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**EDGAR ALLAN POE AND SCIENCE:  
UNRAVELING THE PLOT OF THE UNIVERSE**

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Arts  
at Virginia Commonwealth University.

by

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## ACKNOWLEDGEMENT

My interest in Poe studies began when my family hosted Aurora Dallolio, an Italian high-school exchange student from Bologna, Italy. After getting settled in Richmond, she wanted to visit the Edgar Allan Poe Museum. Though I did not know much about that facility, Aurora said that it was very well known in Italy. I was inspired by her enthusiasm about Poe and by the expertise of the museum staff, as they showed us fascinating exhibits about one of America's most original writers. Not long after that memorable museum visit, I retired from a thirty-year career in education, and enrolled as a VCU graduate student in English Literature. To complement my studies, I became a tour guide and board member for the Poe Museum. I want to thank the museum's Curator, Chris Semtner, for providing me with much valuable insight and access to many Poe materials during my VCU studies.

In looking back over my last three years as a retiree-student, I can say that every class I took or assisted in (I was an Instructional Assistant in the VCU World Studies Program) was a valuable learning experience. My first two classes were taught by Joshua Eckhardt (my Thesis Chair) and Marcel Cornis-Pope (my Literary Mentor). Dr. Eckhardt challenged me to locate a rare text and then to write a report on the most esoteric book I found at the Poe Museum—*Eureka: A Prose Poem*. I also appreciate that he got me started on my research topic, and that he *stepped in* to serve as my *closer* when my thesis needed to go into *extra-innings*. I don't know if I will ever be able to express enough thanks to Dr. Marcel Cornis-Pope for the guidance he provided to me on the finer points of academic writing and on the interpretation of literature from many points of view. He also showed an almost "abnormal" interest in my research topic, which he called, "the slippery slope" of Poe's writing.

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I am also very appreciative of my three daughters, Tara, Anna, and Leah. They encouraged me to become involved in my *Encore* school experience. They have also been inspiring personal and professional role models for me. Finally, I would like to thank my wife, Hainah, for her patience and support. She has endured many evenings alone, without complaining, during my three years of evening classes and late night writing. She recently reminded me, "I made several quilts while you were writing this thesis." I hope that I have stitched together a work here that reflects the quality of her artistry.

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## ABSTRACT

### EDGAR ALLAN POE AND SCIENCE: UNRAVELING THE PLOT OF THE UNIVERSE

By Murray Ellison, M.A.

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Arts at  
Virginia Commonwealth University

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Edgar Allan Poe (1809-49) lived at the perfect time to write about several of the most dramatic technological developments ever recorded in history. Up until the nineteenth century, professional scientists were almost the exclusive agents for writing about science. However, during this period, non-professional writers also emerged as important conveyors of popular science news to the public. Though Poe was a lay writer, his popular writing conveyed several of the most important new discoveries of the Industrial Age. He also projected his views about how nineteenth-century technologies might impact civilizations of the future. Poe's writing offers a key example of a widespread movement of thinkers who attempted to mediate the tensions and debates that were taking place in his lifetime between those who perceived and described the world from either the "Mechanical" or the "Romantic" approach.

This study explores the ways that Poe wrote about science in poetry, non-fiction, and fiction. I argue that a review of his earlier science writing helps to unlock several of the enigmatic writings of his culminating work, *Eureka: A Prose Poem*. The final chapter of this thesis concludes with an in-depth discussion of *Eureka*. In *Eureka*, Poe proposes that man's literary works are imperfect. However, he contends that the Creator has written and executed a perfect "Plot of the Universe." Poe attempts to unravel several of its deepest mysteries in a multi-genre work of poetry, history, science, and metaphysics. I argue that modern scholars of literature and science history can gain a clearer view of the ways that the nineteenth-century public received and understood information about science by exploring Poe's science writing than has been provided in previous historical or literary scholarship.

## CHAPTER I—INTRODUCTION

*How should he love thee? Or deem thee wise...To seek for treasure in the jeweled skies ~ Edgar Allan Poe (Complete Works VII 22).*

Edgar Allan Poe (1809-49) lived at the perfect time to write about the most dramatic technological developments recorded in history. In 1898, renowned scientist Sir Alfred Russell Wallace called the previous one-hundred year period, “The Wonderful Century,” because of its “marvelous inventions and discoveries.” He regarded these advancements as “immensely superior to anything that had been developed up until that time” (1). Industrial Age technologies such as electricity, telegraphic communications, railroads, photography, astronomy, and high-speed printing presses dramatically altered the culture and lifestyles of the American public in ways that people could never have imagined. In 1903, Sir Norman Lockyear, President of the British Science Association echoed Wallace’s remarks when he stated that “The nineteenth century will ever be known as the one which the influence of science was first fully realized in western countries” (439).

As Bernard Lightman argues, “Scholars have barely scratched the surface in their attempts to understand the popularization of Victorian science.” He asserts that we still need to know more about how science became popular during the nineteenth century. Popularizers brought news of science to the public in journals, encyclopedias, newspapers, exhibitions, and public lectures (206). He writes that “As scientists became more professionalized, they began to pursue specialized research and the need then arose for non-professionals who could convey the broader significance of many new discoveries to a rapidly growing Victorian reading public” (187). Lightman also proposes that “popularizers may have been more important than scientists like Huxley or Tyndall in shaping the understanding... of the reading

public.” He concludes that “Their success as popularizers was partially due to their ability to present the huge mass of scientific fact in the form of compelling stories, parables, and lessons fraught with cosmic significance” (188). Paul Faylor adds that there was two-way traffic between science and science writers in the nineteenth century and suggests that “The inventions of professional scientists not only helped to shape science fiction, but in many ways were shaped by it” (qtd. in Lightman 257).

When Poe started writing professionally, the literacy rate had already been dramatically rising in the United States. Many people were able to read about the newly emerging technologies in newspapers, journals, and science compendiums. Residents could also travel to distant parts of the country by rail and communicate with almost anyone almost anyone in the United States via the Telegraph. Through the development of the Daguerreotype (an early prototype of photography), family members could obtain realistic images of loved ones to keep for years. The introduction of a new class of highly powerful telescopes demonstrated that the Universe is much larger than anyone had previously imagined. Even the most avid readers of Edgar Allan Poe’s poems and imaginative stories may have overlooked the fact that his works provided informative accounts of how several of these technological changes were introduced to nineteenth-century readers and how they affected the public. Thus, I argue that Poe was one of the most important science popularizers of the nineteenth century. He brought important science news and stories to the public through each of his major writing genres, i.e., poetry, non-fiction, and fiction. The public’s enthusiasm to learn about science influenced his decision to write about the scientific topics that emerged during his lifetime. Also, his ability to write about science in the popular vernacular inspired the public’s continued interest in science. The present study of Poe’s works provides a

valuable lens into the ways that the nineteenth-century public received and understood news about science that has not been available previously in the fields of literature or science history. I will show how Poe's texts staged a polarized debate, often presenting both sides of hotly contested issues such as, the reliability of vision in determining observed phenomena; the relative value of rationality versus creativity; and the long-term implications of technological development. An overview of English romanticism and of treatments of perception in materialist natural history will set the stage for a discussion of Poe's reporting of the news about his nineteenth-century science, his projections about the future implications scientific developments, and his engineering of derivative and original cosmological theories.

During Poe's lifetime, there was a need for a new class of writers who could report on the newly emerging topics and issues of science in imaginative ways that the public could understand. Science writers needed to stimulate interest for the continued study of new subjects. The newly emerging class of professional scientists was neither equipped nor interested in communicating with a public that had largely embraced popular newspapers and journals as a primary source for news, technology, and literature. Lightman refers to those writers who did attempt to communicate to the public about science as the "popularizers of science." He suggests that "Their success... was partially due to their ability to present the huge mass of scientific fact in the form of compelling stories." (188). Tresch asserts that "Poe's writings force us to reconsider the relationship between science and literature" ("Potent Magic," 275-276). Peter Swirski adds that Poe's "writing may be a suitable barometer of the role that science and philosophy had on nineteenth-century society." He maintains that Poe "threw literary bridges over to the scientific mainland" (x-xi). Those bridges are just as important in helping modern scholars to understand how scientific changes

affected society as they are in helping us to understand how literature changed during the nineteenth century to reflect scientific developments. Therefore, it is essential to our present understanding of nineteenth-century culture to explore the works of Edgar Allan Poe, who skillfully commented on many important popular scientific trends of his lifetime.

During the nineteenth century, most writers viewed and described science from either a “Mechanical,” or a “Romantic” point of view. The proponents of the “Mechanistic” approach often praised the benefits of science, whereas the “Romantics” expressed a more skeptical view, pointing out its disadvantages. During much of Poe’s career, he was ambivalent about the value of science. The present study reveals that, through his writing, he attempted to resolve his uncertainties by mediating the debates between the “Romantics” and “Mechanics.” In *The Romantic Machine*, Tresch writes that the ideas of “both romanticism and mechanism have defined the modern world... Creators, dreamers, and nature lovers have confronted or run from – hard-headed realists and rationalizers.” The “Romantics” objected to “the rationalism of the Enlightenment and as a protest against the emergence of the cold and fragmented scientific order.” Tresch’s chart illustrates the differences between these two disparate points of view about the world. In summary, Tresch’s chart shows that the “Romantics” see the world through “passion” and “emotion,” and their writing is often “nostalgic.” They believe in individual “freedom,” and write about “spirit,” “morality,” and “nature,” and embrace the world holistically. To the “Romantics,” artistic vision represents a higher form of *truth* than just pure description of observed phenomena. Those who advocate for the “Mechanical” approach see the world through “reason.” They describe quantifiable subjects and focus on the “synthesis” of the observed phenomena. They consider that events are shaped by “determinism” (natural causes). Their writing often looks into trends of the

future (2-3). Only ideas that they can describe, classify, and replicate in the laboratory are considered valid. Tresch concludes, “The intersection of romanticism and technology in this period could fruitfully be explored by focusing on writers like Edgar Allan Poe” (7).

John Limon argues that Poe was one of the first American writers who was important to the fields both of literature and science because he engaged in literary mediation, or “negotiation with science.” Limon notes that Poe’s works provide abundant examples that he anticipated or forecasted several future developments in technology, e.g., exploration of the Poles, astronomy, physics, space travel, photography, electronic communications, and the forensic sciences. In addition, he wrote about these technical subjects in imaginative ways that captured the public’s interest. Limon concludes that lay writers like Poe and Nathaniel Hawthorne, or those who wrote “without letters,” also struggled with the professional class to establish their authority to speak on emerging scientific issues (19).

Poe had not received any formal training as a scientist. However, he had considerable exposure to scientific ideas in his education, in his military training, and in his investigation of science news as a journalist. He believed that an observant and skilled writer did not need credentials from any official accreditation organization before he was qualified to write about scientific topics. The newly emerging class of professional scientists in the United States was neither equipped, nor interested, in communicating with the public. As a result, nineteenth-century citizens embraced newspapers and journals as their primary sources for news about technology and world news. Much of the writing about these topics was conveyed by science popularizers, such as Poe. As Tresch asserts, “Poe’s writings force us to reconsider the relationship between science and literature” (“Potent Magic,” 275-276). Therefore, it is essential to our present understanding of nineteenth-century culture to explore writers like

Edgar Allan Poe, who skillfully and artistically wrote science narratives on several of the most important popular scientific trends of his lifetime. Poe displayed an interest in science, and possessed the necessary technical knowledge about the many areas of science he wrote about in each of his writing genres and styles, i.e., poetry, non-fiction, and fiction. Furthermore, his ability to write in the popular vernacular inspired the public's continued interest in the inventions and issues of nineteenth-century science.

This study will consider a science narrative to be a work of Poe's poetry, non-fiction, or fiction, where he provides an account of scientific inventions or issues, or tells a story that highlights popular scientific themes. For example, in "MS. Found in a Bottle," he recounts the narrator's experiences during a sea expedition where his vessel is propelled to the South Pole by a storm. He records the details of the ship and crew in the realistic style of a technical journalist assigned to the voyage. At the same time, he explores issues concerning the uncertainties of the expedition. He brings up questions about death—one of the most often re-occurring themes in Poe's writing. Another significant example of Poe's science narratives is his journalistic essay on the early development of the Daguerreotype. His report illustrates intricate technical details about this important newly emerging technology. At the same time, he writes artistically about the "Daguerreotype. He presents both enthusiastic views as well as concerns about how this newly emerging technology might affect the public in the future.

The issues of Chapter I will be brought together by a close reading of one of Poe's earliest poems, "Sonnet—To Science." In this poem, Poe first demonstrates his ambivalence toward science. He attempts to engage in a mediated dialogue between artists ("Romantics") and scientists("Mechanics") about the value of science. "Sonnet" illustrates that Poe was concerned about how science encroached on an artist's creativity. However, he was also

cognizant that science offered him a new venue to express his views. After writing “Sonnet” and several other poems, Poe was still not certain what he wanted to do with his life. After a series of financial setbacks forced him to drop out at the University of Virginia. Poe never resumed any additional formal college or scientific training, but learned a great deal of practical technical information by serving more than three years in the United States Army.

Chapter II explores Poe’s early training and Army career because it gave his life some direction and helped to prepare him for a career in journalism with several American magazines and newspapers. In 1835, during the formative period of his career, he was influenced by several of the important contexts of journalism and science that were taking place in society. His involvement in journalistic non-fiction science writing will also be explored in Chapter II of this study. His journalistic works educated the public about new technological topics and encouraged the public’s continued interest in science. Examples of these narratives include his investigation of “Maelzel’s Chess-Player,” and his “hoax” focused on trans-Atlantic balloon travel. Poe’s tale is included in the non-fiction chapter because he originally submitted it, anonymously, as a non-fiction front-page news story.

Chapter III begins with a discussion of the ways that Poe’s fictional writing was informed by the literary influences that were in-place at the beginning of his writing career. This summary will be followed by an in-depth exploration of his fictional narratives. These works are organized into three sections: *Tales of Ratiocination*; *Imaginary Voyages*; and *Metaphysical Explorations*. The fictional narratives start with *Tales of Ratiocination* because they are transitional works between Poe’s journalism and his fictional narratives. In *Tales*, Poe elaborated on how science could be used to solve the problems of urban crime and on the shortcomings of those who misunderstood science. “The Murders in the Rue Morgue” is Poe’s



first tale of ratiocination. In this story, the narrator uses a combination of intuitive reasoning and the tools of nineteenth-century science to solve crimes. He names his new problem-solving approach, ratiocination. He attempts, unsuccessfully, to use his new approach to solve an actual murder in “The Case of Marie Roget.” In “The Purloined Letter,” his final detective Dupin story, Poe extends his theory of ratiocination by delving into the mind of his opponent to solve a royal crime.

Poe’s *Imaginary Voyages* help to free him from the restrictions of writing about the nineteenth century and of the need for the objectivity that was required of him when he was writing journalistic non-fiction. The alternate worlds he created in fiction also helped him to explore his ambivalent attitudes about science and to write about this subject from both scientific and artistic points of view. In “Some Words with a Mummy,” nineteenth-century “gentlemen” try, unsuccessfully, to convince the mummy that the technologies of their era were more advanced than those of ancient Egyptian civilization. In “Mellonta Tauta,” the narrator travels two thousand years into the future via a hot-air balloon again. He writes a letter to nineteenth-century readers that explains the history of science. He also offers a prophecy stating that science has overcome the critical problems of the nineteenth century.

*Metaphysical Explorations* help to carry Poe’s characters and themes farther away from the nineteenth-century and into the alternative realities that the author created in fiction. These narratives expand Poe’s views from the purely scientific into the metaphysical universe. They also illustrate his interest in the popular but widely contested pseudo-science of mesmerism. In “Mesmeric Revelation,” Poe elaborated on his unique approach to the controversial topic of mesmerism via a fictional interview format with a man in a near-death state. In “The Facts in the Case of M. Valdemar,” the narrator places a dying man under a

mesmeric trance, thus allowing Poe to explore the uncharted boundaries between life and death. In “A Descent into the Maelstrom,” Poe’s narrator bravely faces the prospect of death.

Chapter IV of this study discusses the popular science compendiums of Robert Chambers and Alexander von Humboldt. Both of those authors influenced Poe to write a comprehensive science book. Poe acknowledges Chambers’s book, *Vestiges of Creation*, in an editorial comment and dedicated *Eureka* to Humboldt (*Poe Log* 723). In *Eureka*’s “Introduction,” Poe wrote that “the nearest approach to *Eureka*” is Alexander Von Humboldt’s *Cosmos* (*Complete Works XVI* 186). Poe also echoed several of the underlying themes of Humboldt’s book in his science book. The remarks made by critics about Chambers’s book also provide useful comparisons in this study’s discussion of the nineteenth-century commentary on *Eureka*. The subsequent section of Chapter IV discusses how Poe promoted *Eureka* in his “Universe” lectures. It examines the relevance of the criticisms of these lectures and of *Eureka* during Poe’s lifetime, and up to the present era. I demonstrate in this chapter that an understanding of the scientific themes advanced in Poe’s pre-*Eureka* works of poetry, non-fiction, and fiction can provide important clues to help scholars obtain a more comprehensive understanding of *Eureka*.

Even with the clues he provided, Poe’s manipulation of different genres has made his book an extremely difficult work to evaluate in any period since it was published. Despite his comparison to Humboldt’s work, Poe’s work remains unique in science and literary writing. Although Poe’s ambitious reach far exceeded his grasp, no work better illustrates both Poe’s enthusiasm and his ambivalent positions about science than *Eureka: A Prose Poem*. Some of the obstacles that have made *Eureka* both difficult to understand and deeply profound will be offered in this study. Poe’s motivating reasons for writing *Eureka* will also be explored. This

study will not attempt the task of conducting a comprehensive evaluation of Poe's final book. However, it will suggest some ideas for conducting future meaningful evaluations of *Eureka*. A discussion of *Eureka* will conclude this study. It begins with a close reading of his 1829 poem, "Sonnet –To Science" (*Complete Works VII 22*).

In this poem, Poe expressed concerns about the rationalities of science. He was opposed to the "Mechanical" thinking of seventeenth and eighteenth-century Age of Reason philosophers and scientists. Daniel Hoffman views "Poe's lone sonnet as an outcry against the anti-poetic materialism of the modern scientific age" (47). An alternative reading of his poem suggests that Poe may have also believed that science could offer new inspirations for writers. In the opening quatrain of the sonnet, Poe addresses a question about Science:

Science! True daughter of Old Time thou art!  
 Who alterest all things with thy peering eyes  
 Why pryest thou thus upon the poet's heart,  
 Vulture, whose wings are dull realities? (1-4)

The poet reminisces that the ancients valued science as the "True Daughter of Old Time." She was once able to provide inspiration to artists and philosophers. In lines two and three, Poe laments the intrusion of scientific research ("peering heart") "upon the poet's heart." He uses the "Vulture" as a metaphor in line four to represent the dark and destructive power of science. The dark creature of Industrial Age science has caused the poet to take flight from his bright dreams and forces him to replace them with the dull realities of existence. In the next stanza, Poe weighs the advantages and disadvantages of science:

How should he love thee? Or deem thee wise,  
 Who wouldst not leave him in his wandering  
 To seek for treasure in the jeweled skies,  
 Albeit he soared with an undaunted wing? (5 – 8)

“Who wouldst not leave him in his wandering/To seek for treasure in the jeweled skies” could be interpreted in more than one way. Poe asks an important but ambiguously stated rhetorical question. However, he leaves it up to the reader to provide an answer. From the negative side, he could be pondering whether science will abandon the wandering and lost poet and relegate him to a life of isolation and extinction. On a positive note, he could be proposing that the new artist could reconcile with science and allow him to soar “with an undaunted wing.”

During and before the nineteenth century, astronomers with powerful telescopes had and were learning important new facts about the solar system and the Universe. This new information greatly expanded conventional views of the known world.

Perhaps, also in this verse, Poe was paying homage to astronomer Tycho Brahe, who significantly improved the power and the accuracy of the telescope in the sixteenth century, and discovered a quickly vanishing shooting star. Poe may also have been considering that nineteenth-century inventions could offer some new possibilities for him to discover “treasure in the jeweled skies,” by providing him with a career and some new writing topics. If Poe is alluding to Brahe’s fleeting and rapidly vanishing celestial discovery, he may also be cautioning readers about the uncertainties and impermanent nature of new discoveries.

The speaker of Poe’s poem addresses several significant questions about science:

Hast thou not dragged Diana from her car?  
And driven the Hamadryad from the wood  
To seek shelter in some happier star? (9-11)

Lines nine and ten ask if the worldly vulture has disturbed the serenity and the creativity of the mythological Greek goddess Diana and the wood nymph Hamadryad. In verse eleven, Poe asks if these figures have been driven to seek “shelter in some happier star.”

However, on the more positive side, these lines might indicate that Poe believed that science could provide a shelter and some new opportunities for the nineteenth-century writer. By the end verses, Poe injects himself into the discussion by lamenting that science has snatched away “the summer dream beneath the tamarind tree” from “me.”

Poe’s attitudes about science were ambivalent, and still being formed at the beginning of his writing career. However, he needed a platform before he could begin to consider and express his ideas to a large audience. The rising influence of periodicals and literary journals provided him with an ideal forum to develop his thinking and to sharpen his skills by writing about science. He was, perhaps, initially influenced to write about science in journalism and fiction after his editors assigned him to produce reports about the new technologies. As the public became more enthusiastic about his science writing, he began to focus more on writing about the newly emerging topics and issues of nineteenth-century science. Poe was, therefore, positioned at the opportune “intersection” to write when scientific developments were being introduced at a more rapid pace than at any previous time in world history. Poe offers a key example of a widespread movement of thought and practice in this period which mingled the “Romantic” and the “Mechanical” positions. Sometimes his writing recognized and heightened the tensions between these poles, and at other times they denied such tensions. The debates about the value of science in society are sometimes distorted or simply invisible when works of this period are examined through Poe’s works of poetry, non-fiction and fiction. The next chapter begins with an overview of how Poe’s education and training helped prepare him for a career as a journalist and then discusses several of the important non-fiction and a fictional science narratives that he produced as a journalist.

If we chose to call the former[the “automated” chess-player] a pure machine, we must be prepared to admit that it is, beyond comparison, the most wonderful invention of mankind (*Complete Works VI* 9).

## CHAPTER II – POE’S TRAINING and JOURNALISM

Poe’s early schooling and military training inspired and shaped his interest in science. According to Kenneth Silverman, Poe’s secondary education started after his foster parents moved from England to Richmond. In 1821, “Edgar attended the private academy of Joseph H. Clarke,” which served to prepare young gentlemen to obtain “an honorable entrance in any University in the United States.” One of his classmates wrote a testimonial that Poe was one of the top students in the class (23). In *The Poe Log*, Thomas and Jackson list the classes that students typically enrolled in while at that school. They included English, Languages (French, Latin, and Greek), Arithmetic, Geometry, Trigonometry, Navigation (using celestial observations), Gunnery and Projectiles, Optics, Geography, Maps and Charts, and Astronomy (41, 48). Continuing a description of Poe’s education and experiences, Silverman writes that in February 1826, Edgar Allan Poe was among the first group of students enrolled at the University of Virginia. School records indicate that he was a bright student. However, hefty financial and gambling losses to his classmates and tuition bills to the University and to left him hopelessly in debt. When his foster father refused to continue paying for Poe’s college expenses, he was forced to drop out in March 1827 (Silverman 29-34). He never returned.

Major William F. Hecker, the author of *Private Perry and Mister Poe*, writes that Poe enlisted in the United States Army on May 26, 1827, under the alias of Private Perry. He spent three years as an artilleryman stationed for the longest period at Fort Moultrie, in a coastal area outside of Charleston, South Carolina. Poe spent much of his Army service learning cannon drill and maintenance. This task needed to be performed by a soldier who had

extraordinary expertise and skill in the areas of measurement, logistical planning, and design. Army records indicate that Poe “was the most technically competent artillerist in his battery.” He was assigned to “oversee the ammunition supply of the battery.” He was quickly advanced to an artificer, a technical job concerning the “weights and measures of iron and chemicals” (xxxiv). According to Army records, “Poe was the army’s expert bomb artisan, carefully designing, preparing and constructing inter-connected systems of iron and chemicals with the ultimate goal of explosively destroying his creation” (xxxv- xxix). It was extraordinary for that time that Poe was promoted to a Sergeant Major in less than two years after he enlisted (xxix). Hecker concludes that Poe’s almost four years in the Army did not detract in the least from his future career as a writer. On the contrary, Hecker contends that it exposed Poe to many disparate subjects to write about, such as Cryptography, Geography, Oceanography, and Astronomy (xii). Also, he was able to incorporate many of his Army experiences into the themes of his journalistic and fictional works. The next section of this chapter discusses the contexts of nineteenth-century science and journalism that were in place after Poe’s military service, and during the period where he was also embarking on a writing career.

George Daniels, in *American Science in the Age of Jackson*, notes that many of the most important theories and discoveries of the nineteenth century had already “been well-formulated, and new subjects of controversy began to appear.” He argues that “Americans had contributed only minimally to the developing body of world science before the twentieth century” (3-4). The nineteenth century was important, according to Daniels, because it led to new ways for the “popularizers” to explain science to the public (40). During the 1830’s, American journalism was beginning to reflect many of the significant social and technological changes of the nineteenth century. Improvements in printing technologies helped to produce

and distribute newspapers and magazines more efficiently and less expensively to the public than had previously been possible.

In *Discovering the News*, Michael Schudson reports that “The development of railroad transportation and telegraphic communications were the necessary preconditions for a cheap, mass-circulation, news hungry, and independent press” (32). With these changes, newspapers and magazines suddenly were becoming more prevalent to the American public. Also, their ability to influence public attitudes about important issues, such as science, increased as their circulation rose. In 1830, the country had 650 weeklies and 64 dailies, with a circulation of about 78,000. By 1840, there were 1,141 weeklies and 138 dailies, with an average circulation of 300,000 (14). Schudson argues that early nineteenth-century penny newspapers and journals “invented the modern concept of the news.” In the “1830’s newspapers also began to reflect the activities of an increasingly varied, urban, and middle-class society” (22-23). The public’s interest in science also created the need for a new class of writers who could present scientific information in ways that the public could understand. At the same time, a variety of new print media sources, such as newspapers and journals offered these writers new powerful methods of communicating about science to the public.

It is, therefore, likely that the increased influence of newspapers and magazines in the 1830’s, at the time that he completed his Army service, influenced Poe’s decision to publish his works in these new powerful communication media. As Gerald Kennedy writes, “In Poe’s writing career he worked... as a proofreader, editor, reviewer” of newspapers in Baltimore, Richmond, Philadelphia, and New York—the publishing centers of the United States” (64). These venues also provided him with the “shelter in some happier star” to bring his



imaginative ideas to the largest possible audience. Burton R. Pollin commented in 1973 at the Annual Convention of the Poe Society in Baltimore:

Poe's whole life was devoted to language-making. Early in his career as a poet, the niceties and refinements of words engaged his passionate devotion. He became a magazinist, as he honorifically called himself, in an age when the trend was "Magazine-ward." To "use a Poe coinage; then he produced a stream of tales, reviews, essays, and lectures. (Untitled)

As a journalist, Poe's attitude about science began to shift from ambivalence to a more supportive position. With a reporter's access to the news, he often wrote enthusiastically about many of the exciting new developments or "treasures" of science. However, it is often hard to determine whether he wrote favorably about science because he was impressed, or if his editors expected him to write positive reports. By writing about science as a journalist, he could have it both ways: he could report positively about science, but still keep his personal convictions concealed. Note that works from this chapter, unless otherwise indicated, will cite from several volumes of the *Complete Works of Edgar Allan Poe*, by James Harrison.

Poe's first job as a journalist began in 1835, when Thomas H. White hired him as a writer for the *Southern Literary Messenger (SLM)* in Richmond, Virginia. Poe biographer, Arthur Quinn writes that, beginning with the December 1835 issue, "Poe did all of the editorial work without credit or title" (251). Burton Polin notes that it was due to Poe's ability to write attention grabbing stories like "The Unparalleled Adventures of One Hans Pfaall" [an imaginary balloon voyage to the moon] "that helped to increase the *SLM* readership from five hundred, when he started, to thirty-five hundred in 1837—the year he resigned" (*Collected Writings* 62).

Poe's first science-based journalism article, "Maelzel's Chess-Player" was published in 1836. The report is about an "automated" chess machine, Poe demonstrates that he could not support Maelzel's claims that the "automaton" could reason. Poe exposed the hoax of the "automated" chess player with creativity, however, he used the tools of classical research to conduct his inquiry. According to Henry Margenau, Francis Bacon first defined the standards of experimental studies in the seventeenth century and they were closely followed by most professional scientists for several centuries. "Bacon offered scientist a fourfold rule of work: observe, measure, explain, and verify" (52). Although Poe often criticized Bacon and his followers, he was committed to using the classical inquiry proposed by Bacon.

Poe observes and measures the machine's capabilities. He rejects Maelzel's implied claims that the "Player" was an "automaton," and offers an alternative hypothesis. As Poe writes, "Perhaps no exhibition of the kind has ever elicited so general attention as the Chess-Player of Maelzel. Wherever seen it has been the object of intense curiosity, to all persons who think. The question of its modus operandi is still undetermined." Poe states that he is interested in launching an investigation because "we find everywhere men of mechanical genius...who make no scruple in pronouncing the Automaton a pure machine, unconnected with human agency in its movements" (*Complete Works XIV 6*). Poe asks readers to ponder the implications for the future if a machine could calculate without human input. He writes, "There is no analogy, whatever, between the operations of the chess-Player and those of the calculating machine of Mr. Babbage. If we chose to call the former a pure machine, we must be prepared to admit that it is, beyond comparison, the most wonderful invention of mankind"(9). Poe is referring to the prototypes of the "Difference Engine." The machine was introduced in London between 1791 and 1789 by mechanical engineer Charles Babbage, who

has been credited with having been the first inventor of the mechanical computer. His machine could solve complex polynomial equations (Isaacson 18). The Difference Engine No. 2 is a working model that has been restored and re-energized by modern engineers. It is currently displayed in The London Science Museum ([sciencemuseum.org.uk](http://sciencemuseum.org.uk)). Poe acknowledges that Babbage's machine can compute when a human programmer controls and anticipates the possible outcomes and solves for the expected results. When Poe argues that the "Player" would have to be "the most wonderful invention of mankind" to counter the moves of a human opponent, he is skeptical that the machine can do what Maelzel claimed.

Poe's report begins with the historical background of the machine. The "chess-player" was invented in 1769 by Wolfgang von Kempelen, who first took it to European cities in 1804. It was later purchased by Johann Nepomuk Maelzel, who was also an early inventor of the automatic music player. Maelzel exhibited the chess-player in European cities and in several cities of the United States in 1821. Poe writes that "Baron Kempelen had no scruple in declaring it to be a very ordinary piece of mechanism." It was "a bagatelle whose effects appeared so marvelous only from the boldness of conception, and the fortunate choices of the methods adopted for promoting the illusion" (*Complete Works* VI 12).

Poe was most concerned that in the publicity about the machine, Maelzel made implicit claims that the "automaton" had the intelligence to regulate its moves. Instead, Poe proposes an alternative hypothesis. He argues that "It is quite certain that the operations of the Automaton are regulated by *mind*, and by nothing else." He offers the central research question for his investigation: "The only question then is of the *manner* in which human agency is brought to bear?" He reasons that any machine created by man could act only in a mathematical or systematic way. The machine, he states, would need to respond to the data it

had received within a given set of expected outcomes. Poe's main argument is that he believes it would be inconceivable for a machine to anticipate the almost infinite number of possible complex chess moves needed to counter a human opponent (11).

After reviewing the previous theories about the "automaton," he concludes that none of them has revealed how the machine makes chess moves. To form his conclusion, he makes several visits to the exhibit in Richmond, Virginia (12). He writes, "Maelzel displays the inside of the machine to prove his point. Its whole interior is crowded with wheels, pinions, levers, and other machinery so that the eyes cannot penetrate but a little distance into the mass." Poe observes that Maelzel adds to the intrigue by only opening one of the four doors at a time. He opens the three front doors of the machine at one time and the back door later (see Figure 1 below). Poe describes how the audience reacts to Maelzel's deceptions and reports, "In general, every spectator is now thoroughly satisfied of having beheld and completely scrutinized, at one and the same time, every portion of the Automaton, and the idea of any person being concealed in the interior if ever entertained is immediately dismissed as preposterous in the extreme" (15).



Figure 1 – Mechanically Operated "Turk"

Poe writes that Maelzel's efforts to demonstrate that no human is inside of the console are designed to support the validity of his claim that the machine reasons according to its artificial intelligence or programming. He emphasizes that he is not deceived by Maelzel's

illusions. He makes several additional visits to the exhibition to investigate how the machine operates. Poe derives the conclusion that Maelzel was not regulating the board because his back was always turned away from the machine when the machine was making its moves. Maelzel turned around and opened doors in the front and back of the machine in an attempt to give the illusion that no one could be inside of the machine. However, Poe observes that not all sections of the inside could be observed after Maelzel opened any single door. He also reveals that the machine employs concealed mirrors to aid in the deception. He describes Maelzel's distractive tactics: A chess move is made by the mechanical manipulation of a small concealed man inside of the machine, who controls a "Turk" constructed as a robot (25-35). Poe adds: When asked, Maelzel declined to comment on how his automaton worked (29). According to Poe, "We do not believe that any reasonable objection can be urged against this solution of the Automaton Chess-Player" (35).

Poe's investigative report demonstrated that he was, from the beginning of his career, interested in exploring technical challenges that required creativity and scientific inquiry. His exposé showed that he was interested in exploring the boundaries between scientific news and fiction. Also, he wanted to challenge unrealistic claims of those he was investigating and to debunk their myths. The ways that he defined the issues and proposed solutions in "Maelzel's Chess-Player," according to Pollin, foreshadowed the scientific methods he established in his later tales of ratiocination (177). Neil Harris argues that Poe "uncovered the secret of Maelzel's automatic chess player, and so broke down an illusion with as much skill as he used to create one" (83). Poe also concluded that the public could be deceived by almost any spectacular false notion supported by circumstantial facts. What appeared to be certainly true, could also be untrue. This story also revealed that Poe had the insight to ask the important

question concerning the future, such as: What would the future be like if machines could think? Would automation be an advantage or disadvantage in the future?

Poe continued his interest in spectacular news stories that blurred the lines between fact and fiction in his “Review of Phrenology and the Moral Influences of Phrenology.” In an 1836 issue of the *SLM*, he reported on the “General Study” and “Discoveries” of Phrenology that were conducted by Gall, Spurzheim, and others. His account of the works of several of the “prominent” persons conducting research on phrenology demonstrates that he was interested in exploring a broad range of popular science-related topics. A careful reading of his commentaries also reveals that he maintained journalistic neutrality on a subject that was being questioned at that time by the professional scientific community. Advocates of this belief-system often used emotional appeals and anecdotal testimonials to “prove” that science supported their views. Poe was likely assigned by his editors to investigate phrenology.

In his report, Poe assures readers that “Phrenology is no longer to be laughed at. It has assumed the majesty of science.” As “science, it ranks among the most important which can engage the attention of thinking beings.” His use of the wording, “assumed the majesty of science” indicates that he is enthusiastic about reporting on the subject. However, he remains personally non-committal on whether phrenology is a valid area of scientific investigation. He states that the study of phrenology is “very extensively accredited in Germany, in France, in Scotland, and in both Americas.” A single lecture in Scotland by “Dr. Spurzheim...gained five hundred converts to Phrenology,” and in “Northern Athens, it is now a stronghold for the faith” (*Complete Works VIII* 252). Poe’s use of the words “converts” and “faith,” indicates that he may not have been as convinced that phrenology was a hard science as many of its believers claimed. During this period, most scientists and religious leaders rejected claims that

there were connections between science and faith-based spiritual practices. Poe reports that its followers argue that “With a well-directed inquiry of Phrenology, individuals may make good life choices and elevate their moral capabilities” (253).

It cannot be concluded whether Poe’s report was more likely influenced by the public’s interest in phrenology or of his beliefs on the subject. However, his report exposed many flaws of this now understood pseudo-science. This topic was once considered by many to be a legitimate subject of scientific inquiry in the nineteenth century. Phrenology also provided Poe with the framework for descriptions of characters with phrenological features in his fictional works such as: “The Tell-Tale Heart,” and “The Fall of the House of Usher.”

Poe continued to demonstrate an interest in unlocking mysteries and secrets in several of the essays and newspaper columns he wrote on secret codes and cryptography. These popular weekly columns offered puzzles, in which readers were invited to propose solutions and suggest additional ones for use in subsequent editions. He then provided the solutions to the ciphers in subsequent issues. Once Poe introduced the topic, readers sent in hundreds of other ciphers. His columns on secret writing became a very popular component of *Graham’s Magazine*. According to Shawn Rosenheim’s *The Cryptographic Imagination*, Poe’s four articles in *Graham’s* on secret writing are among the first published texts on the subject of cryptography. Rosenheim notes that Cryptology “is composed of two parts: cryptography, the art of making codes, and cryptanalysis, the art of breaking them down” (254).

Poe’s “A Few Words on Secret Writing” first appeared in the July 1841 issue of *Graham’s Magazine*. As Poe writes, “We can scarcely imagine a time when there did not exist a necessity of transmitting information from one individual to another, in such a manner as to elude general comprehension.” Therefore, “we may well suppose the practice of writing

in cipher to be of great antiquity” (*Complete Works XIV* 114). Poe’s accounts range from how the ancients used hieroglyphics to how the early Greeks used scytala, or wooden blocks, to carry secret messages between officers and messengers. He notes that the modern uses of secret communications started with the invention of letters and printed communications. “Few persons can be made to believe that it is not quite easy to invent a method of secret writing which shall baffle the investigation.” However, he acknowledges that people have different skill levels in solving secret codes. “It will be found that, while one cannot unriddle the commonest cipher, the other will scarcely be puzzled by the most abstruse” (116).

Demonstrating how secret codes may be formed and solved, Poe begins with simple substitution codes, where letters, numbers, and symbols stand for others. For example, in a systematic substitution code, “z” may stand for an “a,” and “x” for a “b.” In a random code, “a” may stand for “p,” and “b” or other variable letters. Harder to decipher codes may be constructed by using symbols for letters. He notes that there have been many attempts to construct such advanced codes, such as those that have perpetually shifting solutions. Many of them, he says “have about them an air of inscrutable secrecy. It appears almost an impossibility to unriddle what has been put together by so complex a method” (118).

Rosenheim notes that the first known published use of the word “cryptography is Poe’s coinage.” He first used the term in his 1843 fictional short story, “The Gold-Bug.” The narrator describes how he deciphered a treasure map left by the legendary Captain Kidd. He decodes the directions to the buried treasure and then deciphers the encrypted map by using a substitution code (19). In the December 1841 issue of *Graham’s Magazine*, Poe published an additional column on Cryptography, entitled, “A Few Words on Secret Writing.” Poe explains that advanced puzzles, where the only secret to the code is “locked in the creator’s mind can



be very difficult or nearly impossible to solve.” Poe mentions Francis Bacon again. He “very properly defined three essentials in secret correspondence.” Bacon’s first essential is that the cipher should “elude suspicion of being a cipher.” Secondly, its alphabet should be so simple “as to demand but little time in the construction of the epistle.” Thirdly, it should be “absolutely insoluble without the key.” Poe adds the fourth essential: “With the key, it is promptly and certainly decipherable” (147). Perhaps, Poe added the fourth essential because he needed to solve the submitted puzzles in time to have them published in the upcoming issue. Poe quotes from a letter by W.B. Tyler, who praises Poe’s correct solution to Dr. Charles J. Frailey’s puzzles. “You have exhibited a power of analytical and synthetical reasoning I have never seen equaled... I crown you the king of secret readers” (141). Tyler’s letter also proposes two additional challenging ciphers—which, according to Rosenheim, were among the only “legitimate” ones submitted that Poe was never able to solve” (39).

Poe explained in his December 1841 article of *Graham’s* that Tyler’s cipher was indecipherable because it was improperly constructed. Rosenheim supports Poe’s assertion by stating that it was difficult to solve because spaces and punctuation marks were omitted between the letters and it was written backwards (38). Poe also states that he did not work at Tyler’s second challenge because the many ciphers being submitted to him by his readers “were beginning to take too much of his time” (149). Rosenheim initially commented that Tyler’s longer second cipher “remains unsolved—and is likely to stay so for some time.” In order “to solve that cipher, one needs to identify up to 156 characters...using six alphabets” (39). However, after publishing this statement in his book, Rosenheim decided to determine whether twentieth-century cryptographers could unlock either or both of Poe’s unsolved puzzles. Rosenheim’s subsequent contest, which he called “The Edgar Allan Poe

Cryptographic Challenge,” was supported “by a \$2500 prize from Williams College for anyone who could solve Tyler’s ciphers.” On October 31, 2000, *Newswise*, an academic science news service of Williams College, reported that both puzzles had been solved by Gil Bronza a software programmer living in Toronto. It is ironic that it took a modern computer analyst to decipher the only two unsolved ciphers of the hundreds that readers’ submitted to Poe. Rosenheim concludes that Poe was one of the most skilled cryptologists in history (*Cryptographic Imagination* 24). Poe’s columns on secret codes were also the first ones to be featured in popular newspapers. They generated a continued interest in this topic in and after Poe’s lifetime. Poe’s cipher format has also been proliferated in the present era in newspaper columns like Poe’s—called The Puzzle of the Day. Poe next demonstrates that his interests in science are diverse, ranging from technical topics to essays about nature.

The *Conchologist's First Book* was first published in April 1839. Poe was a consulting editor of the book, but wrote only the “Preface and Introduction.” According to Thomas and Jackson, Poe credited much of the work to scientist Thomas Wyatt for “his late excellent Manual of Conchology.” The book was originally meant to be an accessible and inexpensive abridgment of Wyatt’s original textbook (259). The work was published under Poe’s name due to his popularity. It turned out to be the most popular book, in sales, printed under Poe’s name. The fact that Wyatt asked Poe to accept authorship demonstrates that at least one professional scientist identified Poe as an authority on science. Perhaps, Poe’s interest in seashells was inspired by his Army service along the coastlines of Charleston, South Carolina.

In Poe’s Introduction to the book, he explains that the history of the study of mollusks (seashells) went back to the ancient Greeks, noting the descriptions of seashells by Pliny and Aristotle. He documents that there have been significant historical studies of seashells found

on board numerous sea-faring vessels, on remote South Sea Islands, in West Africa, Chile, and New Holland. He argues that “Few branches of Natural History... are of more adventitious importance” than Conchology (*Complete Works XIV* 98). A notable feature of this book is that it was one of the first popular scientific books to include color pages, offering “illustrations of two hundred and fifteen shells, presenting a correct type of each genus” (95). The first edition was so popular that the publishers printed a second one in the same year. The third version was published in 1845 under Wyatt’s name, but Poe’s initials were only retained in the Preface (Thomas and Jackson 608). Poe’s involvement in *The Conchologists First Book* demonstrates that he was interested in lending his name to a legitimate scientific work. It also shows that he was willing to accept author’s credit for a work that he did not write.

In 1840, Poe became a writer for *Alexander’s Weekly Messenger* and published three essays on the newly emerging image copying process, known as the Daguerreotype. This technology was the earliest prototype for modern photography. Alan Trachtenberg, in *Classic Essays on Photography*, reprints Poe’s essays on the Daguerreotype, and calls them among the earliest commentaries on the processing of film. Trachtenberg writes that as early as 1828, M. Nicephore Niepce succeeded in producing a photographic image using an invention he called the Camera Obscura (4). Louis Daguerre claimed that his process was quicker than Niepce’s and that his image was seventy times sharper than anything that had been developed. He writes: “Without any knowledge of chemistry and physics, it will be possible to take in a few minutes the most detailed views, the most picturesque scenery... and replicate images of nature” (12-13). Poe exclaims that the Daguerreotype “is, perhaps, the most extraordinary triumph of modern science”(37). He reports on this subject first as a technical writer:

A plate of silver upon copper is prepared, presenting a surface for the action of light, of the most delicate texture conceivable. A high polish is given this plate by means of a steatitic cancerous stone (called a Daguerreolite) and contains equal parts of steatite and carbonate of lime... The plate is then deposited in a Camera Obscura, and the lens of this instrument directed to the object which it is required to paint. (37)

After describing the details needed to manipulate light and exposure time, Poe changes from reporting as a journalist to a writing as a poet. He expresses awe about the new technology when he writes, "For, in truth, the Daguerreotype is infinitely ... more accurate in its representation than any painting by human hands." He continues, "Upon closer scrutiny, the photogenic drawing discloses only a more absolute truth, a more perfect identity... with the thing represented." He declares further, "The variations of shade and the gradations of both linear and aerial perspectives, are those of truth itself, in the supremacy of perfection." He is amazed that a mechanical technology was invented that captures the romantic beauty of nature. He challenges readers to look at this innovation and try to imagine how it could change the world of the future. The consequences of such an invention, he exclaims, "will exceed, by very much, the wildest expectations of the most imaginative." Perhaps he foresaw that future scientists might be able to view previously "inaccessible locations," like a "lunar chart," by using this process (38). Poe's comment appears to be favorable. It can also be conjectured that he was concerned that the powerful new technology might introduce future intrusions on privacy. His essays on the Daguerreotype employ both technical and artistic styles to describe one of the most important innovations of his lifetime. Not only was Poe among the first journalists to write about this emerging technology, but he was also one of the earliest historical figures to have had visual images captured on camera of his likeness (Deas).

By the end of Poe's journalistic career, he was likely running out of actual science reports to write about that could excite the public's interest in science in the spectacular way that he had hoped. Perhaps, by that time, his imagination also far exceeded science's ability to create new inventions. His "Balloon Hoax" demonstrated that sensational quasi-scientific narratives could command the public's attention in ways that even he could have never imagined. By presenting a fictional narrative as if it was an actual front-page news story, Poe captured the attention of a larger segment of nineteenth-century readers than he did in any of his previous journalistic reports. However, this move also seriously damaged his credibility as a serious science reporter. Poe also introduced a more skeptical attitude concerning nineteenth-century science than he displayed in his journalism. Therefore, his "Hoax" is a transitional work linking his earlier journalistic writing to his later fictional science narratives.

The extraordinary story of a Transatlantic Balloon crossing was first written by Poe under the pseudonym of John Wise. "Wise's" article was first published in the June 15, 1843, issue of the newspaper, *Spirit of the Times*. He reports that a "well-known balloonist plans to take a trip across the Atlantic Ocean in the summer of 1844" (*Poe Log* 414). A year after the report, *The New York Sun* ran a follow-up news report on the balloon trip without mentioning Wise. The newspaper's April 13, 1844 headline read:

ASTOUNDING INTELLIGENCE BY PRIVATE EXPRESS FROM CHARLESTON VIA  
NORFOLK! – THE ATLANTIC OCEAN CROSSED IN THREE DAYS!! – ARRIVAL AT  
SULLIVAN'S ISLAND OF A STEERING BALLOON INVENTED BY MR. MONCK  
MASON (457)!!

The article reports on this spectacular adventure:

"We stop the press at a late hour, to announce that, by a Private Express from  
Charleston, S.C., we are just put in possession of full details of the most extraordinary

adventure ever accomplished by man.” The “*Atlantic Ocean has been actually traversed in a balloon, and in the incredibly brief period of Three Days!* Eight persons have crossed in the machine. (457)

The *Sun* also printed a special edition, the *Extra Sun*, adding that the crossing was a triumph of Mr. Monck’s flying machine. The *Extra* also included the names of the passengers along with an illustration (see Figure 2. below) of the hot air balloon, the *Victoria* (458):

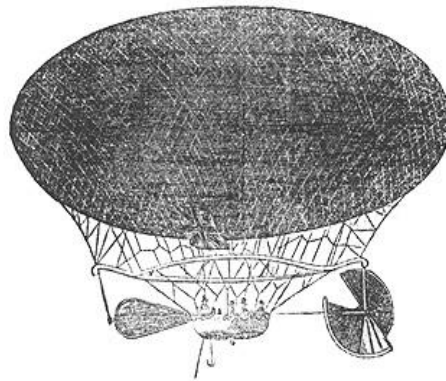


Figure 2 – *New York Times* Illustration of the *Victoria*

On the same day as the *Extra Sun*’s report, the *New York Herald* commented that the hoax was “blunderously got up,” and “ridiculously put together” (*Poe Log* 460). It added, “About 50,000 of the *Extras* were sold... We think every intelligent reader will regard this attempt to hoax as not even possessing the character of pleasantry. The celebrated ‘Moon Hoax,’ issued from the *New York Sun*, many years ago, was an ingenious essay; but that is more than can be said of the ‘Balloon Hoax’” (461). The *Herald* was the first newspaper to give Poe’s story its presently used title.

The *Sun* had previously published a presumed news story in 1835 about British astronomer, John Herschel that was written by Richard Adams Locke, which stated that Herschel had gone to Cape Hope, South Africa to test his new powerful telescope. Neil Harris writes that the *Sun* reported that “Herschel’s success had been beyond his wildest

dreams, for the telescope had penetrated the secrets of the Moon.” The report claimed that the Moon had trees, oceans, pelicans, and winged men (69). Locke’s story sold more than 20,000 copies. The newspaper boasted that many people “absolutely believed the story” (69). Harris is among the researchers that connects Locke’s “Moon Hoax” with Poe’s “Balloon Hoax.”

It was not until January 20, 1845 (about nine months after its publication and the public had lost interest in the story) that Poe was *credited* with writing his story. James Lowell inserted this revelation near the end of a review of Poe’s literary career. He simply concluded that Poe is “the author of the anonymously published Balloon Hoax” (*Poe Log* 490). As Eric Carlson comments, “In the considerable rush for copies” for the “Balloon Hoax,” they “were sold for as much as fifty cents each” (260). Poe’s story “was written in the style of a journalistic flash... since the *Sun* extra edition gave all of the signs of being a real newspaper scoop.” Poe used details provided by Mason Monck’s actual balloon trip. He added “realism to his description of the construction of the Victoria,” by providing details of the landscapes that the passengers viewed while they were transported in the balloon (261).

In a preview copy of Naomi Miyazawa’s Ph.D. dissertation, she notes that Poe wrote a follow-up story about his hoax in his column, “Doings in Gotham.” His article was first published in the *Columbia Spy* (Pennsylvania) on April 25, 1844. Poe bragged that the “Balloon Hoax” was his story. As he comments, “The crowd outside of the *Sun* Building was lined up and chaotic in hopes to purchase the *Extra* article on the balloon voyage.” Poe marvels that “the whole square surrounding the ‘*Sun*’ building was literally besieged...I never witnessed more intense excitement to get possession of a newspaper” (3). Miyazawa contends that Poe’s account “was another fraud.” She argues, “The story was not as sensational as Poe believed it was, and his hoax probably fooled fewer people than he thought it did” (4).

Poe's reporting of the balloon hoax story in *The Columbia Spy* confirms that he planted the original *Sun* article anonymously in the news section of the newspaper in an attempt to build credibility for his hoax. He may not have expected that he could publish a fictional story about a trans-Atlantic balloon crossing that would receive anything close to the notoriety of an anonymously written news story. Although his "Balloon Hoax" sold many newspapers, it limited his ability to write serious science journalism reports. In Poe's final journalistic style report, he also displayed a more skeptical tone than in his previous works.

Gerald Kennedy concludes, "Finally, when neither fact nor fiction would do, Poe exploited "the art—or perhaps the science of the literary hoax" (64). Poe's "desire to exploit or control the mass market" is one of his greatest literary innovations." Kennedy adds, "An attentiveness to the emerging mass market informs Poe's aesthetic writings, for he is perpetually investigating the possibility of creating a single literary text capable of satisfying both the popular and the critical taste" (67). Perhaps Poe also realized that the emerging popular topics of science also offered him the opportunity to engage in a journalistic career and to find the "jewels of the sky" he considered in "Sonnet—to Science."

Poe's interest in science was sparked by the public's excitement about the emerging popular technological trends of the nineteenth century. His non-fiction science narratives demonstrated that though he lacked professional science credentials, he had the interest and the ability to investigate complex scientific questions. Poe revealed that he had the insight to ask the important questions about the direction of science: What will the future be like if machines could think? How will the public be affected if machines could record visual images of their every activity? Writing about science through journalism required Poe to focus on several of the important scientific issues of the nineteenth century and to write about them in a



relatively objective style. However, writing about these topics through the lens of fiction also relieved him of the need to be objective and allowed him to shift his focus to writing fiction. It also allowed him to be more imaginative in the topics, themes, characters, and time periods he selected than would be possible in journalism and to introduce some of his metaphysical thinking and unique theories about the Universe. Poe's fictional science narrative writing will be discussed in Chapter III of this study, which follows.

### CHAPTER III—POE'S FICTIONAL SCIENCE NARRATIVES

*The captain's gray hairs are records of the past, and his gray eyes are sybils of the future. The cabin floor was thickly strewn with strange, iron clasped folios, moldering instruments of science and obsolete long-forgotten charts (Tales and Sketches 144).*

Several researchers have proposed that the late eighteenth and early nineteenth-century Gothic writers (a sub-group of the “Romantic” writers) informed Poe’s views of the horrors and uncertainties of science (Gewirtz, Tresch, Willis). These writers were also among the first ones who attempted to examine the ways that new technologies impacted society. Although they were well-schooled in Enlightenment Age science, they also began to question some of its assumptions. Maxwell and Trumpeter assert that the Gothic style writers “reacquainted the populace with the perverse pleasures of uncertainty.” The “Enlightenment’s assumption that truth is the product of an unmediated encounter between the eye, and its subject got sidelined when the novel acquired atmosphere, and mood-creating tone and texts” (47). The Gothic writers blurred lines between reality and illusion. They illustrated that the most compelling tales might be derived with believable scenarios from ordinary life, which then spin out of control, and into imaginative tales.

The earliest examples of these influential German Gothic writers are Fredrich Schiller and E.T.A. Hoffman, and the British writer, Mary Shelley. The 1795 English translation of Frederich von Schiller’s “The Ghost-Seer” inaugurated British readers’ interest in German tales of terror. According to Maxwell and Trumpeter, when reading this book, “one is never sure how to distinguish what is real from what is illusion” (55). Martin Willis writes that Hoffman is important because his stories generated “heated debates on the relationship between the new empirical science and the older methods of natural philosophy” (28). Hoffman’s most notable work, “The Nutcracker and the Mouse” (1816), is renowned

worldwide. The story and the ballet based on it (*The Nutcracker*) blur the lines between illusion and reality without explaining to his readers when those lines are crossed. Hoffman's "The Sandman" offers connections between science, magic, and mesmerism." As Willis argues, "Hoffman's balancing of these previously considered distinct categories, reflects the difficulty in categorizing scientific knowledge in the nineteenth century" (29). Gothic writers made significant contributions to our present-day understanding of how the public learned about science in the early nineteenth century. They also defined the relationships between magic and science, and between illusion and reality. Martin Willis asserts that Mary Shelley's *Frankenstein* is important because it is a "condemnation of the overreaching scientist." He describes Shelley's work as a "cautionary tale of scientific hubris." He also argues that the novel "critiques the role of science in the early nineteenth century" (63).

The Gothic writers also were important because they incorporated the public's uncertain reactions against the dehumanizing effects of the expansion of nineteenth-century industrialization and the rise of the power of machines and mechanistic processes. Poe and the "Romantic" period writers felt this mechanistic view detracted from natural human tendencies, such as emotion, reason, and creativity. These writers criticized rational and empirical scientists as being detached from emotion and artistic creativity. They also blurred the boundaries between scientific disciplines, and between science and pseudo-science. Poe was inspired by several of their approaches and established Gothic tones of uncertainty and terror in several of his science fiction narratives. He also extended Gothic themes and created new forms of fiction that he based on his reactions to the themes of Industrial Age science.

In "The Rationale of Verse" (1846), Poe commented on how "Romantic" writers of the nineteenth century inspired the ways that he wrote about the debates between science and

literature. Drawing an example from these discussions, William Wordsworth's poem, "The Tables Turned" (1798) cautions that scientists ruin nature when they over-analyze it:

Sweet is the lore which Nature brings;  
 Our meddling intellect  
 Mis-shapes the beauteous forms of things:--  
 We murder to dissect.

Chapter III, on Poe's fiction, is organized into three sections: *Tales of Ratiocination*; *Imaginary Journeys*; and *Metaphysical Explorations*. *Tales of Ratiocination* introduce Poe's scientific thinking, ratiocination, which employs both analytical and intuitive processes. He criticizes the ineffective methods of the police—who serve as symbols for his criticism of the methods of nineteenth-century science and professional scientists.

*In Imaginary Journeys*, Poe moves away from the realities of the nineteenth century and visits previously unexplored regions of the earth, time, and outer space. Readers do not know whether his characters have been doomed to isolation and death, or if they are happy that they cannot return to the Earth. Such indeterminate endings, make it difficult for readers to conclude when Poe was praising and when he was criticizing nineteenth-century science. This type of open-ended writing foreshadowed twentieth-century post-modern writing. Poe also anticipated that the advancements of distant future civilizations would dwarf nineteenth-century technology and culture. In *Metaphysical Explorations*, Poe suggests that science may be dangerous and out of control in the near future. The stories discussed in this chapter will cite from Thomas Mabbott's *Tales and Sketches* unless otherwise noted.

### *Tales of Ratiocination*

Urban crime was an area of acute interest in the nineteenth century because the public feared that it was rampant and out of the control of the police. To respond to this concern, Poe

demonstrates increasingly complex aspects of his science and intuition-based system of crime solving, which he called “ratiocination,” in his three Auguste C. Dupin tales. Ratiocination is not listed in most dictionaries. However, it may be defined by deconstructing its syllables and associating it with other related words. A ratio compares the relationships between two quantities. Poe develops a new system for establishing relationships between unknown events and the motives or solutions to a problem. Dupin expands the use of accepted nineteenth-century classical investigation techniques and adds hyper-observation and intuitive leaps of imagination to arrive at new solutions. He understands that clues and events are not always understood simply by the way that they appear. He approaches crime solving in the same way as he solves puzzles. With the same understanding of the evidence that the police hold, he provides new metaphoric solutions. His methods of unraveling crimes are unorthodox and appear to the police as irrational. Dupin presents the details of these cases directly or through an unnamed narrator to give the readers a glimpse into his ratiocinative thinking. His narrator’s job is to be amazed at and inform the reader about the skills of the detective. Dupin separates the relevant from the irrelevant. He focuses on unexplained deviations from the normal, anticipates the actions and thoughts of his associates and opponents, and embraces information that, at first, appears to be external to the case. Each Dupin story is a self-contained armchair mystery, in that he seldom needs to leave his home to solve the crime.

In each *Tale of Ratiocination*, Poe demonstrates that Dupin’s methods of scientific reasoning are superior to those of the police. He is critical of the established authorities and power structures. The police are symbols for his criticisms of the professional scientists and the nineteenth century. He believes that scientists are limited in arriving at new solutions in the same ways that the police are limited in solving crimes. Poe’s crime-solving detective is

named Chevalier, Auguste Dupin. Chevalier is the rank equivalent to a master detective in France. Auguste means the most revered, and Dupin may be associated with the English verb “to dupe.” Thus, his name and title have ambiguous meanings. These stories then can be interpreted that Dupin is the most revered trickster to criminals, or that he is questioning the public’s irrational beliefs that scientists can solve modern complex crimes.

Matthew Pearl, in his “Introduction” to the *Dupin Mysteries*, notes that Poe introduced Detective C. Auguste Dupin, of Paris, France to literature more than five years before Boston had established America’s first professional police department (x). Poe chose Paris to be the setting of all three of his Dupin mysteries. Perhaps, he made this choice because many French scientists and philosophers epitomized Poe’s criticisms of the ideas of the Age of Reason. They rejected dogma and sought ways to find objective knowledge and believed that *truth* could be best be verified by observation and scientific investigation (Manuel). Among the ideas that Poe attacked in his detective novels was the irrational belief that man could ultimately attain near stages of perfection, and that he could control his environment by scientific methods. Because of these contradictory views, it is hard to determine if Poe proposed ratiocination to address crime, or if he was mocking the irrational faith that the Age of Reason thinkers had in science. Perhaps he may also have been “duping” his readers by presenting both possibilities simultaneously.

As a non-professional detective, Dupin mocks the inferior crime solving techniques of the paid Parisian police officials. The Prefect appears in each of the Dupin stories and serves as a symbol of the incompetence of police officials. A Prefect is the French representative of a department or Region. In 1800, Napoleon reorganized the Paris police to fall under the jurisdictions of the Prefecture of Police for security. The Paris police, right after Boston’s

Department, became one of the earliest professional police departments in the modern western world (Merriman 15-16). The Prefect thinks he has the perfect solution of the crime.

However, Dupin is always skeptical of his approach and solutions.

In “The Murders in the Rue Morgue” (1841), the Prefect asks Dupin to solve the violent murder of a mother and daughter. Dupin first explains ratiocination and how he might apply it to solving crimes. The tale opens with Dupin proclaiming: “The mental features discoursed as the analytical are, in themselves, but little susceptible of analysis” (527). He regards the unraveling of mysteries as one of the most rewarding challenges of life, stating:

As the strong man exults in his physical ability, delighting in such exercises as call his muscles into action, so glories the analyst in that moral activity that *disentangles*. He derives pleasures from even the most trivial occupations bringing his talent into play. He is fond of enigmas, of conundrums, of hieroglyphics; exhibiting in his solutions of each a degree of acumen which appears to the ordinary apprehension præternatural. His results have... the whole air of intuition. (528)

Poe speaks through an authoritative narrator’s voice. He employs his investigative skills to perform a civic or moral duty. He shows readers that a non-professional observer can be successful in untangling even the most puzzling mystery. Dupin does not believe in the traditional analytical methods of professional scientists or the police. He relates solving a crime to solving a cipher or gambling with cards or chess. He introduces a playful analysis to solving a crime—no matter how gruesome the act may have been (528). To solve difficult puzzles, he suggests that an analyst must use a combination of tools including physical action, intellectual analysis, and intuition. He elaborates: “Analytical power should not be confused with simple ingenuity; for while the analyst is necessarily ingenious, the ingenious man is

often remarkably incapable of analysis” (530). His approach incorporates the ingenious, the fanciful, and the truly imaginative. However, it is also profoundly analytic. Dupin believes that a “disentangler” needs to balance the “Romantic” and “Mechanical” approaches to arrive at the precise solution in either a crime case or a scientific investigation.

Dupin states that the Parisian Police often fail because they only analyze cases using circumstantial evidence. The “necessary knowledge” to solve a crime, he counters, is to know “what to observe” (530). He considers his methods as ingenious; he eliminates all preconceived notions and derives entirely new approaches. Poe’s stories imply that his methods of solving crimes may also be useful to nineteenth-century scientists—who are stuck in useless and outdated theories. The narrator says that he is a “fancy of a double of Dupin—the creative and the resolvent” (533). One-half detects the problem and his other half (the narrator) explains the solution. He believes that to know what to observe, he must form a strategy before seeking to understand the clues and solution. However, it is possible that in his role as the narrator, he may distort what Dupin is thinking or doing by introducing his own distorted subjective point of view.

To illustrate his superior powers of observations, Dupin observes fifteen minutes of the movements of his un-named partner, in “Rue Morgue,” to establish the connections between his actions and thoughts. However, with such demonstrations, Dupin brings more attention to his personal idiosyncrasies than to the relevant case details. The narrator, whose inner thoughts are observed, is amazed. “Tell me, for Heaven’s sake, the method... you have been enabled to fathom my soul” (534). Dupin responds: “There are few persons who have not, at some period of their lives, amused themselves in retracing the steps by which particular conclusions of their own minds have been attained. The occupation is often full of interest by



the apparently illimitable distance and incoherence between the starting-point and the goal.” The detective suggests that his skills are not abnormal but based on his ability to focus on his keen observations. The narrator reinforces his confidence in Dupin’s skills, when he states that “He could not help acknowledging that he [Dupin] had spoken the truth” (535).

Dupin’s problem-solving goes far beyond creative resolution. He employs many sophisticated skills, including tracking thoughts and actions back to their origins, making visual and auditory inferences, and reading body and facial signs (phrenology). Carlson observes that Dupin analyzes all, “masters all [including] the associative patterns of his partner’s most private thoughts” (240). Richard Wilbur contends that Poe portrays Dupin as a “godlike genius,” who “possesses the highest and most comprehensive order of mind. He includes in himself all possible lesser minds, and can therefore fathom any man—indeed any primate—by mere introspection” (qtd.in Carlson 62). According to Thompson, “Dupin is a symbolic projection of Poe’s self-assumed superiority” (118). Daniel Hoffman comments that Dupin uses what modern psychologists refer to as the “the pre-conscious mind” (107). “The rest of us rely on conscious or rational thinking; Dupin is close to the origins of being. His mind, working by metaphoric analysis, combines poetic intuition with mathematical exactitude” (108). Dupin’s character suggests that he calculates as automatically as Maelzel’s “automated” chess machine. Perhaps, though, Poe may also be “duping” the public into believing that a fictional character, like Dupin, could help to relieve them of their real fears about crime. This argument relates back to Poe’s lack of faith that the advancements of nineteenth-century science could solve the major problems of society.

In “The Murders in the Rue Morgue” (1841), the police assume that the murders have been committed by some person associated with the victim. Dupin discards this unproven

assumption and embarks on finding a different solution. Dupin concludes, after questioning all the witnesses, that the murder could not have been committed by the prime suspect, or by any human. After getting the idea from a newspaper story about an escaped orangutan, Dupin makes the imaginative connection that an orangutan must have committed the heinous deed. Kenneth Silverman writes that Poe picked the solution for the “Rue Morgue” from several articles in American newspapers written in the 1840’s that featured stories “concerning razor-wielding apes” (172). Poe’s solution also played to the public’s fears about the many unexpected dangers lurking in the streets of Paris. Mabbott notes that Walter Scott’s “Count Robert of Paris” (*Tales and Sketches*) involved murdering orangutans (523). “Orangs were popular in America, having been occasionally exhibited since 1831” (524). In identifying an ape as a murderer, Poe also enters the popular nineteenth-century discussion of evolution. The ape can also be seen a metaphor about the barbaric and primitive tendencies of humanity. Perhaps, Poe imagined that if the evolutionary process could connect men and apes, then apes might have the same tendencies to commit murders of humans. Dupin demonstrated in his first case that he could unravel *almost* any mystery.

“The Mystery of Marie Roget” (1842-43) was inspired by a popular news headline about a well-known cigar-girl named Mary Rogers. She was found dead in the Hudson River in New York. Eric Stashower writes that “The drama of Mary Rogers would be one of the earliest and most significant murder cases to play out in the pages of the American press, laying the groundwork for every crime of the century to follow.” As Poe writes, “Citizens and politicians called for a solution to the case for the streets to be made safe” (5). He informed his editor that he was planning to take up the case in a manner that had never been attempted. He proposed to study the official newspaper and police reports and report on the strengths and

weaknesses of their investigations. He wrote that he also eventually planned to offer his real-life solutions to the case. Stashower writes that “Poe’s original goal was to put pressure on the police to re-open the case” (6).

Ultimately, the story was published by *Snowden’s Ladies Companion* of New York in three serialized versions from 1842-43. After the actual murder was unsolved for a year, Poe decided to develop a fictional case, “The Mystery of Marie Roget.” Poe planned to have his fictional version run parallel to the actual reporting of the Mary Rogers case (*Tales and Sketches* 719). His approach was a tremendous gamble. However, Poe’s attempt to repay his college debts at the University of Virginia by gambling, demonstrated he was willing to wager his reputation on a speculative hunch. Any writer of fiction can design a case, knowing at the onset who committed the crime and how the investigator will solve the case. However, by stating that Dupin could derive the motive and construct the solution, Poe hoped that he could elevate his status from a literary writer to a serious non-professional science investigator.

As the “Roget” story developed, it increasingly mirrored the reported details of the Rogers case. Poe, writing as an editor, associates his story with the newspaper case. He writes, “The extraordinary he will be recognized by all readers in the late murder of MARY CECILIA ROGERS, at New York” (724). Poe, the editor, states that he believes that Dupin, who solved the “Rue Morgue” case, might be interested in trying to solve the “Rogers” murder. Poe changes the victim’s name to “Roget,” and moves the setting to Paris, the center of Age of Reason advocates. His detective stories attacked their central belief, i.e., that man could attain near stages of perfection and control his environment through science.

In Poe’s first serialized version of the fictional tale, a female body was discovered in the Seine River about three days after she left her home. Investigator Dupin rules out several

suspicious accounts reported in the newspaper, including a theory that gangs had killed Roget. Urban gangs were widespread and were a great public concern in France in the 1830's. Articles of Mary Rogers's clothing near the suspected murder scene seemed to confirm that she had been assaulted by thugs (Stashower 28). Dupin notes that the Paris newspaper, *Le Commercial*, was skeptical of the view that "Marie had been the victim of a gang of desperadoes (734). He argues that it would be impossible to consider that the beautiful and famous Marie Roget, being pursued and assaulted by gang members, would have been able to walk three blocks on the Paris streets, in the daytime, and still be unnoticed by eye-witnesses. Dupin concludes, therefore, that the newspapers reported two unconnected facts.

Dupin questions the hastily derived assumptions of the police officials about the time of death. These details were based upon reports that were printed in the Paris newspapers. The police account stated that "All experience has shown that drowned bodies, or bodies thrown in the water immediately after death by violence, require from six to ten days for sufficient decomposition, to bring them to the top of the water" (732). The implication of the police report was that the body recovered from the river after three days was not Roget's. Dupin disputes the police's conclusions and supports his claims with detailed scientific discussions. He explains that water displacement of a deceased body equalizes with the pressure of water in about three days. Thus, a dead body would have about the same weight as water in three days, or about the time that the police found Roget's body (740). Dupin's ability to introduce a scientific basis for his theory adds to the verisimilitude of his narrative. His application of forensic evidence settles a central disputed fact in his fictional and the actual case.

Dupin suggests that the police's easy and initial assumptions in the case limited them and caused them to discard important collateral events. He notices that the police case reports

did not account for the discovery of a rowboat near where Roget's body was recovered. The boat, Dupin conjectures, may have been used by the murderer to dump her in the river. Near the end of the actual and fictional case, the New York Police Department and Dupin planned to name the prime suspect. The accused is a sailor and former lover of Rogers, who went off to sea near the time that she was last seen.

Stashower suggests that the case's resolution was unfortunate for Poe and his story. "The solution of the Mary Rogers case was reported in the *New York Tribune* before Poe planned to publish his final installment." The headline read: "Mary Rogers Mystery Explained" (208). The reported details of her murder were substantially different from the story that Poe was planning to publish. Suddenly, Poe had to plot a new version (223). In the Mary Rogers case, it was the police and not Dupin who discovered the solution: Stashower speculates that most accounts of the story concluded that she died from the failed efforts of an "abortionist," who "sought to destroy his failure by disposing of her body in the Hudson River." The third and final installment of Poe's story had to go to press before he had sufficient time to re-write it and match it more consistently with the Mary Rogers case (251).

In the account that Poe does publish, he employs the voice of the editor again. He notes that the newspaper is not planning to publish the manuscript or the details of the Mary Rogers case. Poe attempts to avoid all personal responsibility for explaining the discrepancies between the actual Mary Rogers case and the "Marie Roget" story. He writes as an editor rather than as Dupin: "It should be considered that the most trifling variation in the facts of the two cases might give rise to the most important miscalculations" (*Tales and Sketches* 773). Using an analogy from dice and from his theory of "The Calculus of Probabilities," he explains how the case got off track. "The fact that 'sixes' have been thrown in succession is

generally a sufficient outcome which will cause most gamblers to wager against the odds that that they will be thrown on the third attempt.” As he argues, “What has been thrown in dice or life in the past has no influence on what may occur in the future.” He writes, “The error in the solution,” was caused by “one of the infinite series of mistakes which arise in the path of Reason through her propensity for speaking truth in detail” (773-74).

However, even the most casual reader could conclude that Poe provided an implausible solution in his quest to detect the *truth*. In suggesting that he could solve an actual unsolved murder case, he crossed the line from imagining *truth* to explaining the *truth*. Perhaps, he had also developed faith that he had the same abilities as the almost superhuman detective that he created. Another reading of this story suggests that Poe tried to use his failure to demonstrate that those who believed that men could be perfect and control the outcome of human events were doomed to failure. Poe was using an editor’s voice to justify his mistakes. A correct solution, reported before the police unlocked the mystery, would have undoubtedly generated a great deal of additional recognition to Poe as a prophetic writer and scientific thinker. In “Marie Roget,” he had rolled the dice again, but his gamble failed. This story demonstrated that it was much easier for him to design fiction than it was to cross from fiction into the boundaries of real life, where events could not be predicted or controlled. Stashower calls the “Marie Roget” story a “misstep” for Poe. He argues that the story “ruined Poe’s scheme to raise the money to start his own magazine” (251). Perhaps, after this setback, Poe did not want to leave Dupin with an unsolved case as his last one.

In “The Purloined Letter” (1844-45), the Prefect consults Dupin again. He asks him to solve the case of a potentially compromising letter stolen from the royal apartments of the French Queen. The Prefect also knows that an important Minister is the thief of the valued

letter. The motive (extortion) is also known from the onset. However, the contents of the Queen's letter is not revealed in the story. Nor are the associations between the Prefect and the Queen, or between Dupin and Minister D. described. Since both of their names start with the letter "D," it may be conjectured that they are symbolically doubles of each other, or even possibly brothers. This case also expands Poe's use of ratiocination. Dupin appears to very familiar with the "Purloiner." He immediately understands how the Minister committed the crime, how he protected himself from exposure, and how he can recover the letter. He needs to solve the case without exposing the Queen to any embarrassment or arousing the crook's suspicion. The Prefect explains that the police have repeatedly searched the hotel room of the suspected thief. He offers a reward of 50,000 francs for anyone who can recover the letter and avoid further embarrassment to the royal family. Dupin immediately asks the Prefect to write the check to him. He accepts the check, hands over the recovered document, and then provides details about how he solved the mystery. By accepting Prefect's check, Dupin does not compromise his claim that he is a non-professional detective because he did not seek or work for the reward. The police, he explains, only searched for the letter in the obvious places that they suspected a crook would hide a valuable item. Dupin understands that the Minister, who purloined the letter was more cunning than the police officials. Poe's use of the title, "Purloined," draws attention to the idea that the minister did not "just" steal the letter, but that he also used extraordinary measures to conceal it. Poe's use of the word, "Purloined" in the title gives the word a French sound. The Latin root, "pur" means to bring something forward, or to carry it to a new location. As Poe liked to introduce puns, part of the title contains the word "loin." This usage may indicate that Dupin's battle to recover the stolen letter was symbolic of a gut-level or vindictive relationship between himself and Minister "D."

Dupin understands that the Minister is a worthy adversary. However, he demonstrates that his skills of ratiocination are superior to both the ignorant police officials and the cunning professional extortionist. Although the police suspect that the Minister has obscured the letter in a hidden place, Dupin counter-reasons that the minister would hide the letter in the open. In Dupin's proposed solution, which is also the correct one, he anticipates both the thoughts and the actions of the minister who purloined the letter. In this case, Dupin has to leave his armchair to go to the minister's hotel room two times to observe the crime scene and to better understand the mind of the purloiner. During the first visit, he diverts the minister's attention with casual conversation and scans the room under the secrecy of sunglasses. He sees the obvious place where the Minister has hidden the letter. He notes that the minister inverted the purloined letter and placed the royal address and seal on the outside rather than on the inside. After this revelation, Dupin excuses himself and makes a skillful facsimile of the outside of the stolen letter. He returns the following morning, creating another pre-arranged diversion outside of the apartment. As the minister's attention is distracted, Dupin uses a little "piece of bread ("du pain" in French) to make a duplicate of the royal seal (992). The irony of this action, which is perhaps best understood by the French, is that Dupin *dupes* his opponent by making a duplication of the seal with French bread. "Du pain" sounds like Dupin's name, so he is also clearly engaged both in a personal mental and physical duel with the Minister. He installs his facsimile of the letter and retrieves the purloined letter without the minister's cognizance. On the inside, he writes, in French, on a blank sheet: "— Un dessein si funeste, S'il n' est digne d' Atrée, est digne de Thyeste." These are the same words that are found in Prosper-Joylot de Crebillon's 1707 play, *Atrée et Thyeste* (993). That play features Atrous and Thyeste, two brothers from Greek Mythology who are locked in a bloody battle of sibling



rivalry. Mabbott annotates that the translation of the note that Dupin left “D” is: “So baleful a plan, is unworthy of Atreus, is worthy of Thyestes” (*Tales and Sketches* 997). The story hints that Dupin and Minister D. may be brothers involved in a revenge plot.

As Poe moved away from detective tales, his *Imaginary Journeys* relieved him of the need to consider the realities and the limitations of writing about the nineteenth century. His next category of stories takes place in undetermined times and locations.

### *Imaginary Journeys.*

In *Imaginary Journeys*, Poe continues to emphasize his concerns about the shortcomings of nineteenth-century science. His central concern was that *truth* is not always as predictable and certain as nineteenth-century scientists had been claiming. Instead, he believed that neither scientists nor the public could ever be sure about *truth* because it is relative and constantly being revised by new observations. From his point of view, science involved both what could be observed and what could be imagined. For example, a news story about space could also speculate about the future implications of space travel. A tale about a man “mesmerized” and interviewed near death could be viewed as one which introduced new *chilling* possibilities on this topic. Such a story could also demonstrate some of the possible future horrors of science. Poe’s works also crossed the boundaries between the certainties and uncertainties of science, confronting readers with making difficult decisions. Was what they were experiencing real or imagined? He made their decisions more difficult by embedding elements of accepted scientific ideas into his imagined stories.

Poe’s first published tale, “MS. Found in a Bottle,” (1833) won the *Baltimore Visitor* first prize for fiction. Mabbott calls it a “masterpiece,” and contends that “winning the prize

and contest set the author on the way to lasting fame” (*Tales and Sketches* 131). According to the *Visitor*, “Poe’s tales are eminently distinguished by a wild, vigorous and poetical imagination, a rich style... and a various and curious learning” (Thomas and Jackson 137). “MS.” reveals Poe’s interest in writing about a broad range of science-related topics, including secret writing, conundrums, scientific realism, and life after death. Carlson contends that the story mocks the popular sea voyages of that period, specifically those of Captain Adam Seward’s (pseudonym for Captain John Symmes) 1820 *Symzonia-a Voyage of Discovery*. Symmes’s “Theory of Concentric Circles” proposed that the Earth is hollow at both Poles (119). It presumed that a ship approaching the Poles would be sucked into an abyss through the earth. Poe selection of the story’s setting indicates that he was well aware of the public’s interest in this scientific topic.

Poe writes as a science journalist who is intending to submit his story to a travel or nautical magazine. He reports, “Our vessel was a beautiful ship of about four hundred tons, copper-fastened and built at Bombay of Malabar teak. She was freighted with cotton-wool and oil, from the Lachadive islands.” Isaac Gewirtz contends that “Poe’s story was never meant to correspond with the world. The location was selected to flaunt transparent and geographic pretense” (23). Poe writes, “We also had on board coir, jaggeree, ghee, coconuts, and a few cases of opium” (136). He also uses both scientific and literary language to add to the realism of the story. “The hulk flew at a rate defying computation, before rapidly succeeding flaws of wind, which, without equaling the first violence of the Simoon, were still more terrific than any tempest I had ever before encountered” (138). As the ship advances, the boundaries between reality and imagination become blurred. The narrator’s invisibility to the crew suggests that the entire journey is taking place in his mind; the narrator can see the crew

and captain of the ship, but they cannot see him. He remarks, “About an hour ago, I made bold to thrust myself among a group of the crew. They paid me no manner of attention, and, although I stood in the very midst of them all, seemed utterly unconscious of my presence” (143). By being unobserved, the narrator is looking at the relics of science as an outsider. He concludes that much of nineteenth-century science is outdated and largely based on theories of misguided scientists like Francis Bacon and Captain John Symmes.

The narrator describes the ship as having a “severely simple bow and antiquated stern,” that reminds him of “an unaccountable memory of old foreign chronicles and ages long ago.” The captain’s “gray hairs are records of the past, and his gray eyes are sybils of the future. The cabin floor was thickly strewn with strange, iron clasped folios, moldering instruments of science and obsolete long-forgotten charts” (144). Poe believed that the tools of nineteenth-century science could not chart a course to the future and that the captain was sailing to an unknown destination and using outdated maps. The narrator’s assumptions, about the inadequacies of the ship, are confirmed as the journey reaches the frightening abyss Symmes imagined at the South Pole. Poe exploits and, perhaps satirizes, Symmes’s theories, and the fears that readers associated with such beliefs as the narrator encounters the Pole’s vortex:

Oh, horror upon horror!—the ice opens up to the right, and to the left, and suddenly we are whirling dizzily, in immense concentric circles, round and round, the borders of a gigantic amphitheater, the summit of those walls is lost in the darkness and the distance. But little time will be left me to ponder upon my destiny! The circles grow small—we are plunging madly within the grasp of the whirlpool—amid a roaring... and thundering of ocean and of tempest, the ship is quivering—oh God! And—going down. (146)

Poe uses the phrase, “whirling dizzily,” to indicate that those who believe in the systems of nineteenth-century science will soon be whirling around. Scientists will be too dizzy to understand what is happening to them when new technologies replace their antiquated belief systems. The dark and distant walls represent the barriers that are blocking progress to a more enlightened future. He regrets that by associating with this ship and these antiquated ideas, he will have little time to “ponder about his destiny.” Poe’s narrative flaunts the distinctions between uncertainties and dangers of nineteenth-century discoveries. The above phrase also introduces his obsessions with death. He uses the term, “immense concentric circles” to mock the “Concentric Circles” theory. The antiquated approaches that scientists have thus far trusted, he suggests, will be inundated by the roaring, “bellowing, and thundering of the ocean and tempest.” The foundations that they have based their beliefs on are “quivering.” Poe’s use of the word, “God,” juxtaposed with “going down,” suggests that he believed that organized religion is also going down along with the antiquated beliefs of nineteenth-century science. However, this word usage also suggests that Poe believed in a Supreme Being. The term “whirling dizzily” also indicates that he realized that the Universe is being controlled by a force much greater than humans can ever imagine. As the ship is sucked into the Pole, the narrator thrusts the journal into the sea— hopefully for readers of the future to discover.

“Some Words with a Mummy” (1845) is considered in this study as an *Imaginary Journey*. Although the narrator does not travel anywhere, the mummy travels from ancient Egypt to the nineteenth century. Poe’s literary device allows the mummy to provide a view of nineteenth-century science that is different from the view widely understood by professional nineteenth-century scientists. Mabbott notes that the public, at that time, was fascinated with “Modern Egyptology.” The 1799 discovery of the Rosetta Stone revealed much previously

unknown information about Egyptian civilizations and several major museums offered exhibits of Egyptian artifacts and entombed mummies (1175).

The narrator invites nineteenth-century “gentlemen” friends to his house to “unwrap” and examine a mummy that they have borrowed from the “Directors of the City Museum” (1178). They invigorate “Count Allamistakeo” with a voltaic shock. His name is both ironic and satiric because he begins to count many of the mistakes of nineteenth-century science and civilization. As soon as he wakes up, the gentlemen boast about nineteenth-century advances in phrenology, mesmerism, transportation, steam engines, and metaphysics. After listening to their claims, the mummy is unconvinced that there has been much scientific advancement in the nineteenth century in comparison to those of ancient Egyptian civilizations. He informs the “gentlemen” that ancient Egyptians lived for thousands of years and could exist in a state of hibernation for as long as they wished. He boasts that his civilization practiced an extremely advanced system of Phrenology. He asks the “gentlemen” to look at Egyptian architecture and notice that it is far superior to the best building examples of the nineteenth century (1192). The railroads, he adds, are “rather ill-conceived” in comparison to the “grooved causeways” built by the Egyptians. The Count argues that the Egyptians determined that what the nineteenth-century gentlemen referred to as “Progress,” was “quite a nuisance” (1193). He discounts the high value placed by the scientists regarding the developments of the nineteenth century and western civilization. In his criticisms, he forcefully argues that culture and the quality of life are more important than scientific progress when attempting to determine whether any civilization is considered as advanced.

It is ironic that the only triumph of the nineteenth century, that the mummy concedes to the “gentlemen” is its development of blood-purifying laxatives and cough lozenges. These

remedies demonstrate that Poe lacked faith that science could cure the ailments of humanity. He wanted to get as far away from the assumptions of the nineteenth century as he could imagine. The narrator is profoundly *congested* by the mummy's revelations. He exclaims, "The truth is I am heartily sick of this life and the nineteenth century in general. I am convinced that everything is going wrong." He states at the end of the story that he would like to "get embalmed for a couple of hundred years" (1195). Perhaps he also wished that he could also hibernate for two thousand years and wake up to enjoy the glorious future he imagined.

In Poe's final *Imaginary Journey*, "Mellonta Tauta" (1849), the narrator, Pundit, embarks on a balloon trip to outer space in the year of 2848, and writes a letter narrating the details of his journey. The name that Poe gives his narrator suggests that he is a pundit, or a knower of sublime truth. However, Poe may have selected his character's name because he sought to deliver a satiric presentation of science fiction. Pundit records his adventures in a journal that is presumed to have been from the nineteenth century. "Mellonta Tauta" is one of the earliest fictional works to explore time travel. The narrator outlines his view of the history of science and his objections to nineteenth-century science. He also describes the technologies he sees in the future. The narrator's opinion also likely represents Poe's views on the topics he discusses in this story.

Pundit begins his review by stating that "In all the ages the great obstacles to advancement in Art have been opposed by the so-called men of science." He says that our men of science are not quite as "bigoted as those of old" (1294). He refers to the wise "Hindoo" philosopher, "Aries Tottle" [Aristotle]. During the dark ages, "metaphysicians" tried to dispel the "singular fancy that there existed but *two possible roads for the attainment of Truth!*" He lectures that Aristotle relieved them of this misconception by introducing "the

deductive or a priori mode of investigation.” Aristotle started with what he called “self-evident truths and then proceeded “logically” to results.” His disciples and their system of thinking “flourished supreme” until the “advent” of Francis Bacon in the seventeenth century. He “preached... the a-posteriori or inductive [system].” Bacon “proceeded by observing, analyzing and classifying facts...into general laws.” Pundit concludes that Bacon “operated to retard the progress of all true knowledge—which makes its advances almost invariably by intuitive bounds.” For hundreds of years, he states, “a virtual end was put to all thinking” (1295). Pundit proposes that the only valuable knowledge gained in the history of science was by men who combined the methods of science and intuition to solve scientific problems. He notes that Newton “owed the truth of gravitation” to Kepler. Kepler “guessed—that is to say, imagined” [gravity]. Kepler, Pundit remarks, unraveled gravity like a “cryptographer unriddles a cryptograph” (1297-98). This process is also similar to conducting hermeneutic (literary interpretation) verses scientific inquiry.

Pundit reports that the passengers see a “magnetic cutter in charge of the middle section of floating telegraph wires.” He comments that it was once “impossible to convey the wires over the sea, but now we are at a loss to comprehend where the difficulty lay.” In this passage, Poe anticipates electronic communications. Near the floating electric wires, a man has been knocked overboard “from one of the small magnetic propellers that swarm in [the] ocean below us.” The narrator comments, stoically, that the detached man was “soon out of sight.” He continues, “I rejoice, my dear friend that we live in an age so enlightened that no such thing as an individual is supposed to exist. It is the mass for which the true Humanity cares” (1293-94). Pundit may be commenting on a period in the future when society had formed into a unified collective, as reflected in Karl Marx’s 1848 *Communist Manifesto*. Articles about

Communism had also been reported in American newspapers in the 1840's (Evans). Perhaps by bringing up this observation, Poe may have also been expressing his opposition to the contributions of the individual creator in society. However, his opposition to individualism appears to be contrary to the fact that Poe was a lone creator in a society that did not fully appreciate his individual contributions. However, Pundit may also have been observing a time in the future of the Universe when all souls had been assimilated into a Supreme Being.

Pundit speaks about the *Milky Way*, which he observes through telescopes that are vastly improved over the ones used in the nineteenth century. He challenges the thinkers of his age to “attempt to take a single step towards the comprehension of a circuit” so utterly incomprehensible. He marvels that “A flash of lightning itself, traveling forever upon the circumference of this inconceivable circle, would still *forever* be traveling in a straight line (1301-1302). The flight ends when the balloon collapses and tumbles into space and Pundit remarks, “Whether you get this letter or not is of little importance, as I write altogether for my own amusement. I shall cork the MS. up in a bottle, however, and throw it into the sea” (1305). Despite this statement, Poe likely wished that his story would be discovered by enlightened individuals in the future. “Mellonta Tauta” further demonstrated that Poe was critical of nineteenth-century science but optimistic about distant future civilizations.

### *Metaphysical Explorations*

Poe presents his unique theories about life, death, and the Universe in his *Metaphysical Explorations*. He believed that investigations and discussions on these topics should be unobstructed by the pre-conceived ideas that were being advanced by the majority of nineteenth-century scientists and religious leaders. The Online *Oxford English Dictionary*



defines metaphysics as “A branch of philosophy that deals with the first principles of things or reality, including questions about being, substance, time and space, causation, change, and identity; and theoretical philosophy as the ultimate science of being and knowing.” Mabbott notes that scholarly discussions of Poe’s metaphysical stories typically focus on “elements of Poe’s mature reflections on man, God, and the universe” (*Tales and Sketches* 162).

In “Mesmeric Revelation” (1844), Poe focuses on mesmerism by offering a work that is a combination of fiction and an essay on his beliefs on that topic. In the late eighteenth century, Franz Anton Mesmer developed the earliest known theories of mesmerism, which was the forerunner of what we now call hypnotism (Willis). As Mabbott notes, “Poe was, at least for some time, interested in mesmerism.” He was exposed to numerous “lectures, demonstrations, and publicity, both responsible and irresponsible, that had intensified general interest in mesmerism; sensationalism and quackery were concurrent with serious scientific investigations.” In April 1845, Poe wrote, in *The Broadway Journal*, that Chauncey Townshend’s *Facts of Mesmerism* “was one of the most profound works of the day—a work to be valued properly only in the time to come” (*Tales and Sketches* 1024-25).

In “Mesmeric Revelation,” a man who is hovering between life and death believes that he has gained some revelatory insights. He describes what he is *experiencing* in the *after-life* to the interviewer-narrator. The narrator states that he is not planning to defend mesmerism against its many critics. He remarks, “I am impelled, even in the teeth of a world of prejudice, to detail without comment, the very remarkable substance of a colloquy, occurring between a sleep-waker and myself” (1030). The “sleep-waker” is placed in a mesmeric trance. He reveals that he has been skeptical all along about the existence of a soul and the abstractions and the false claims about science and religion (1031). The narrator establishes further

confidence in the “sleep-waker” by noting that Vankirk has been offering his prophecies in the form of “ratiocination” (1031). When asked about the Creator, he responds that he does not know what the word “God” means. However, he somehow associates it with the humanly constructed words, “truth” and “beauty.” He continues, “Man thus divested would be God,” thus, “unindividualized.” He explains, “We must imagine an action of God returning upon itself (1036). To Vankirk, life and death are transitory states. He compares death to the change taking place between a “worm and a butterfly.” What we call “death, is but the “painful metamorphosis.” Man’s “present incarnation is progressive, preparatory, and temporary,” whereas, “Our future is perfected, ultimate, and immortal” (1037). The interviewer reports that the “sleep-waker” suddenly “expired,” but with “a bright radiating smile irradiating all of his features.” The narrator asks if “the sleep-waker” may have been addressing him “from out of the region of the shadow” (1040)?

Poe relies on the authority of the “sleep waker’s” interview to help to provide nineteenth-century readers with answers to life’s unanswered questions. He likely accepted Vankirk’s views and used a similar line of thinking to form his theories about the *truth*. He discounted the notion that either science or religion could provide valid versions of *truth*. He believed that both institutions were built on the myths that society and institutions had accepted on faith for thousands of years. New models of explaining *truth* were being developed so rapidly in Poe’s lifetime, that neither scientists nor the public could detect what reality was and what was contrived. The lines between science and pseudo-science were also so blurred in Poe’s lifetime that many professional scientists were uncertain about which disciplines were “legitimate.” The instability of the accepted views of *truth* also helped facilitate the climate that Poe exploited when he published his metaphysical narratives. In

“Mesmeric Revelation,” Poe wanted his readers to believe that a dying man placed in a mesmeric trance could provide *ultimate* answers about the Universe through “ratiocination.” Perhaps, he expected that the public would believe his explanations since he laced them with the popular pseudo-scientific terminologies of mesmerism. Poe may have also wanted his readers to think that he, like Dupin, could anticipate and translate the motives of the Creator of the Universe.

It is hard to conclude whether Poe believed that mesmerism could truly reveal such profound *truths*. Perhaps, he was using this story as a metaphor to mock the irrational beliefs of the public in the nineteenth century. Silverman argues that the revelations that Poe offered were both “authoritative and symbolic” (59). The “sleep-waker” symbolized the highest authority from beyond. Poe’s mesmeric view proposed that all matter and life forms are connected by invisible threads of “particled matter.” He also concluded that the mind and thought are governed by the “law of “Divine Volition.” These ideas form the basis for Poe’s metaphysical theories in *Eureka*. These beliefs, however, are also connected to the nineteenth-century discourse of Pantheism. Richard Hardack defines American Renaissance Pantheism “as a system of representation... that codified mankind’s relationship with nature” (3). Although Poe borrowed ideas from Pantheism, his theories minimized religious discussion and explained the Universe in scientific and metaphysical terms.

“Mesmeric Revelation” and “The Facts in the Case of M. Valdemar” (1845) are thematically connected. In “Valdemar,” the narrator manipulates the “sleep-waker” for experimental purposes. Poe is interested in determining whether Valdemar might be a proper subject of mesmerism, or at least if he can delay his death. Valdemar is attended at his bedside by a doctor and several medical assistants who report on his medical signs. Valdemar asks the

doctor to let him die peacefully. Instead, “P” keeps him in a mesmeric state (See Figure 3 below). After seven months, the staff decide to wake him from what appears as his death. Valdemar answers, "For God's sake!—quick!—quick!—put me to sleep—or, quick!—waken me!—quick!—I say to you that I am dead,” as he disintegrates into a putrid mass (1242-43).

Poe based his story on doctors who performed surgeries while patients were in semi-conscious states. He first published “Valdemar” anonymously as a news report. The story was quickly republished, using Poe’s name, in a sixteen-page pamphlet, titled “Mesmerism in Articulo Mortis,” which reported that the story is “only a plain recital of the facts, so extraordinary...as to surpass belief” (*Poe Log* 622). Mabbott reports that the *Popular Record of Modern Science* also “gave some credence to the story.” In December 1845, the *Broadway Journal* reprinted a *New York Tribune* review stating that “Whoever thought it a veracious recital must have the bump of faith” (*Poe Log* 340). Poe responded to the *Tribune*’s comments when he asked, “Why cannot a man’s death be postponed indefinitely by Mesmerism? Why cannot a man talk after he is dead” (*Poe Log* 340)? In March 1847, Poe wrote that “Valdemar was a hoax of course” (*Tales and Sketches* 1232).

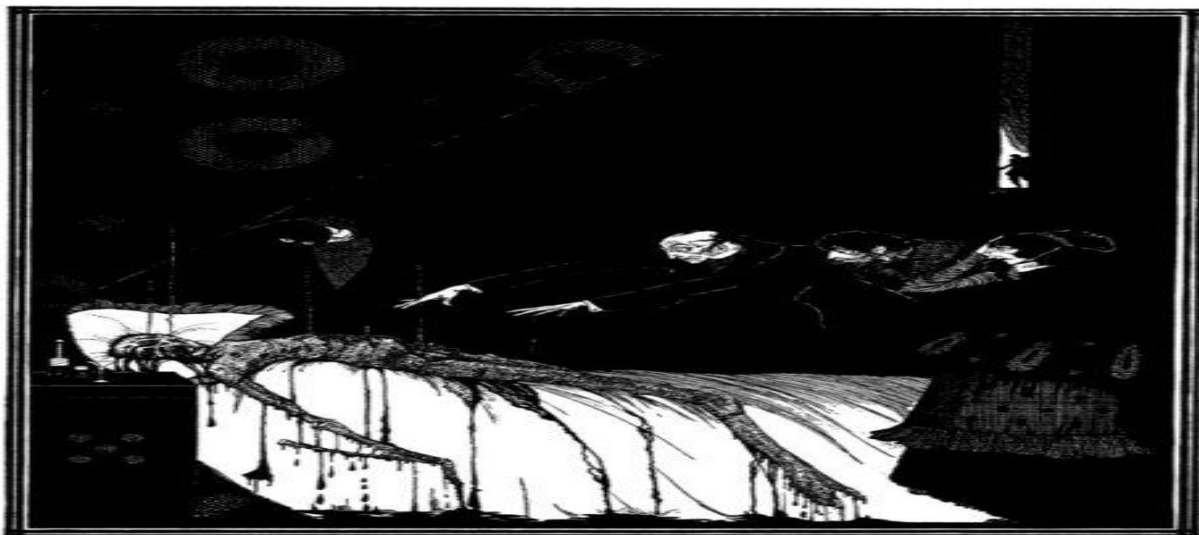


Figure 3. “The Facts in the Case of M. Valdemar”

By having Valdemar's body explode, Poe graphically demonstrated that he believed that it is far more natural to die by normal means than by trying to prolong life unnaturally. However, "P" insists on keeping the experiment going. This irresponsible act represents the potential of unfettered scientists to run amok and harm the public. The story also reminds readers of the horrific scenes that Mary Shelley conjured in *Frankenstein*. In her story, a monster was out of control. In Poe's, it was the doctor who was out of control. "The Facts in the Case of M. Valdemar" is Poe's most cynical view of nineteenth-century science—suggesting a future that might include gruesome and torturous scientific experiments.

"A Descent into the Maelstrom" (1841) is another Poe story about a man reflecting on his life in the face of death. "Maelstrom" is regarded in this study as a *Metaphysical Exploration*, because Poe begins to expand on his ideas of *Ultimate Truth*. "Descent" is thematically connected to "MS. Found in a Bottle." However, several important characteristics distinguish the two stories. The character in "MS." is presumed to have perished in a whirlpool and sucked into the hollow tube at the South Pole. In "Maelstrom," the narrator fears death but concludes that it is futile to resist the inevitable. Silverman calls "Maelstrom" a "hair-raising tale that records the narrator's thoughts and feelings as he churns in an immense whirlpool, terrified at being swallowed up" (169). The narrator exclaims, "With the wind that now drove us on, we were bound for the whirl of the Strom, and nothing could save us!" As death becomes a certainty, he reflects, "How magnificent a thing it was to die in such a manner, and how foolish it was to think of... my own individual life, in view of so wonderful a manifestation of God's power" (*Tales and Sketches* 588).

Thompson asserts that Poe's emphasis on mesmerism reflects his interest in the subject of "submission to a larger design of nature" (170). The narrator feels privileged to have had

the opportunity to experience and to absorb himself into a powerful energy, like the maelstrom, that is much greater than his small individual self. He begins to appreciate human life more than he had previously. As his senses are heightened, he proclaims, “But, we were now in a great measure, rid of annoyances—just as death-condemned felons in prison are allowed petty indulgences, forbidden them while their doom is yet uncertain” (589). As the maelstrom increases its intensity, the narrator accepts death. “The boat appears to be hanging, as if by magic, midway down, upon the interior surface of a funnel.” Poe compares the suspension of the boat to that of a narrow bridge, or a “pathway between Time and Eternity.” The ship is circling uncontrollably down an apparently endless abyss in a dizzying and unstoppable motion. As the narrator tries to make out the features of the mist, he encounters a “rainbow” (591). In this ending, Poe signals that he sees redemption and salvation in death. Poe continues themes about his final acceptance of death in *Eureka: A Prose Poem*.

In *Tales of Ratiocination*, Poe offered his unique way of solving mysteries and conducting scientific inquiries. In *Imaginary Journeys*, he explored undetermined geographical territories and the boundaries of time and space. On these adventures, he also took the opportunity to criticize the methods of nineteenth-century science and scientists. In *Metaphysical Explorations*, Poe introduce readers with several of his most detailed theories about the deepest mysteries of the Universe. As his writing and his life advanced, he was more interested in developing and advancing new theories about the Universe than in writing popular stories to entertain and educate the public. Poe’s theories about the Universe and the critics’ reactions to his culminating and most detailed science narrative, *Eureka: A Prose Poem*, are explored in the next and final chapter of this study.

*It will be found that, while one cannot unriddle the commonest cipher, the other will scarcely be puzzled by the most abstruse (Tales and Sketches 116).*

#### Chapter IV – *Eureka: A Prose Poem*

Poe's later fiction writing focused on the themes of science and metaphysics. His stories went beyond conventional scientific writing. They explored the origins and nature of life, and what happens to the human soul after death. An understanding of the themes and ideas advanced by Poe in his previous works provides valuable clues for those readers attempting to decipher his enigmatic final work—*Eureka: A Prose Poem* (published in July 1848). When Poe announced that his subsequent project would be about the Universe, there was both a great deal of interest and concern from his typical readers. Was this to be a poetic work, a science treatise, a work of philosophy, or imaginative fiction based on scientific realism? Poe's *Eureka: A Prose Poem* turned out to be a hybrid work containing each of the major writing genres he had used throughout his career.

Although there were similar contemporary science compendiums, no other works combined genres in the ways that Poe did in *Eureka*. Poe likely selected his title from an utterance pronounced by the ancient scientist, Archimedes. While taking a bath, he exhorted, "Eureka...I have found [it]," indicating that he understood the theory of water displacement (qtd. in Levine 117). In Poe's lifetime, miners in California shouted this phrase after they discovered gold. Poe also believed that he had found *the answer* and that *Eureka* was the culmination of his life's work. He wrote to his aunt, Maria Clemm that "I have no desire to live since I have accomplished Eureka." He boasts that "Newton's discovery of gravity was a mere incident compared to the discoveries revealed in this book" (Broussard 51).

Despite Poe's beliefs about his book, most nineteenth-century readers and critics found his subject matter and enigmatic writing style tough to understand or evaluate. Poe even advised critics to judge his book "after I am dead" (*Complete Works XVI* 183). With such a strong statement, it is questionable whether he ever intended nineteenth-century readers to understand his book in or after his lifetime. Therefore, it is conceivable that he wrote part of his book in cryptographic code. Perhaps he wanted to offer readers and critics the challenge to attempt to unravel *Eureka* over a period of many years—like the documents he threw overboard in "MS. Found in a Bottle" and "Mellonta Tauta." From after it was published, to the present period, trying to evaluate *Eureka* has been a formidable challenge for most critics. Many of the literary critics who have attempted to evaluate it have been frustrated by its complex writing and technical language. Whereas, many of the scientists who have tried to assess its merits have noted that it is too literary to be considered as a work of science.

As a result of these obstacles, I will not attempt to conduct a comprehensive evaluation of *Eureka*. However, I will suggest some basic ideas on how scholars could conduct a comprehensive future evaluation of Poe's book. My study focuses on four main objectives. The first is to discuss two nineteenth-century non-professional science writers (Alexander von Humboldt and Robert Chambers), whose books most influenced Poe's decision to write *Eureka*. The second section provides a summary of several of the important scientific ideas promoted by Poe in *Eureka* and comments on how they compare with the accepted foundational theories of nineteenth-century science. The third objective focuses on how Poe expands several of the themes and plots from several of his previous science narratives in *Eureka*. The fourth and final goal of this chapter is to discuss the significance of the commentary about *Eureka* during and after Poe's lifetime. Critical remarks offered by



writers of different fields also reflected the debates about science that were raging during the nineteenth century between artists and scientists, and between professional and lay scientists. Poe's citations in this chapter on *Eureka*, unless otherwise stated, will be taken from the *Complete Works of Edgar Allan Poe, Volume XVI*, edited by James A. Harrison.

As Edgar Allan Poe entered the year of 1848, he had secured a lasting name as one of the major writers of America (Miller). Although he had been a successful poet and journalist, his fictional works were his most popular. However, he was likely looking for a new opportunity to offer his comprehensive ideas about science, so that he might enjoy critical as well as commercial success. As he surveyed the influential and popular publications of his lifetime, he became aware that the most notable were the compendiums of accumulated and emerging scientific knowledge written by the lay scientists, Alexander von Humboldt and Robert Chambers. Their works surveyed the cumulative trends, inventions, and theories about science. Unlike many of the professional scientists of their day, both wrote in a narrative style aiming to reach both the educated reader and professional scientists. Thus, it not surprising that Poe identified with their works and shared many of their themes.

Alexander von Humboldt published five volumes of *Cosmos* between 1845 and 1862. The first volume was published about three years before *Eureka* and covered topics as diverse as astronomy, biology, geography, zoology, and philosophy. Nicholas Rupke, writing the "Introduction" to Humboldt's book, noted that it was "an immensely popular book, a great success, both for its author and its publisher." Regarding its sales, "*Cosmos* made Humboldt the most successful author of his generation" (vii). Reviews of nineteenth century and contemporary commentary note that the book received almost universal acclaim (xix –xxxv). As Rupke writes, "Cosmos was the supremely respectable book of science literacy, defining

both the scope and the form of scientific discourse” (xxvii). Poe was likely influenced by the breadth of scientific subjects broached and noted that Humboldt’s writing style appealed to the public. Werner argues that “both Poe and Humboldt mediated the opposing forces of democratic ‘diffusion’ and professional specialization by grounding science in perception, reason, and imagination, thus providing a model for non-professional scientific participation” (45-46). Humboldt’s writing style was unique, in that it emphasized a holistic approach. Specialization of sciences into many different branches had been for many years the preferred system by most scientists. Humboldt wrote that in studying nature “we find its noblest and most important result to be the knowledge of the chain of connection, by which all natural forces are linked together and made mutually dependent upon each other” (23).

Werner writes that Humboldt condemned the rigid over-specialization of the emerging branches of science. He also criticized many of the established scientists who quickly dismissed the newly emerging practices of his day as being too theoretical and impractical. This restrictive thinking, he believed, overlooked the fact that the latest radical sounding theories often contained the seed for future accepted science principals (52). As Humboldt writes, “The history of science teaches us the difficulties that have opposed the progress of this active spirit of inquiry. Inaccuracies and imperfect observations have led, by false deductions, to the greater number of physical views that have been perpetuated as popular prejudices among all classes of society.” He was cautious about not wanting to spread what he regarded as misleading information about the popular pseudo-sciences of the day. He writes, “The imagination reveals in strange and fantastic creations.” Instead of examining nature, “men are led to conjecture, dogmatize, and interpret supposed facts that they have never observed” (37). To distinguish between these pseudo-sciences and his work, Humboldt states

that his work is based on empirical observation. He concludes that “The most important result of a rational inquiry is... to establish the unity and harmony of this mass of force and matter.” Humboldt also believed that among the noblest tasks of a writer is to educate the public about the marvels of science and the wonders of nature (24-25).

Poe agreed with Humboldt’s about the importance of educating the public to learn about science through imaginative writing. However, as noted in “Melonta Tauta,” Poe thought that it was also important to add intuition and creativity to empirical discovery in science. He also illustrated in “Mesmeric Revelation,” that he differed with Humboldt about the value of contested pseudo-sciences like mesmerism. Poe contended that disputes about these studies would ultimately be resolved after science learned the ultimate “*Truths*” about the Universe. Despite the few disagreements he had with Humboldt, Poe viewed *Cosmos* as a successful model for his planned comprehensive science narrative, *Eureka*, and ended up dedicating *Eureka* to Humboldt (*Complete Works XVI* 186). Poe’s book would also emphasize one of Humboldt’s most important themes—the unity of all the forces in the Universe.

Poe also acknowledged another very popular and significant science compendium written around the same period as *Cosmos*—*Vestiges of the Natural History of Creation and Other Evolutionary Teachings* (1844) by Robert Chambers. In a hugely ambitious synthesis, it combined astronomy, geology, physiology, anthropology, and theology in a general theory of creation. James A. Secord offers an extensive commentary and analysis of Chambers’s extraordinary work, writing that Chambers published his work as an anonymous author and worked hard to keep his secret. Chambers, like Humboldt, also proposed that a unifying principle connects all energy and matter in the Universe. He did not want critics to evaluate the information he gathered in his book before deciding to reject it “a priori,” because the

author was not a professional scientist. *The Poe Log* also documents a review in the February 10, 1848, issue of the *New World*, where Poe makes a positive reference to *Vestiges* in his promotional lectures on *Eureka*. The reviewer Deicus noted that Poe said that he was “indebted to Robert Chambers’s *Vestiges of Creation*, as well as to the work of Sir William Herschel, and the Marquis de Laplace” (723).

There were several reasons why *Vestiges* was considered a sensation, despite the fact that it was widely scorned by scientists and religious leaders in the years immediately after its publication. Readers were fascinated that an unknown author could publish such an extensive book, with such apparent authority, on such a wide range of scientific topics. Scientific writing, up to *Vestiges*, was produced almost exclusively for audiences of learned men of science, medicine, religion, and esteemed social status. These men, and the institutions they represented, controlled the flow and content of information, and regulated which authors could be accepted as authoritative. English scientists who wished to be published needed to have their works conform to the teachings of the Church of England. Secord asserts that it was only by publishing Chambers’s book anonymously that the author could offer radical new scientific teachings without being personally subjected to the scorn and rejection of scientists and religious leaders (17-24). As Secord concludes, “*Vestiges* exercised its most important influence by providing a template for the evolutionary epic—book-length works that covered all of the sciences in a progressive synthesis” (461).

Chambers’s book confounded literary genres as *Frankenstein* had done earlier in the nineteenth century. People who read literature were suddenly interested in reading about science. In Poe’s lifetime, people lived in a world where the boundaries between the established and the emerging branches of science were changing and being contested. *Eureka*,

like *Cosmos and Vestiges*, offered a unified view of the Universe, provided a theory of creation, and crossed the boundaries between several established professional disciplines.

### Poe's "Universe" Lectures

Critical reviews of "The Universe" lectures and *Eureka* will be cited from the *Poe Log* by Thomas and Jackson, unless otherwise noted. On February 5, 1848, the *Home Journal* (New York) published an advance review of Poe's lecture on the "Universe." The reviewer stated that "The subject is a rather broad one—The Universe; but from a mind so original no text could furnish any clue to what would probably be a sermon... it will be compact of thought, most fresh and suggestive." He "takes his genius and its limitations to pieces with a skill wholly unequaled on either side of the water" (729). Gerald Kennedy notes that by early 1848 miners had discovered gold in California and Poe had also started writing a new book (55). Poe was hoping to enlighten the public as well as to achieve popular success and financial stability with *Eureka*. To further these aims, Poe planned to offer a series of lectures on the Universe to promote his book. By all accounts, his talks did draw attention to his book, but not all of the comments offered about it were positive.

On January 30, 1848, the *Weekly Universe* announced that "Mr. Poe is not merely a man of science—not merely a poet—not merely a man of letters. He is all combined" (719). Poe delivered the first of his lectures on February 3 at the New York Society Library (720). Subsequent reviews were carried virtually every day in the month of February but virtually disappeared until about July 11—after the publication of *Eureka*.

The first group of criticisms focused on the contents of the lectures and on Poe's credentials. Several of the critics keenly noted that the author's ideas were continuations

of themes he started in his earlier fictional works. On February 4, the *Daily Tribune* wrote that Poe's talk "was characterized by strong analytical powers and intense capacity of imagination...which might assist the soul in its graspings after the unattainable." Also, on February 4, the *Morning Express* offered a review of the lecture, calling it "Unquestionably, the most elaborate and profound" they "ever heard." A second report in the same newspaper called Poe's lecture "Hyperbolic nonsense." The critics stated that Poe's "Deity and the ultimate blaze of glory—it is beyond our comprehension, but being editorial it is doubtless all right" (721). On February 9, the *Morning Express* wrote that Poe's "great staple of all these strange speculations may be found in those old systems of philosophy which taught the eternity of matter." His ideas were first expressed in "the systems of Pythagoras, Plato, Xenophanes, Epicurus [and] Aristotle" (723). On February 29, George Isbell commented on the *New World's* February 10 review, countering that Poe likely "never saw Chambers' *Vestiges of Creation*." He concluded that Poe's book was written by "someone grossly incompetent to the task" (726).

On February 11, the *Morning Courier* praised Poe for "developing La Place's nebular hypothesis far beyond what this French astronomer envisioned, and for relating both the formation and the eventual destruction of the universe to the law of gravitation" (724). On February 12, the *Boston Journal* speculated that if Poe "establishes his theory to the satisfaction of learned and philosophic astronomers, his greatness will be greater than ever" (724). On February 10, the *Saturday Courier* compared Poe's central idea to one "advanced a century or two ago by Spinoza, that man is a mere extension of the Deity" (725). Some of these reviews compared Poe's thinking to some of the great philosophers and scientists while others discounted the legitimacy of his conclusions.

Overall, Poe must have been pleased with the initial critical responses that his “Universe” lectures received—since the dialogue resembled the debates seen in nineteenth-century professional science journals.

### Publication of *Eureka*

On July 11, 1848, George Putnam published Poe’s long anticipated, *Eureka: A Prose Poem* in New York. Louis Brossard notes that Putnam documented conversations between the publisher and the author, where Poe suggested:

To satisfy the universal and intense attention which the book would certainly create, the publisher should set aside all other enterprises and make this one book the business of his lifetime, beginning with an edition of fifty-thousand. No other scientific event in world history, he insisted, would approach the importance of the developments of this book. Poe agreed to an edition of five hundred. (51-52)

Unfortunately for Poe and his plans to achieve acclaim with *Eureka*, very few copies of his first editions were sold or read—except for those that he might have distributed to critics or Poe’s friends. Thus, Poe’s work that sold the least (*Eureka*) and the one that sold the most (*The Conchologist's First Book*) are among the least recognized of his major publications.

The following section will consider Poe’s arguments and theories in *Eureka: A Prose Poem*. Poe opens his book, “WITH VERY PROFOUND RESPECT, **This Work is Dedicated** TO ALEXANDER VON HUMBOLDT.” Although no documentation exists that Humboldt ever read Poe’s previous works, Poe writes that the “nearest approach” to *Eureka* is made in *Cosmos* of Alexander Von Humboldt. “His theme, in its last result, is the law of *each* portion of the merely physical Universe” (186-87). After offering his deepest respects to

Humboldt, Poe quickly raises objections to the author's conciseness, clarity, and conclusions. He accuses Humboldt of using overly erudite and complicated language to create the effect of *Cosmos*. However, he is guilty of employing the same tactics in *Eureka*. Barbara Cantalupo contends that Poe uses "involved" writing styles that envelope his arguments on all sides. He creates endless word spirals and obscurities "in a way that entirely confounds linear progress." Poe "uses the facts of astronomy and the method of mesmerism to fascinate his audience with the power of words, thereby creating a world rather than describing one" (2-3). Poe illustrates Cantalupo's argument, without his knowledge, in his Preface:

To those few who love me and whom I love—to those who feel rather than those who think—to the dreamers and those who put faith in dreams as the only realities—I offer this Book of Truths, not in the character of Truth-Teller, but for the Beauty that abounds in Truth; constituting it true. To those I present the composition as an Art-Product alone:--let us say as a Romance; or, if I be not urging too lofty a claim, as a Poem. (183)

Poe narrates the opening section of his book as a poet and a dreamer. He makes an appeal to "Romantic" thinkers when he proclaims, "I offer this Book of Truths, not in the character of the Truth-Teller, but for the beauty that abounds in Truth; constituting it true." The source of this statement, according to Broussard, is John Keats, who wrote, "Beauty is Truth." Keats believed that art gives beauty permanence and *truth* (63). Poe's statement about "those who feel rather than those who think" places these two types of people at opposite poles. The reader must decide, at the onset, to which category he or she belongs. If the reader "feels," then Poe suggests that he will appreciate the book. When he writes, "Dreamers who...put their faith in dreams as the only realities," the statement sounds like it could have



also represented the central “romantic” plot of Miguel Cervantes’s seventeenth-century classic story, *Don Quixote*. It is hard to determine whether Poe, like Quixote, will be chasing an unobtainable dream. Is Poe implying that *Eureka* is a “Book of Truths” or a book of ideas based on truth? Can the character of a “Truth-Teller” actually be determined? These questions illustrate that Poe was still wrestling with his opinions about the relative value of the “Romantic” and the “Mechanical” approaches near the end of his writing career.

Poe regards professional scientists as “Mechanical,” and, thus limited to describing what they can observe and classify. His assumption implies that “Mechanical” thinkers are not qualified to report on the subject of *truth*. He purports that his essay is going to narrate about science by bringing together the essence of beauty and *truth*, thereby giving the reader a clearer view of the Universe. One of his goals in *Eureka* is to attempt to mediate between the disparate discourses of science, literature, religion, and philosophy to offer a unified vision of *truth* about the Universe. He does not choose to provide conventional explanations expected by scientists. By defining his work as an “Art-Product,” a “Romance,” Poe makes a disclaimer. He cautions that critics should not expect to read *Eureka* in the same way that they have read other scientific treatises. Then how should they read it? That has been the most challenging question for critics and readers since Poe published *Eureka*.

Poe writes “AN ESSAY ON THE MATERIAL AND SPIRITUAL UNIVERSE.” He claims, “I shall be so rash...as to challenge the conclusions, and thus, in effect, to question the sagacity of the greatest and most justly revered of men.” He will “speak of the *Physical, Metaphysical, and Mathematical—of the Material and Spiritual Universe: of its Essence, its Origin, its Creation, its Present Condition and its Destiny*” (185). These claims, however, contradict those that state that the book is an “Art-Product alone.” Throughout this volume,

Poe advises readers that he “will be continually endeavoring to suggest rather than demonstrate ideas” (187). Those who have been paying attention to his language, may be wondering if Poe will be suggesting new ideas in *Eureka* or trying to perplex them with one unsolvable puzzle after another. The staggering breadth of topics that Poe says he will “suggest” include almost everything that people do not know about the Universe.

The criticisms that followed *Eureka*'s publication demonstrated the controversies concerning who had the right to speak on the subjects of science and *truth*. Poe's journalistic and fictional writing demonstrated that he was seeking to use the methods of science and intuition to untangle mysterious conundrums. In “Mesmeric Revelation” he wrote about how a man in a hypnotic trance was able to ratiocinate on the ultimate *truth* about the universe. By the authoritative tone he uses in *Eureka*, readers might understand Poe's implied suggestion that he had somehow linked up with the supreme knower of the Universe to provide these most profound secrets. Perhaps he was planning to “sleep-wake” ultimate truths about the Universe. In “Maelzel's Automaton Chess Player,” Poe first demonstrated that he could unravel and expose difficult enigmas. In “Secret Writing,” Poe declared: “It will be found that, while one cannot unriddle the commonest cipher, the other will scarcely be puzzled by the most abstruse” (*Tales and Sketches* 116). Perhaps Poe also wanted to demonstrate that he understood how its creator controlled the movements of the Universe. In the “Chess Player,” he commented that the movements of the pieces “are regulated...by some person who sees the board” (*Collected Works* 322). In “The Murders in the Rue Morgue,” Detective Dupin proclaimed that unraveling of mysteries was one of the most rewarding challenges in life. Considering Poe's interest in untangling enigmas, it is not difficult to understand why he wanted to unravel some of the deepest mysteries of the Universe and explain them in *Eureka*.

This study divides *Eureka* is divided into three major sections, each of which Poe writes in a different genre. Each section requires a different approach of untangling before the reader can even attempt to grasp its message. Poe's treatise also becomes increasingly difficult to unravel as the book advances. The Introduction, Part I, establishes the logic behind the book and provides Poe's satirical sketch of the history of science. The science section (Part II) presents, illustrates, and defends his theories about the Universe. The concluding section establishes his poetic view of science and the future of man and the Universe.

#### Part I of *Eureka* - Another Message in a Bottle

Poe begins his satiric reconstruction of the history of science with the retrieval of a lost bottle of wisdom that his evanescent narrator, Pundit, has found floating in the ocean. Poe used the "message in a bottle" in two other fictional tales. Broussard asserts that Poe grounded his research on the men who established the foundational theories of nineteenth-century philosophy and science, such as Plato, Aristotle, Kepler, Newton, and Laplace (71). Poe creates a fictional character, Ptolemy Hephestion, who is described by the narrator, Pundit, as a geographer who first charted the non-existent ocean, the "Mere Tenebrarum." In this instance, Poe uses the name of a scientist who did exist, Ptolemy, in connection with the fictional name "Hephestion," to give the character a false sense of verisimilitude. According to Harriet Hollman, Poe maps a mythical ocean that Greek mythology believed "swept men into darkness." She suggests that Poe's selection of a fictional geographical location indicates that "at least the introductory portion of *Eureka* is a satire of works claiming to provide an illumination of man's understanding of the order of the universe." She contends that for Poe

to make this statement indicates either that he was “incompetent” or that he was writing “as a satirist” (4); her article leans toward the latter conclusion.

Poe’s use of satire is seen again when he writes that “Tenebrarum is little frequented in the modern days unless by Transcendentalists” (188). Though he often equated overly ornate writing with the Transcendentalists, his theory of the Unity of the Universe also has a transcendental flavor. The only other known references to Tenebrarum are found in Poe’s fictional work “MS. Found in a Bottle.” Poe’s unnamed narrator, in that story, tosses his journal into the Sea of Tenebrarum. In “Mellonta Tauta,” Pundit, before facing the destruction of his balloon, also throws his manuscript of ultimate *truth* into the sea of outer space. Poe’s re-use of the same character in two different types of science narratives illustrates his lack of concern for establishing clear boundaries between his works of fiction and non-fiction. As seen in “Melonta Tauta,” Pundit is an allegorical figure, representing both a sage and a satirist. Pundit provides a journal entry in “Mellonta Tauta” before sending his letter into space: “Whether you ever get this letter or not is of little importance, as I write altogether for my own amusement. I shall cork up the MS up in a bottle, however, and throw it in the sea” (*Tales and Sketches* 1305). He hopes that readers of the future will appreciate his ideas.

Pundit, likely echoing the thoughts of Poe, commences with a satire of the faulty scientific thought processes of Aristotle. He states, “The fame of this great man depended mainly upon his demonstration that sneezing is a natural provision, by means of which over-profound thinkers are able to expel superfluous ideas through the nose.” He continues, “Despite this proclivity, he was the “principal propagator, of what was termed the deductive or *a priori* philosophy.” Aristotle started with what he called “self-evident truths.” Deductive reasoning observes something in general and then, based on the observations or evidence

present, forms conclusions. Based on its premises, assuming that premises are true, and the conclusions are accepted as valid. Pundit comments that it is “now well understood that *no* truths are self-evident.” Aristotle produced erroneous “axioms” but “proceeded logically, to results, which were virtually unquestioned by scientists for hundreds of years.” His “most illustrious disciples” were “Tuclid” [Euclid] and Kant (188). Aristotle’s ideas “flourished supreme, until the event of the Hog [Bacon]...who preached an entirely different system, which he called the *a posteriori* or inductive.” He “proceeded by observing, analyzing, and classifying facts and arranging them into general laws” (189). Poe criticized inductive inquiry because it forms broad generalizations from specific observations. Illustrating the problems associated with inductive reasoning, Vickers writes, “Even if the premises are true in a statement, inductive reasoning allows it to be false.” For example, the statement, I have observed a smart man who is an astronomer, may be true. However, to conclude from that observation that all astronomers are either smart, or are men, is faulty logic.

Although Poe does not oppose discovery methods, he takes issue with the idea that Bacon and his followers considered creativity to be unimportant tools of the scientific method. Instead, Poe proposes, in *Eureka*, the use of ratiocination. His technique employs deductive and inductive reasoning combined with a lesser known approach called abductive reasoning. Abductive reasoning makes and tests hypotheses by using the best information available. It makes the best guess possible after observing events that haven’t been previously investigated or explained to the satisfaction of scientists. The *Oxford English Dictionary* Online provides the 1696 definition found in E. Phillips, *New World of Words*. It states: “Abduction is an Argument that leads from the conclusion to the demonstrations of the hidden

and not signified Proposition.” In *Eureka*, Poe employs a combination of logical, empirical, intuitive, and abductive thought processes to solve the deepest mysteries of the Universe.

Pundit takes aim next at John Stuart Mill, a famous English philosopher, who was a contemporary of Poe. He argues that Mill’s writing “is decidedly the cleverest work” on the subject of “Logic” (193). Mill argued that the “ability to conceive [should] be taken as a criterion of Truth.” He proposed that because we cannot conceive of a concept makes it a contradiction to the first statement, and thus untrue. Mill regarded it as “undeniable,” that “Contradictions cannot *both* be true.” That is, they both “cannot co-exist in nature.” Mill’s strongest example, according to Poe, is “that a tree must be either a tree or not a tree.” Pundit argues that such logic is faulty. He proposes that even though one cannot easily conceive of a tree as anything other than a tree, it does not mean that it cannot be something else in the future (194). Pundit’s statement about Mill argument resembles Poe’s journalistic responses to the criticisms of “The Facts of M. Valdemar,” where he asks, “Why cannot a man’s death be postponed indefinitely by Mesmerism? Why cannot a man talk after he is dead” (*Tales and Sketches* 340)? Poe suggests that what appears to be impossible may become possible.

Pundit comments on the letter he found from the distant future, by stating, “I do not quarrel with the ancients... so much on account of the transparent frivolity of their logic—which, to be plain, was baseless, worthless and fantastic altogether,” because they only favored “two roads to truth—creeping and crawling.” However, Poe does oppose their attempt to “confine the Soul” from being able “to soar to those regions of illimitable intuition” (195). Poe praises men, after Aristotle, who elevated the scientific method. He notes that “true thinkers” such as Kepler (1571-1630) and Laplace (1749-1827) were the “generally-educated men” who also had an “ardent imagination.” They theorized, and revised until their ideas

acquired “an unencumbered Consistency” that has stood as “absolute” and “unquestionable *Truth*” (196). Poe upholds the theories of those revered scientists until he revises them.

Pundit describes the “most momentous and sublime of all their truths,” as “the fact of gravitation,” which was discovered by Sir Isaac Newton (1642-1726). Most of Poe’s theories about the Universe are based on the attractive and repulsive qualities of Newton’s gravity. Modern astrophysicist, Stephen Hawking, writes that gravity is made up of positive and negative electrical charges. He explains that “The force between two positive charges is repulsive, as is the force of two negative charges, but the force is attractive between a positive and a negative charge.” He illustrates further, “A large body, such as the earth or the sun, contains nearly equal numbers of positive and negative charges. Thus, the attractive and repulsive forces between the individual particles nearly cancel each other out” (120-21). The balance of the forces of gravity hold the objects of the celestial bodies in place even as they are moving across the span of space. Poe regards gravity as the force that created the universe, which sustains stars and planets in predictable rotations and other movements, and which will ultimately restore the universe to its original state of oneness. He maintains that if such a theory can be conceived by going beyond Bacon’s methods of investigation or Mill’s system of Logic, then it must have the potential for even greater discoveries. Poe writes that Newton “deduced” the laws of gravity from the theories first imagined by Kepler. If Kepler had been asked to point out if it was either the deductive or inductive route by which he attained them, his reply might have been, “I know nothing about routes—but I do know the machinery of the Universe.” Poe argues further that Newton also discovered the laws of gravity through “dint of intuition.” He remarks that “any metaphysician [could] have told him that what he called intuition was but the conviction resulting from deductions or inductions of which the

processes were so shadowy as to have escaped his consciousness, eluded his reason, or bidden defiance to his capacity of expression” (197). Poe implies that scientists and artists both use intuition to create new ideas. However, no one truly understands what the source of intuition is or how it is manifested. As Poe introduces his theoretical section of *Eureka*, he states, “I care not whether my work be read now or by posterity. I can afford to wait a century for readers when God himself has waited six thousand years for an observer. I triumph. I have stolen the golden secret of the Egyptians.” Poe is referring here to the wisdom known by the ancient Egyptians that he “revealed” in “Some Words with a Mummy.” Pundit conjectures that the writer of the letter from the future (which is also Pundit—or Poe) offered some “revolutionary ideas” that are “so radically at war with the well-considered and well-settled opinions of this age.” Poe then proceeds “to our legitimate thesis, The Universe” (198).

#### Poe’s “Legitimate Thesis,” The Universe

Despite Poe’s most erudite arguments, most readers and critics could not follow the ideas or arguments of his book. As a response to the misunderstandings of, what he called, “*merely scientific men*” about *Eureka* (Ostram 363), he summarized its most significant findings on February 29, 1848, to his friend and colleague, George Eveleth. Present day Poe readers, who are “merely scientific men,” literary critics, or science historians can refer to Poe’s summary to aid in their understanding of his theories. He introduces his summary by proclaiming, “Because Nothing was, therefore All Things Are.” He then provides seven key points of his scientific theories:



1. An inspection of the universality of gravitation—i.e., the fact that each particle tends, not to any common point, but to every other particle—suggests perfect totality, or absolute unity, as the source of the phenomenon.
2. Gravity is but the mode in which is manifested the tendency of all things to return into their original unity; is but a reaction to the Divine Act.
3. The *law* regulating the return—i.e. the law of Gravitation— is but a necessary result of the necessary and sole possible equable *irradiation* of matter through space:—this *equable* irradiation is necessary as a basis for the Nebular Theory of Laplace.
4. The Universe of Stars (contradistinguished from the Universe of Space) is limited.
5. Mind is cognizant of Matter through its two properties, attraction and repulsion: therefore Matter *is* only attraction and repulsion: a finally consolidated globe of globes, being but one particle, would be without attraction & repulsion... The final globe would be matter without matter... it must disappear. Thus, Unity is Nothingness.
6. Matter, springs from Unity, sprang from Nothingness—i.e. was *created*.
7. All will return to Nothingness, in returning to Unity (Ostram 361-62).

Poe's first four points pertain to the creation and distribution of matter in the Universe. He uses the theories of gravity proposed by Newton and the Nebular Cosmology of Laplace to build his foundational scientific ideas. He speaks in the first person voice of a journalistic narrator as he re-interprets and expands the cosmological theories of these esteemed scientists. He suggests that the physical Universe existed before it was created. His summary resembles the opening words of Genesis I.1. He proclaims, "In the beginning God created the Heaven and the Earth." Poe's words, like those of the narrator of the *Bible*, reflect the voice of an omniscient authority. He writes, "Because nothing was, therefore all things are." He attempts to clear up the ambiguity of this language by relating back to the mystery of creation. According to Poe, "God," "Spirit," and "Infinity" are terms that men have created to express an expansive concept that is inexpressible (200). "It is but *the conviction arising from those inductions or deductions of which the processes are so shadowy as to escape our consciousness, elude our reason, or defy our capacity of expression*" (206). In this explanation, Poe may also have been attempting to obscure his ideas in the shadows of language. His dialogue echoes "The Facts in the Case of M. Valdemar," where "the sleep-

waker may have been speaking from outside of the region of the shadows” (*Tales and Sketches* 1040). Poe writes that “God created Matter by dint of his Volition” (206). This line is also similar to the Biblical verse, where God states that he will “make man in our image” (*Genesis I: 26*). By using familiar Biblical terms, Poe hoped that religious believers would associate with his arguments. However, it is unlikely that many did.

Poe suggests that gravity is present where attraction prevails. Newton’s theory accounts for “some legitimate deductions” about the Universe.” He repeats, “*Every atom, of every body, attracts every other atom, both of its own and of every other body*, with a force which varies inversely as the squares of the distances of the attracting and attracted atom” (216). “On the Earth we *see and feel*, only that gravity impels all bodies towards the *centre* of the Earth. No man could be *made* to see or feel anything else...Anything, anywhere, has a perpetual, gravitating tendency in any *other* direction than to the centre of the Earth” (217). Todd Timmons writes that Newton deduced that “the forces which keep the planets in their orbits must be reciprocally [like] the squares of their distances from the center about which they revolve” (91). He adds that Newton later concluded that “Earth’s gravity extended all the way to the Moon, the stars, and their elliptical orbits” (93).

Poe re-states Newton’s updated understanding of gravity. He explains that every earthly object has a tendency “not *only* towards the Earth’s centre but in every conceivable direction” (217). Poe reflects on this “ineffable” relationship, which is in present throughout the Universe. He asks whether this Unity could “suggest a common paternity as its source?” (219). He seeks to illustrate the relationships of each segment of the Universe, when he states: “There is no mathematical demonstration which *could* bring the least additional *true proof* of the great *Truth* which I have advanced — *the truth of Original Unity as the source — as the*

*principle of the Universal Phænomena*” (221). Broussard suggests that Poe’s insight here is inspired by Romantic symbols, like those found in Ralph Waldo Emerson’s poem, “Each and All.” Emerson writes, “If I propose to ascertain the influence of one mote in a sunbeam of its neighboring mote, I cannot accomplish my purpose without first accounting and weighing all the atoms of the Universe, and defining the precise positions of all at one particular moment” (53). Emerson’s poem also connects Poe’s science with the unifying vision of the Universe advanced by the Romantics, the Pantheists, and the Transcendentalists.

Poe explains his proposition in both scientific and metaphysical terms. He states, “*In the Original Unity of the First Thing lies the Secondary Cause of All Things, with the Germ of their Inevitable Annihilation.*” The Universe, in the beginning, was a unique particle “without form or end” (186). “He who *created* it can... divide it” (207). “Gravity is but the mode in which is manifested the tendency of all things to return to their original unity; is but the reaction of the first Divine Act” (264). Poe provides a literary and religious image of God struggling, that humans can understand. Poe first imagines the processes of the Universe as a plot that begins to create and destroy itself at the same instant. His narratives of the Universe are similar to those used by artists when they portray the beauty and tragedies of life. For example, in “Descent into a Maelstrom,” Poe asserts that humans yearn to be reunited with the divine soul. In *Eureka*, he suggests that humans follow the same life patterns as galaxies. His interpretation also helps bring Pundit’s observation in “Mellonta Tauta,” into greater clarity, where he observed that humans in the future had lost their sense of individuality.

Timmons writes that Newton resolved Laplace’s inability to account for the motions of the planets when he proposed that our “solar system evolved from a massive ring of rotating gasses which cooled after various rings broke away, condensed and formed planets.”

Laplace “postulated that the sun was the core of the remaining gasses” (156). Poe adds, “The original Particle after creation irradiated spherically in all directions — to immeasurable... distances in the previously vacant space” (208). Poe explains that the “Unity of All Things” is demonstrated to human eyes by the “immeasurable diffusion through space” (225). He notes that “The tendency of diffused atoms to return to Unity will be recognized ...as Newtonian Gravity. He compares the attractive and repulsive tendencies of gravity to irradiation. He explains, “The amount of electricity developed on the approximation of two bodies is proportional to the difference between the respective sums of two atoms of which the bodies are composed” (215). He notes, “No two atoms after their dispersion are in the same form, or of the same size, or equally or predictably distant from each other. The creator designed “variety out of unity...and complexity out of simplicity.” He explains, “The scattering — the irradiation... is *directly* proportional with the squares of the distances (See Figure 4 below):

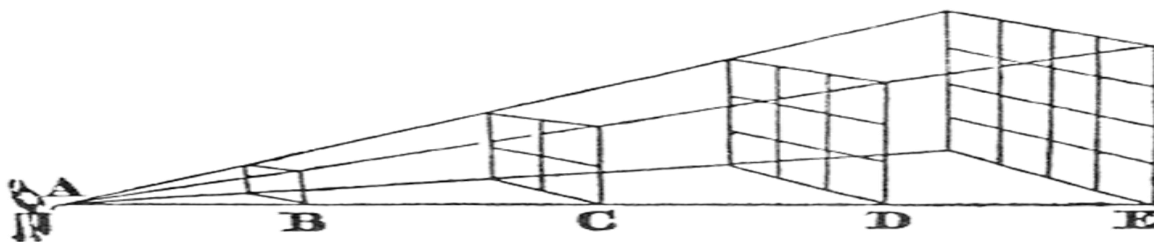


Figure 4. Poe's Concept of Irradiation from the Centre

At the distance B, from the luminous centre A... particles are so diffused as to occupy the surface B. Then at double the distance... at C — they will be so much further diffused as to occupy four such surfaces: at treble the distance, or at D, they will be so much farther separated as to occupy nine such surfaces: — while, at quadruple the distance, or at E, they will have become so scattered... over sixteen such surfaces. (226)

According to Poe, “We have reached the conclusion that matter was originally irradiated from a centre and is now returning to it. The centralization, in the return, proceeds *exactly as we know the force of gravitation to proceed*”(227). Poe further states that “Laplace has shown, dynamically and mathematically, that the results in such cases, necessarily ensuing, are those...we find manifested in the actually existing condition of the system itself” (245). Laplace’s “most unwarranted assumption was that of giving the atoms a movement towards a centre.” Poe did not believe that any scientist’s theory was too revered to hold up to his critical eyes. He writes that Laplace’s “theory presents us with the singular anomaly of absolute truth deduced, as a mathematical result, from a hybrid datum of ancient imagination intertwined with modern inaccuracies.” Poe concedes that Laplace’s real strength lay in his “almost miraculous mathematical instinct.” Regarding his Nebular Cosmogony, “It led him, blindfolded, through a labyrinth of Error, into one of the most luminous and stupendous temples of Truth” (267).

Poe, in a rare moment, brings a level of uncertainty to his claim of privileged knowledge, when he remarks, “I have stated a mathematical fact; and, without comprehending it in the least.” Nevertheless, he explains, “the Moon revolves about the Earth at the comparatively trifling distance of 237,000 miles.” He considers this an immense distance in comparison to the time it takes humans to cross 3,000 miles of the Atlantic Ocean in, perhaps, an ocean liner, or a hot-air balloon. By combining the factors of sound with velocity, he writes that “Sound passes through 1100 feet of space in a second... Now were it possible for an inhabitant of the Earth to see the flash of a cannon discharged in the Moon, and to hear the report, he would have to wait 13 entire days and nights before getting any intimation of the latter”(281). Despite feigning not to understand mathematics, he explains this phenomenon

clearly; as he was very familiar with cannon balls as an artillery specialist in the Army. Poe then further expounds upon the vastness of our solar system:

Consider the futility of attempting to grasp such intervals as that of the 28 hundred millions of miles between the Sun and Neptune; or even that of the 95 million between the Sun and the Earth we inhabit. A cannon-ball, flying at the greatest velocity with which a ball has ever been known to fly, could not traverse the latter interval in less than 20 years; while for the former it would require 590. (280-81)

As Poe continues to survey the Universe, he suggests “exceptions to gravity.” These are the “frequent gaps in the Heavens, where our utmost scrutiny can detect, not only no stellar bodies but no indications of their existence: — where yawning chasms, blacker than Erebus... afford us glimpses, through the boundary walls of the Universe of Stars, into the illimitable Universe of Vacancy.” He lectures, “Now as any body, existing on the Earth, chances to pass, either through its own movement or the Earth’s, into a line with any one of these voids, or cosmical abysses, it clearly is no longer attracted *in the direction of that void*” (274). In the above conclusion, Poe either ratiocinated a theory very similar to Black Holes or did a thorough job of surveying and unraveling the latest nineteenth-century theories that he had found about the Universe. However, modern literary readers, who are not scientists, most likely will need to turn to astrophysics expert, Dr. Stephen Hawking, to understand the black voids in space that Poe described. Hawking writes that, in 1783, John Mitchel proposed:

A star that was sufficiently massive and compact would have such a strong gravitational field that light could not escape: any light emitted from the surface of the star would be dragged back by a star’s gravitational attraction before it could get very far. Such objects are what we now call black holes or... black voids in space. (76-77)

Hawking writes that a similar proposal was made “ a few years later by French scientist, Marquis de Laplace, in the first and second editions of his book, *The System of the World*, but left out of later editions” (77). Hawking adds that the “black hole” theory was updated in 1939 by Robert Oppenheimer, when he wrote:

As a star contracts, it becomes denser, so the gravitational field at its surface gets stronger...The stronger field makes light paths near the surface bend inward more. Eventually, when the star has shrunk to a certain critical radius, the gravitational field at the surface becomes so strong that the light paths are bent inward to the point that light can no longer escape... This region is the black hole. (78)

Poe looks at the unequal distribution of the stars, and sees “an interminable succession of clusters of clusters, or Universes.” He remarks, “There *does* exist a *limitless* succession of Universes, more or less similar to that of which we have cognizance.” We cannot know about these “until the return of our own particular Universe into Unity.” He further insists that “If such clusters of clusters exist, however — *and they do* — it is abundantly clear that, having had no part in our origin, they have no portion in our laws (276). Unless Poe tapped into this information under a spell of mesmerism, it is hard to determine how he derived the concept of the separate Universes. Poe’s observations move back and forth between legitimate scientific explorations and imaginative scientific speculation. As his treatise advances, it becomes increasingly difficult to determine when he is demonstrating technical positions and when he is speculating about metaphysical concepts.

Poe intuits that “The Universe of Stars” is “limited” (186). “The mind admits the idea of limitless, through the greater *impossibility* of entertaining that of limited space” (200-01). Poe writes that he will take a “survey of the Universe so that the mind may...perceive an

individual impression” (186). He wants “the mind to take in...a distant conception of the *individual* Universe” (200). He continues, “Infinity is merely one of those *phrases* by which even profound thinkers have occasionally taken pleasure in deceiving *themselves*.” The mind “entertains the idea of *limitless*, through the greater difficulty which it finds in entertaining that of *limited*, space” (201-202). Poe rejects the concept that the Universe is made up of infinite matter; he suggests, instead, that it may be spatially boundless.

As Poe argues, “*Hitherto*, the Universe of stars has always been considered as coincident with the Universe proper.” He continues, “It has been always either directly or indirectly assumed... that were it possible for us to attain any given point in space, we should still find, on all sides of us, an interminable succession of stars” (205). He notes that the astronomer Pascal “made the most successful attempt to explain this apparent paradox when he stated that “the Universe is a sphere...of which the centre is everywhere, the circumference, nowhere.” Pascal’s definition, however, does not appear to support or refute Poe’s “finite Universe of Stars.” Poe explains that the space of the Universe cannot be constrained. However, matter may not be infinite. He admits his idea remains an unsolvable puzzle. “The Deity has not designed the Universe with the intention of man solving its deepest mysteries.” Poe also raised the same issue in “The Mesmeric Revelation,” when he proposed: “All created things are, but the thoughts of God...Man thus divested would be God” (*Tales and Sketches* 1036). In *Eureka*, he expands on these ideas when he states, “In order to know what he is, we should have to be God ourselves” (205). However, not knowing the mind of God does not stop Poe from trying to unravel the plot of the Universe.

A summary of Poe’s “legitimate thesis” suggests that God created the Universe with an initial burst of energy that irradiated matter through space. The Universe is maintained by



the forces of attraction and repulsion or gravity. Each particle and field of energy suggests an “absolute unity as the source of the phenomenon.” Although space is unlimited, the Universe of Stars is likely limited. There may be different Universes than our own, though the rules that govern them may or may not pertain to our own. Ultimately, he argues, the same force that created our Universe, will eventually assimilate all created matter and return it to a state of Nothingness. Once this been completed, this process may begin over and over again.

### Part III - A Unity of Nothingness

Poe explains that the Universe is constructed on a “Titanic scale” with vast unaccounted portions of space that humans will likely never observe. He concludes that: “Space and Duration are one” and that, space is so vast as to appear infinite. Stars are required to go through a process from “nebulousity to consolidation” before returning to the “Divine purpose;” that is, “Their return to Unity.” He compares the entire creation and unification of the Universe to a “Plot of God.” A Human author, he argues, must construct a romantic plot with a “finite intelligence.” However, Poe contends that “The plots of God are perfect” (291). Through this comparison, he builds up his scientific treatise at the same time that he leads up to his ultimate poetic conclusions about the Universe. Poe notes that the possibility of the collapse of the Universe was also described by the noted astronomer John Herschel, after he used a high-powered telescope. Herschel wrote, “On one hand, without a rotary motion and a centrifugal force, it is hardly possible not to regard [the Universe] as in a state of *progressive collapse*.” Poe regards those who argue against this idea as promoting an “utterly baseless notion” of the “eternal stability of Universe” (300). He proposes that the laws of gravity only pertain to the Universe while it is forming. “That the stellar bodies would finally be merged”

in an “ingathering of all the orbs,” is “a mystery which I find it difficult to fathom.” He argues that the ingathering hypothesis is also in “accordance with Kepler’s law,” which demonstrated that “every orbit is in a state of transition from ellipse to circle” (303-05).

Poe relates electricity, heat, and light to thought. He also regards those energies as virtually synonymous with “spirituality,” though distinct from “ether,” which, he writes, is the term of astronomers, but “mine not.” Poe states that scientists have concluded that “the cycles of the Universe are perpetual” and that “the Universe has no conceivable end.” Since no one will ever be in a position to demonstrate these arguments, he resorts to a literary illustration. We feel the same “dissatisfaction when contemplating the ending of an unnecessarily complex work of human art.” However, the Universe is “like a perfect plot of God” (306).

Poe suggests that the final stages of the Universe will manifest “amid unfathomable abysses,” with “glaring unimaginable suns,” representing the “magnificent foreboding” of the “great End.” While undergoing consolidation, the clusters “have been rushing towards their own general centre.” However, in the final moments, “with a thousand-fold electric velocity... with the spiritual passion of their appetite for oneness, the majestic remnants of the tribe of Stars flash at length, into a common embrace.” Poe regards “the inevitable catastrophe at hand” as the ultimate “Divine Art” (308). He sees “Matter as a Means—not as an End.” The final Unity, he argues, will result in the fulfillment of the Universe (309). Matter “will sink at once into Nothingness” (311). The “Heart Divine is not separate from us, but is our own.” Poe warns that these breath-taking ideas force us into acts of “self-inspection.” He asks “us” to question who we are in the ultimate scheme of existence and to strive to discover “the most sublime of truths” within our “merely spiritual shadows” (311-12).

Poe reflects on his life, in which he has experienced an almost imaginable series of emotional and professional setbacks. He laments, “We live out a Youth peculiarly haunted by such dreams; yet never mistaking them for dreams... There was a period at which we did *not* exist — or, that it might so have happened that we never had existed at all.” His question about reality relates back to his theory that matter and energy are one. He expressed the same idea in his poem, “A Dream within a Dream,” a year after the publication of *Eureka*. Poe asks, “if all that we see or seem” may be...but a dream within a dream?” He regrets that his remaining days are slipping away “like grains of golden sand” (*Complete Works VII 16*).

Poe warns that “We live in a period in which conventional wisdom awakens us from the truth of our dream. By using the pronoun “us” in the line, he is aware that he is part of the dream, but so is the reader. He continues, “Doubt, Surprise, and Incomprehensibility arrive at the same moment.” He advises readers, “You live and the time was when you lived not... Intelligence exists greater than your own; and it is only through this Intelligence you live at all.” He reflects, “These things we struggle to comprehend and cannot” because they are “incomprehensible” (312). He continues, “No thinking being lives who... has not felt himself lost amid the surges of futile efforts at understanding or believing that anything exists *greater than his own soul*.” He has come to the profound realization that the “material *and* the spiritual God — *now* exists solely in the diffused Matter and Spirit of the Universe.” Poe concludes that “We comprehend the riddles of Divine Injustice — of Inexorable Fate. Our souls no longer rebel at a *Sorrow*, which we ourselves have imposed upon ourselves” (313).

Poe understands and writes about the pain and suffering that he has encountered in his life. To his greater satisfaction, he can attribute his suffering to science, metaphysics, and spiritualism. As he reflects, “A long succession of ages... must elapse before these myriads of

individual Intelligence become blended —when the bright stars become blended — into one” (314). He asks his readers to consider that this end time will be a period of the universal enlightenment of humanity, when “We think that... individual identity will be gradually merged in the general consciousness.” In the meantime, we should bear in mind, “the less within the greater, and all within the *Spirit Divine*” (315-316). These lines echo the lack of concern about the loss of man’s individuality that Pundit expressed in “Mellonta Tauta.”

#### Nineteenth-Century Reviews of *Eureka*

There was more commentary about *Eureka* in the month after it was published than there was again until the late twentieth century. These earlier critical responses inform modern researchers about the discussions that were taking place in both science and religion during the nineteenth century. Scientists disputed whether Poe had the credentials to write about their subject and about whether he used the proper research methodologies. Other critics questioned whether *Eureka* was a work of philosophy in the tradition of Aristotle, or a continuation of Poe’s fictional tales. Religious authorities questioned Poe’s authority to write about a Supreme Being. There was also widespread disagreement about the genre of *Eureka*. Poe writes that it is a “*Prose Poem*” or a “Romance.” However, he also claimed that his work emulated the popular science compendiums of Humboldt and Chambers. With these disagreements, it is understandable why Poe cautioned critics not to try to evaluate his work in his lifetime and also why modern scholars still struggle to understand his final book.

The early reviews of *Eureka* were mostly positive, as reviewers did not have sufficient time to consider the work. Many of the reviews that came later were highly critical of the scientific and religious conclusions. On July 12, *The Morning Express* wrote, “We will be

greatly surprised if this work does not create a most profound sensation among the literary and scientific classes all over the Union” (742). This review erroneously assumed that the scientific community would accept *Eureka*. On July 15, *The Albion* questioned the genre of the work and expressed surprise that the only poetry of the book was in the Preface (743).

Poe called *Eureka* a “*Prose Poem*.” The prose poem became an important genre of literature after it was made popular in the nineteenth century by Poe’s admirer and translator (from French), Charles Baudelaire. In *Models of the Universe*, co-editors Friebert and Young write that “The prose poem is a very special invention, like a chair that flies or a small dish that produces food for forty people. In turning to it, the poet seems to put aside the discreet or flamboyant costume of poetic identity” (17). Poe’s “flying chair” turned everything that critics had previously understood about Poe’s literary writing, *inside out*. On July 15, the *Saturday Evening Post* (Philadelphia) wrote that “Readers would be shouting... “Nevermore to Poe.” On July 20, the *Evening Transcript* (Boston) speculated that Humboldt would be “dismayed by the lavish ostentation of scientific lore” in *Eureka*. The reviewer noted that Poe’s work occasionally reminded him of Chambers’s *Vestiges of Creation* but, “the mocking smile of the hoaxer is seen behind his grave mask” (744). By discrediting *Eureka*’s legitimacy and associating it with Poe’s previous hoaxes, these two critics discredited the scientific authority that Poe was hoping to achieve.

On July 29, the *Literary World* attacked *Eureka* on literary, scientific, and religious grounds. A reviewer called *Eureka* “a keen burlesque on the Aristotelian and Baconian methods of ascertaining the truth.” Poe “pours forth his rhapsodical ecstasies in the glorification of the third mode—the noble art of guessing” (745). The review referred to Poe’s attempt to discover *truths* about the universe by using a combination of the scientific, artistic,

and intuitive approaches. The reviewer argued that “While the physical portions of Poe’s work may be true, his theological speculations are intolerable.” The writer, a young religious student, condemned “the system of Pantheism which is more or less woven into the texture of the whole book.” He criticized Poe’s uses of “the Godhead,” as sounding “like a deist might speak.” He also questioned Poe’s assumptions that “there is an infinity of universes” such as ours and each with a “particular god.” This assertion, he argued, “Makes Mr. Poe a polytheist—a believer in an infinite number of proper and particular gods, existing apart, and independently.” He concluded that “Mr. Poe cannot conceive that anything exists greater than his own soul,” and that “this work may be nonsense or blasphemy, or perhaps both” (745-46).

In August, *Merchants Magazine* commented that *Eureka* was under the “provinces of poetry or romance” (747). The *New Church Repository* (Sweden) reviewed the book’s scientific theories: “The poet here enters profound speculations, shooting ahead of Newton, Laplace, Herschel, and Nichols, in the solution of the great problems of the Universe” (747-48). On August 12, the *Home Journal* commented that Poe rejected thinkers who understood the world mainly by induction. Poe “recognizes the intuitive and unconscious process as the source of discovery.” The critics concluded that *Eureka* is more of a “demonstrative” than “suggestive work,” and that it contained “as much fantasy as fact” (751-52).

Poe could not have been pleased with the overall critical reception of his book. On September 20, he wrote to Charles Fenno Hoffman, editor of the *Literary Review*, protesting criticisms that “distorted” his “beliefs about science.” He argued that “there is no absolute *certainty* in the Aristotelian or Baconian processes.” Followers of these men “do not have the right to sneer at that seemingly imaginative process called Intuition” (755). After reviewing

most American critiques, Poe “was miffed...All praised it,” he said, “and all absurdly misrepresented it” (qtd. in Silverman 338).

Despite the mostly stinging criticisms of American reviewers, several Europeans, such as nineteenth-century French poet Charles Baudelaire, late nineteenth-century artist, Victor Valéry, and Russian author Fyodor Dostoevsky had favorable reactions to Poe’s book. Carlson writes that Baudelaire translated *Eureka* into French and published it in five volumes between the years of 1856-65. Baudelaire praised its insight and Poe’s poetic imagination. Carlson argues that Baudelaire understood the book “in a way that no American ever did,” and that Valéry declared that *Eureka* was “unparalleled to anything he ever read.” He was fascinated that “a certain truth of coherence would be discovered through poetic imagination coupled with scientific reasoning.” Carlson also notes that Dostoevsky translated *Eureka* into Russian and further asserted that, in *Eureka*, “Poe established a blend of fantasy with reality” (328). These notable European critics praised *Eureka* because it resembled the symbolic works that several of their innovative writers were producing.

#### Modern Commentary on *Eureka*

The majority of modern criticism of *Eureka* has been written by scholars in the fields of literature, science, and metaphysics. Those scholars have given the work more in-depth consideration and have exhibited a greater understanding of the inherent value of Poe’s final book than did the nineteenth-century critics. There has also been more research about *Eureka* in the last several decades, than at any other time, except during the period right after the book was published. Some scholars of science history have taken a renewed interest in the work

because it has given them a valuable window into nineteenth-century science and culture. However others continue to offer negative or ambiguous reflections on Poe's final work.

Silverman and Cantalupo argue that *Eureka* abounds in digressions, obscurities, and involuted language. Carlson, however, suggests that the "inaccessibility of *Eureka* is purposeful." Poe, he argues, "repeatedly points to the tendency of language to distort and to mystify points to the ultimate impotence of its significance." Poe openly admits in *Eureka*, "I prove nothing. So be it." Carlson suggests that "Poe may have been trying to mesmerize his audience with an avalanche of scientific information spun circuitously through principles that overwhelm the reader into acceptance and belief" (332). However, *Eureka* cannot be evaluated by its scientific conclusions alone. Limon asserts that "*Eureka* challenges the presumed grandeur of nineteenth-century scientists, and of their pretension of intellectual command" (qtd.in Carlson 337). Hollman also suggests that, at least, the first section of *Eureka* is a satire that mocked the nineteenth century's encyclopedic approach to science (1).

Perhaps, Poe may have intended to create, at the same time, both a symbolic work and an authoritative scientific treatise. Based on what he demonstrated in his journalistic career, it is clear that he had very high editorial standards. His 1846 essay, "The Philosophy of Composition," has become a style manual that is still used by modern writers (Daly). Poe argues in "Philosophy" that truth and beauty are difficult to achieve, but still attainable in a poem or work of prose. To balance these two ideas in the same work, an author must design and create a clearly comprehensible pre-planned plot and conclusion. The work must be based on a universal topic of popular interest, and the writer must plan and create a sustained mood of effect aiming at a "unity of impression." He comments on the importance of what he calls the "intention" of the writing piece. According to Poe, "If any literary work is too long to be read at one sitting, we



must be content to dispense with the immensely important effect derivative from unity of impression—for if two sittings be required, the affairs of the world interfere, and everything like totality is destroyed” (*Complete Works* XIV 194-95). It has fairly obvious to most, before they read too far into *Eureka*, that either Poe failed to achieve his own standards of brevity and clarity in presenting his ideas, or that he did not attempt to try to reach his own standards.

Broussard speculates that Poe intended to create a largely symbolic work rather than one that could be clearly comprehended by most readers. For that reason, he argues, the symbolists value *Eureka* “because of its emphasis on intuition in scientific discovery, and its affinity between consciousness and the cosmos.” *Eureka*, Broussard contends, offers “allegorical illustrations of his truths, often projected through symbols.” Poe “has built these theories on the foundation of an abstract poem.” Broussard adds that T.S Elliot also rejected *Eureka* as a valid science work but accepted “Poe as the forerunner of the symbolists” (47). As either a scientific or a symbolic work, *Eureka* is full of contradictions. Perhaps this effect was intentional by Poe. *Eureka* may be important, among other reasons, for the issues and questions it raises about science that were not being discussed by nineteenth-century science. However, the scientific merits of Poe’s thinking and *Eureka* should not be discounted.

Beaver asserts “that there were some clear-headed hits in *Eureka*,” ranging from Poe’s questioning the uniqueness of Euclidian geometry to his explanations that the light we perceive constitutes distant images from the past. “He correctly rejected the hypothesis of Madler—that there exists in the centre of the Galaxy, a stupendous globe about which all systems of the cluster revolve.” Beaver argues that “Even more remarkable are his adaptations and revisions of the Newtonian system.” Poe rejects some of Newton’s arguments, describing

new relationships between thought and consciousness. “Long before Einstein,” Beaver concludes, Poe correctly “insisted in a finite Universe of Stars” (400-01).

Astronomer, Albert Cappi, contends that Poe’s “cosmology is based on the foundational ideas of nineteenth-century science.” However, Poe’s theories are “original and assume new meanings” (315). For example, Poe writes that an “Inspection of heavens informs us that there is order in the universe: Equidistance, and distribution in space.” He concludes that “All other galaxies are proceeding from us in a way that is proportional to their separation.” Cappi comments that, in 1929, Hubble arrived at the same conclusion as Poe (316). Poe’s explanation of the Universe, like Hubble’s, began in an “an instantaneous flash.” Although Poe’s theory lacks several of the specific details of the original first cause, Cappi argues, it “corresponds to the Big Bang Theory” (317). He writes that Poe correctly “supposes that there are other nebulae and systems than the Milky Way...and that the distances between the clusters “are millions of light years.” Poe also insists that “the clusters of stars must be finite.” Cappi contends that Poe may have proposed “the first known correct solution to Olber’s Paradox for an infinite universe,” when he suggested that “Light has a finite speed.” Subsequently, “We cannot see some stars because the light cannot reach us” (318).

Hollman asserts that Poe sought a simplicity and unity of the universe as the only valid path to *truth*. She writes that “In their endless categorizations and divisions, most [nineteenth-century] scientists and religious scholars moved up and down different tangential paths to truth rather than trying to grasp the unity of all branches of knowledge.” Poe saw the Unity of the Universe, and thus did not believe that it was necessary to divide its study into many unrelated disciplines. Hollman also compares Poe’s concept of *Creation* to the “Big Bang Theory.” She notes that “The theory of the Big Bang was conceived by George Lemaitre in

the 1920's." As in Poe's theory, "Lemaitre presupposed that the universe expanded from a single homogenous particle into successive stages of differentiation" (11-13).

Richard Wilbur concludes that *Eureka* and all works of Poe's fiction are "in some measure based on [the] myth of the soul." Literary critic Joan Dayan suggests that Poe is having us enter "chaos," based "on the limitations of our mind." He "uses fiction to question and allegorize epistemology to present a new vision of science and metaphysics." She concludes that Poe "searches for a new kind of language in the guise of a quest for cosmic truth" (qtd. in Carlson 338). Perhaps Poe understood that previously utilized language could not describe the Universe being discovered in the nineteenth century. Consequently, he needed to invent new ways to discuss his view of *truth*.

Poe's works of fiction like "M.S. Found in a Bottle" and "Descent in a Maelstrom" first expressed his belief in the consistencies of the laws of nature throughout the Universe. He proposed, in those stories, that every particle and being longs for an undifferentiated reunion and a loss of individualism. Hollman suggests that Poe's fictional stories depict *psychic dissolution*. The swirling waters in the above stories, and in *Eureka*, represent the maelstroms of the swirling galaxies that Poe imagines will exist at the end of the Universe. Hollman points out that some critics might see inconsistencies in Poe's view of the Universe as being engaged, "at the same time, in tendencies to create and dissolve matter." To Poe, "it was as natural for a flower to come to bloom, as it was for it to return to the earth as dirt" (11). He resorted to literary symbols at the end of *Eureka* to provide a clearer understanding of how the Universe was created and operates. He conceived of the metaphors, "the plots of God are perfect" and "The Universe is a plot of God" (292), to convey his symbolic thinking. It is likely that he intended to express a view of the Universe that showed beauty and harmony

in all elements. Poe ratiocinates that after the Universe annihilates, God will create another one, with another cycle of diffusion and collapse.

Carlson writes that many critics (including himself, Richard Wilbur, and Allan Tate) emphasize that Poe was “obsessed with thoughts of death, nothingness, and annihilation.” He conjectures that Poe, like the “British Romantic poets,” sought to use his writing “to discover the truth about the undiscovered country from whose bourne no traveler returns” (420). Poe deconstructs the idea of death, suggesting that it also offers new life. Broussard suggests that near the end of his life, and *Eureka*, Poe proposed solutions for the problems he struggled to understand. He accepted that death is a necessary condition for the relief of suffering and his unity with God. *Eureka* expands his understanding of despair that he characterized in his earlier work. In Poe’s new interpretation, death is offered as the solution to suffering rather than as a menace to life. In Poe’s personal copy of *Eureka*, he added a new ending in pen:

The pain of the consideration that we shall lose our individual identity, ceases at once when we further reflect that the process, as above described, is, neither more nor less than that of the absorption, by each individual intelligence, of all other intelligences (that is, of the Universe) into its own. That God may be all in all, each must become God. (*Complete Works* XVI 315)

Harry Lee Poe, a distant cousin of Edgar, suggests, in summary, that Poe examines the paradox that the world that gives us so much beauty also gives much suffering. He writes that Poe saw that the universe would eventually collapse, leaving God as the sole remainder. This larger view suggests that human experiences are only right or wrong in comparison with each other. To be happy at one point, we must have suffered at another point. This principle explains Poe’s concepts of Divine Injustice and Inexorable Fate. Evil becomes intelligible,

and souls no longer rebel at or question sorrow. From this understanding, Harry Lee Poe sees *Eureka* as a positive, and even joyful work. The end of the Universe, according to Edgar Allan Poe, is part of the plot that is necessary for God's final blessing.

### Discussion and Conclusions

Poe's "Sonnet to Science" questioned the values of science to the nineteenth-century scientist. Despite his concerns, new developments in science provided an opportunity for him to express his views to an increasingly interested nineteenth-century audience. Poe's journalistic style works demonstrated that he was dedicated to reporting on science. Fiction provided him with the medium to expand his narratives about science by using imaginative characters and settings from unspecified locations, other countries, and from the distant future and the past. This study has shown that Poe's previous science narrative works provide many valuable clues to assist readers to gain an enhanced comprehension of *Eureka*. *Tales of Ratiocination* provide his clearest blueprint on how he proposed to merge scientific and intuitive thinking to conduct scientific investigations in *Eureka*. Poe utilized research about science that he had researched about the foundations of nineteenth-century science and then solved the mysteries of the Universe, like a detective, from his armchair. Poe's *Imaginary Journeys* demonstrated his arguments and criticisms about nineteenth-century science. In *Metaphysical Tales*, Poe explored issues of life and death. For example, the swirling forces of the Universe and mysteries of death are portrayed in "Descent in a Maelstrom." In that story, and in his other mesmeric tales, Poe understands and writes about the unity and power of the forces of the Universe and comes to terms with his own impending dissolution. Poe wrote that he would elaborate more about his scientific and metaphysical theories in his sequel to *Eureka*

(*Complete Works XVI, 186*). Unfortunately, he never published any other work under his own supervision. He died in June, 1849, a little over a year after he published *Eureka*.

Perhaps though, the sense of fulfillment he received after he produced his final work was enough for him. As he revealed in a letter to Maria Clemm, “Since I have done *Eureka*, I could accomplish nothing more” (qtd. Broussard 51). Regardless of his inflated assessment of *Eureka*, it does not compare well in public acceptance or scientific recognition with the works of Newton, Laplace, Chambers, or Humboldt. Furthermore, Poe’s final book is, perhaps even harder to evaluate today than it was in the nineteenth century. The many dissonant voices that have commented on his work, since it was published, makes their criticisms very difficult to assess against each other. Furthermore, most scholars who have attempted to evaluate *Eureka* have done so from the limited perspective of his or her specific discipline. However, Poe’s use of mixed genres and writing styles has also made his final book difficult to evaluate with any specific known critical approach of. However, *Eureka* is a unique and insightful work that should only be considered or evaluated in its own category. Unfortunately, a valid approach for evaluating Poe’s mixed-genre has yet to be developed. Modern astronomer Albert Cappi offers the most comprehensive view of *Eureka*. He concludes that “Poe left us with a unique work in the spirit of Lucretius: a fascinating and inspiring synthesis of art, metaphysics and science midway between ancient ideas and contemporary cosmology” (320). His review *allows* us to look at Poe’s treatise in a new way that frees us from categorizing or critiquing the work by any of the accepted methods from any particular discipline.

In looking at his entire canon of science narratives, it can be observed that, despite Poe’s criticisms of Bacon, he encouraged scientific thinking and experimentation. He valued Newton’s, Kepler’s, and Laplace’s theories and marveled at the discoveries of Herschel’s

powerful telescope. Poe noted that Newton ultimately realized that the intellect would only give him a set of facts, but that intuition would allow him to put these facts together in a new ways. Poe's ultimate thesis is that the instinct of the poet will lead him to an understanding of *ultimate truth* better than can the experimentation of professional scientists. His writing disrupted the accepted conventions of describing the Universe. At the same time, it allowed him to reveal his cosmology through imaginative literary interpretations. Poe unraveled the secrets of the Universe, both mechanically and intuitively, like a cryptographer. He explained the Plot of the Universe in the language of a prose poem. He anticipated a "Romantic" Universe when he stated that matter will be dissolved into "the heart of God."

There were unprecedented advancements, inventions, and emerging new fields of study during the nineteenth century. There was also much disagreement among the various disciplines about which group had the right to speak for science. *Eureka* was important, among other previously stated reasons, because Poe demonstrated that a new symbolic language was needed to express the complex findings and issues that were being revealed about the new discoveries of the Universe in the nineteenth century. He argued from a lay position when he concluded that scientists would not be able to explain fully advanced concepts about the Universe until they balanced scientific experimentation with artistic imagination. He also challenged the accepted belief of his lifetime that only professional scientists could speak for science. By doing so, he also elevated the role of the literary writer who is also well-schooled in technical areas. *Eureka* represents Poe's attempt to connect the gaps between the dominant literary, scientific, and religious cultures of the nineteenth-century. Rather than presenting a view of science that made a break with history, Poe wanted to connect the ancient past of Lucretius and Plato with those of the nineteenth century.

This study does not conclude that Poe's scientific revelations in *Eureka* are its most significant contributions. However, it has clearly demonstrated that Poe was dedicated to writing about the topics, issues and future implications of nineteenth-century science. Though he was not a trained scientist, several of his scientific theories were unique and prophetic, and thus worthy of additional future scrutiny. Moreover, modern scholars can likely learn more about how the nineteenth-century public received and understood science by reading Poe's narratives than by reviewing other available research about this period.

Despite the lack of understanding of *Eureka* by nineteenth-century critics, there has been an increased effort by some modern scholars to re-examine the ideas that Poe provided in *Eureka*. However, it is not surprising that Poe's mesmeric and ratiocinative approach to explaining the Universe has not convinced many scholars, of any century, about the scientific legitimacy of his final work. Poe, after all, received much previous notoriety as a hoaxer. Although *Eureka* should not be considered a hoax, certain parts of it give the appearance of a work of fiction. Poe, in constructing a multi-genre work, makes *Eureka* virtually impossible to evaluate by using the procedures typically employed by any single professional discipline. Then how should scholars be expected to give credibility to *Eureka*, after Poe explained that he gained his *Ultimate* understanding of the Universe from a letter from the far-distant future that his narrator found floating in space?

It is plausible that Poe may have intended to challenge his readers and critics by encrypting at least parts of his "legitimate thesis" in code and symbolic terms. The Universe he understood was far too complex for him to explain in the language that he had been using, or the language that had been predominantly utilized by nineteenth-century scientists. Under this line of thinking, the only way that anyone can even begin to unravel *Eureka* would be to



further scrutinize and decode the many symbolic and enigmatic clues Poe provided in his previous science narratives. Perhaps, no single explanation can be supplied regarding Poe's motivations for writing *Eureka* in such an enigmatic style. However, the present study has revealed that several scholars have offered some interesting new ways of looking at this work.

Modern critics have demonstrated a greater awareness of the scope and importance of Poe's science narratives than did their predecessors in the nineteenth century. However, additional in-depth studies should be conducted on his culminating book before future scholars can gain a fuller understanding of the symbolic and scientific meanings of his writing. Future attempts to untangle the mysteries of *Eureka* would require interdisciplinary teams of poets, literary scholars, cryptologists, scientists, historians, metaphysical, and religious scholars working in conjunction. These teams would need to communicate with each other after each phase of their work is completed. For example, literary critics could be assigned to critique Poe's use of language, and whether there are additional in-depth strands of Poe's scientific theories in *Eureka* found in his other works that were not discussed in this study. Science historians could conduct additional research on how *Eureka* reflected the culture of the nineteenth-century public. Scientists could determine the extent to which Poe's theories hold up to the scrutiny of modern astrophysics. Computer cryptographers could be employed to determine if there are hidden codes that provide additional clues about Poe's secret messages. Lay readers could also serve on these teams to provide input on what ideas that non-professional readers understand and question about *Eureka*. Philosophers and religious scholars could look at the cosmological themes of *Eureka*. However, they would probably argue endlessly about Poe's metaphysical theories and never come to any conclusions. Perhaps, Poe would not be concerned that modern scholars still do not have a

comprehensive understanding of *Eureka*. In “Mellonta Tauta,” he advised us, “I write altogether for my own amusement. Perhaps, he also wrote *Eureka*, in part, for his own amusement. However, several of Poe scientific theories and metaphysical ideas are still beyond the comprehension of most modern literary critics or philosophers. However, we cannot discount the possibility that his culminating book may be more appreciated and understood by readers of the distant future. Poe writes, “I shall cork the MS. up in a bottle, however, and throw it into the sea.” Perhaps, he understood that his greatest and most intriguing puzzle, *Eureka*, would not likely be unraveled, at least, until the year of 2848.

### Epilogue

No story better illustrates both Poe’s understanding of the significant scientific advancements of the nineteenth century than his 1845 fictional narrative, “The Thousand-and-Second Tale of Scheherazade.” Poe’s version satirizes nineteenth-century critics’ lack of understanding of *Eureka*. Poe reimagines the classic tales of the *One Thousand and One Arabian Nights*, first written in Arabic in 1706. The original *Arabian Nights* expressed the accumulated folklore of the Golden Age and wisdom of various Persian, Egyptian, and Middle-Eastern cultures (Burton).

Poe’s version starts like the original *Arabian Nights*. Queen Scheherazade, to stay alive, must tell interesting but realistic sounding stories each night to the King. He was fascinated, at first, as she told him tales about Sinbad’s adventures with monsters as big as “three lofty trees.” Their eyes,” she said, protruded from their sockets” and emitted “a terrible flash of fire” (*Complete Works* VI 83). She reported that she and Sinbad sailed to “an island many hundreds of miles in circumference, but which... had been built by a colony of little

things like caterpillars” (88). In Harrison’s version of Poe’s *Complete Works VI*, he noted that Poe was describing known islands constructed out of corallite. After this story, the King demanding even more fantastic tales.

In a twist from Poe’s, “Some Words with a Mummy,” Scheherazade provided actual descriptions of nineteenth-century inventions and technologies. A race of magicians, she said, “created a huge horse whose bones were iron [the steam locomotive] whose blood was boiling water” (97). A man was “made out of brass and wood, and leather, and endowed with such ingenuity that he would have beaten at chess” [“Maelzel’s Chess-Player”] scores of even the wisest men on Earth (97). Another of these “magi”... was a creature that put to shame even the genius of him who made it. So great were its reasoning powers that, in a second, it performed calculations [Babbage’s earliest computers] of so vast an extent that they would have required the united labor of fifty thousand fleshy men for a year.” A “conjurer... was neither man nor beast.” It had “brains of lead, intermixed with a black matter-like pitch, and fingers that it employed with such incredible speed and dexterity that it would have had no trouble in writing out twenty thousand copies of the *Koran* in an hour.” The Queen added, “This thing [the printing press] was of prodigious strength that it erected or overthrew the mightiest empires at a breath.” The King shouted, “Ridiculous,” scoffing at the idea that a machine with printed words might be so powerful (98).

However, the Queen continued to reel off the inventions of the nineteenth-century, even though she knew she had lost all credibility with the King. “Another of these magicians...by means of a fluid that nobody ever yet saw [the voltaic pile or the battery] could make corpses... get up and dance (99).” Another, “cultivated his voice to so great an extent that he could have made himself heard [the telegraph] from one end of the earth to the

other.” A magician “directed the sun to paint his portrait [the Daguerreotype] and the sun did” (100). The king had heard enough tales and shouted, “Preposterous...Stop! I can’t stand that, and I won’t. You have already given me a dreadful headache with your lies. Do you take me for a fool” (101)? Scheherazade knew that the King was “a man of scrupulous integrity, and quite unlikely to forfeit his word.” Subsequently she submitted with “good grace” to her fate of being strangled to death by his bowstring. However, “She derived... great consolation from the reflection that much of the history remained still untold” (102-03).

Like the King, nineteenth-century critics listened patiently to Poe’s journalistic and fantastic fictional science narratives. However, they only briefly paid attention to *Eureka* before sending Poe’s book to obscurity. If Poe would have had the opportunity to argue the finer points of his book to the King, he would have likely attempted to vigorously defend his ideas right up until, or even after his last breath! He forewarned critics in *Eureka*, “*What I here propound is true: — therefore it cannot die: — or if by any means it be now trodden down so that it die, it will rise again to the Life Everlasting*” (*Complete Works XVI* 185).

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