chaotic convulsions without any precedent. In the end, his body decomposes with astonishing speed, not without first begging the people present to hypnotize him again. For the reader it is clear that Mr. Valdemar struggles between the world of the dead and that of the living, a situation that only continues if his state of hypnosis persists. But this event disconcerts the observers of the experiment who are unable to maintain the object of the study captive through the previous scientific methodology. Although they noticed the development of the case of Mr. Valdemar through science before, the final episode obliges them to admit that

I was thoroughly unnerved, and for an instant remained undecided what to do. At first I made an endeavor to re-compose the patient; but, failing in this through total abeyance of the will, I retraced my steps and as earnestly struggled to awaken him. In his attempt I soon saw that I should be successful – or at least I soon fancied that my success would be complete – and I am sure that all in the room were prepared to see the patient awaken.

For what really occurred, however, it is quite impossible that any human being could be prepared.¹⁸

From this perspective, the final episode is situated in the margins of the rational and scientific discourse that characterizes the development of the story. In the end, science is unable to give a satisfactory explanation of Valdemar's situation. Therefore, we can affirm that "The Facts in the Case of M. Valdemar" is a fantastic story in which Poe intends to question the totalizing status of scientific discourse through the narration of a phenomenon that exceeds the

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18 | POE, Edgar Allan (1976), op. cit., 203.

expectations of reality created by science. In "Mellonta Tauta", Poe creates a fictitious epistolary corpus that supposedly was found in a bottled dragged by the ocean streams. The speaker of these letters is Pundita, an earthling from 2848, who tries to overcome the discomfort provoked by travelling in a hot air balloon writing a collection of reflections for one of her friends. In the letters, Pundita goes over some of the characteristics of the new world (contact with moon dwellers, travel in hot air balloons, government directed by an Emperor, etc.) and makes a speech about various matters. One of the criticisms is directed towards democratic and republican systems, one of the central issues for the aristocrat Edgar Allan Poe. According to Pundita, the old democracy suffered a collapse when the mob committed a coup d'état sinking all of human civilization, although this was recovered learning from the great error that democratic government supposes.

In "Mellonta Tauta" diverse elements converge that, according to Gernsback, allow for the inclusion of the story in the science fiction genre. The narration is placed in a future of which we are given information, although it is concise due to the brevity of the story. We can also track some care in the detailed explanations of the functions and composition of mechanical devices, in this case the balloon Skylark, although it should be pointed out that these are some of the most naïve we can find in Poe's work. However, one of the assumptions of past eras that Pundita makes sure to refute is the exclusive validity of scientific discourse. Firstly she satirizes the deductive and inductive principles proposed by Aristotle and Francis Bacon, respectively, thinkers who she also ridicules by changing their names. Poe does his best to insult the concept of the axiom proposed by Aristotle and taken up by Mill, a theme which recurs conscientiously in "Eureka". And the other, no less important point, the traveler praises Kepler, not as a man of science, but as a man of imagination.

Newton owed it [the laws of Gravitation] to Kepler. Kepler admitted that his three laws were guessed at – these three laws of all laws which led the great Inglitch mathematician to his principle, the basis of all physical principle – to go behind which we must enter the Kingdom of Metaphysics. Kepler guessed – that is to say, imagined.¹⁹

Pundita's speech is not unselfish, as through it she intends to stress the sublime of her present in relation to a past in which scientific discourse was deprived of imagination and constrained by the Aristotelian and Baconian ways. The prosperity of Pundita's times is the result of the acceptation of *consistency* at the expense of *truth*, as well as the stealing investigative research carried out

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19 | POE, Edgar Allan (1976): "Mellonta Tauta", H. Beaver (ed.), *The Science Fiction of Edgar Allan Poe*, Penguin Books, London, 316.

by *moles*, to be given to men with ardent imagination.

Therefore, in "Mellonta Tauta" we do find some of the motives particular to science fiction, but scientific discourse is directly questioned. Poe attacks the two pillars that constitute the deductive and inductive method to suggest, instead, a syncretic procedure that combines Reason and imagination. In fact, this synthesis is one of the principle motors of the essay-like poem "Eureka", the prime example of Poe's world view.

In "The Unparalleled Adventure of One Hans Pfaall" the protagonist runs away from his debts by travelling to the moon with an ingenuous mechanism similar to an aerostatic balloon. The story is composed of multiple disadvantages which Hans Pfaall must encounter to lead his company into harbor, that is, vast and longwinded passages in which obstacles and technical problems that the mechanic device used for the trip suffers are detailed. But what most interests us in this case is its satirical content and the final point, where Poe boasts of his lunar trip in front of those presented in previous stories. Cortázar already warned that in Poe, satire always implies a certain degree of contempt²⁰, so that if we take into account that this is almost always present in the scientific anticipations we should analyze its scientific use with suspicion.

In this story Poe's mania for verisimilitude is manifested again. The extensive final point is dedicated to presenting all scientific mistakes which some of the previous narrations of lunar travels have committed. Such carefulness in the scientific correction can shock us if we intend to defend that Poe is against scientific discourse, but we have already made clear that the Bostonian's objections are to the totalizing and omni-comprehensive eagerness and not of scientific discourse in an instrumental sense. However, such as happens in "The Facts in the Case of M. Valdemar" "Von Kempelen and His Discovery" or "The Balloon Hoax", Poe intends to play with the credibility of an average spectator towards explanations that barely resemble science. In these cases the meaning of the story is inseparable from its intent of reception. Here the verisimilitude effect is used to poke fun at those gullible people who are ready to assume as true everything disguised in an imitation of scientific discourse.

In science fiction, author and reader are positioned on the same level. Both know the fictional character of the text that they are in front of, although they try to manage scientific discourse to expand the generative matrix of reality of fantastic events seem believable.

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20 | CORTÁZAR, Julio, op. cit., 20.

But, in Poe's stories the author tries to position himself above the reader. It seems the latter does have a share in the *novum*, but the writer is not open to the same game since he tries to trick the reader, uncover his gullibility and the delicate constitution of scientific discourse in which all of 19th century society starts to believe blindly.

In summary, there is no doubt that the in the works of Edgar Allan Poe some motives and elements that characterize the science fiction genre come together. However, what Poe intends in these stories is to put into question scientific discourse as an explanatory matrix valid for all phenomenon in the universe. Located in an interstitial position that situates him between romanticism and the budding display of scientific discourse, Poe defends a synthesis between Reason and Imagination drawing on the works of Pascal. As a result, in the mentioned stories, the use of scientific terminology responds to a stratagem notably different from science fiction, where the same resource is used to expand the expectations of reality of the reader. Poe either uses scientific discourse to poke fun at the credibility of the reader or to attack the omni-comprehensive eagerness of science, in which case his stories are located in the sphere of the fantastic.

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