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Edgar Allan Poe desde la imaginación científica

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For though Poe, to be sure, never even dreamed of protons and electrons (holding, however, that the atom might be divisible), he certainly anticipated some of the discoveries of the new physics, particularly several of Einstein’s ideas as to the extent and shape of the universe.

George Nordstead, “Poe and Einstein” p. 174.
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RESUMEN

A. INTRODUCCIÓN

Los estudiantes de literatura americana todavía asumen cómodamente, entre otros conceptos erróneos, que Poe y otros escritores del siglo XIX trabajaban únicamente para y por la prensa. Tal desinformación es una de las razones por las que tantas personas continúan hoy en día confiando en viejos mitos, teniendo a Poe por un racista, un alcohólico, o un Casanova enamorado de las jóvenes y recordándolo como una caricatura de lo que realmente era, en lugar de como el primer hombre que planteó una posible solución a la paradoja de Olber en 1848 -entre otras muchas especulaciones científicas que, como el estudio demostrará, resultaron ser apoyadas por una fuerte evidencia experimental. De hecho, Poe fue uno de los hombres más respetados de su época, pero sus colaboraciones en ciencia y medicina continúan siendo desatendidas por la mayoría del público general y la academia. Mi trabajo deriva de una fascinación por esta faceta de Poe como científico, una trayectoria que me ha hecho pensar críticamente sobre las formas en que la ciencia, la pseudociencia y la medicina se han desarrollado en relación a la literatura. Esta tesis propone un recorrido completo por la aproximación de Poe a la ciencia y el racionalismo científico en su escritura que ha sido pasado por alto por los críticos muchas veces. El alcance expansivo de este trabajo incluye temas desde el impacto de la física, la neurología y la pseudociencia en la obra de Poe hasta su elaboración filosófica en Eureka y probar los límites de la ciencia y sus procedimientos. Si bien es cierto que muchos de los aspectos de este alcance científico han sido cubiertos por anteriores especialistas en Poe, se tratan principalmente de aportaciones
independientes y aisladas de observaciones científicas, que no han recibido suficiente atención sistemática en todo el espectro científico. La medicina, la química, la biología, la navegación marítima, la metrología, la astronomía, la física y las matemáticas comprenden el espectro científico de Poe, mientras que sus invenciones y pseudociencias abarcan la psicología, la metafísica, la frenología, la astrología, el galvanismo, el mesmerismo y la grafología.

B. OBJETIVOS

Esta tesis examina la recepción de los principales científicos que influyeron en Poe y la contribución del autor a la ciencia, el mundo literario-científico y la ficción americana. Mientras que previos estudios de Poe sólo observan cómo la ciencia contemporánea se encuentra en sus obras, este trabajo además examina cómo el autor también influyó en la ciencia. Algunas de las preguntas que este trabajo se plantea son: ¿cómo pudo Poe prever futuros experimentos científicos? ¿Cómo influyó la literatura de Poe en la ciencia y, en última instancia, cómo cambió el curso de la ciencia por derecho propio? Mi investigación conduce a implicaciones sustanciales para discusiones académicas en la intersección entre la literatura y la ciencia, ya que se centra no en la separación de ambos campos sino en su influencia mutua.

C. RESULTADOS

CAPÍTULO I—MEDICINA DEL CUERPO EN LA ESCRITURA DE POE analiza el uso de la medicina del cuerpo, o medicina externa, en el trabajo de Poe, poniendo un nombre a los fenómenos detrás de algunas de sus historias. Este capítulo profundiza en el aspecto médico de las narraciones científicas en la escritura de Poe. Demuestra el conocimiento médico de Poe y su uso de esa conciencia para crear brillantes piezas de
literatura.

CAPÍTULO II—LA MEDICINA DE LA MENTE Y LA ESTRUCTURA NARRATIVA

es la investigación de Poe en la mente: la división del cerebro y su actividad, y la relación entre las estructuras narrativas y el delirio psicosomático. Este capítulo articula cómo la percepción dual es primordial en relatos como “William Wilson” y “Berenice”, en la que encontramos personajes que sufren de monomanía, epilepsia o trance, dos formas de histeria según la psiquiatría del siglo XIX. “Eleanora” también se centra en transmitir sensaciones de colores y prismas al lector sintéticamente a través de la narrativa.

CAPÍTULO III—QUÍMICA: HACIA EL SUJETO POSTHUMANO discute cuestiones cibernéticas relacionadas con los experimentos de Poe con la muerte y cómo examina la idea de la inmortalidad a través de la materia mediante la ciencia ficción. El sujeto posthumano, el cuerpo virtual y el cuerpo del futuro siguen siendo un asunto científico, mientras que el medio trasciende a la ciencia. Por ejemplo, en The Great Work of the Lapis Sophorum According to Lamspring’s Process (1804) y en el capítulo correspondiente a “De la tintura del antimonio” Sigismond Bacstrom introduce la noción de “medicina celestial” para recalcar el proceso (al)químico utilizado para purgar el cuerpo de infestaciones externas. De manera similar, la obra maestra de Poe, “Ligeia”, tiene descripciones comparables de los síntomas de infestación al narrar cómo Rowena está poseída por el espíritu de Ligeia. Finalmente, el capítulo abarca el ocultismo, la pseudociencia y la criptografía -especialmente el desafío criptográfico, el ocultamiento de la identidad, el camino de la pseudociencia física a la ciencia de lo divino y la concepción de Dios de Poe.
CAPÍTULO IV—LA FÍSICA Y LOS CAMPOS DE VISIÓN explora encuentros con la muerte y el mesmerismo, casos en los que las personas viajan más allá de la muerte y son resucitadas a través de la electricidad. En tales situaciones, en las que se disuelve la transmutación de la materia en el espíritu y la existencia material y donde las personas son enterradas vivas, los sujetos muertos parecen vivos y los cuerpos vivos parecen muertos, respectivamente. Gracias a practicantes como Elliotson, Townshend y Capern, el mesmerismo llegó a una gran audiencia durante el siglo XIX y fue visto como un área de la ciencia en desarrollo que desdibujaba los límites de la capacidad humana. Curiosamente, esta concepción se refleja en varios cuentos en los que un niño es sujeto o agente de transmutación, que anticipa un estado de vida, señalado por Poe como “la tierra de los sueños reales”. En contraste, “La caída de la casa de Usher” tiene un enfoque completamente diferente a través del vidrio de la “teoría de la sensibilidad”, un modelo que presenta objetos inanimados como capaces de tener emociones, sentimientos y una voluntad propia a menudo peligrosa. Este capítulo también examina el tema de la óptica, la ciencia empírica de los siglos XVIII y XIX, los fenómenos físicos y sus efectos en la narrativa de Poe más allá de los límites de la percepción física. Textos como La Narrativa de Arthur Gordon Pym de Nantucket, “Manuscrito encontrado en una botella” y “Un descenso al Maelström” proporcionan datos sobre la pseudociencia de viajes: proyecciones astrales, alucinaciones e ilusiones visuales que surgen de fenómenos físicos. Con la creciente popularidad de la física en el periodo de preguerra, las revistas médicas profesionales, tratados como Klecksographien de Justinius Kerner, las revistas, y los efectos especiales en los teatros influenciaron significativamente los escritos de Poe. Postulo la hipótesis además de que los dispositivos ópticos del siglo XIX, como el
caleidoscopio, el microscopio, el telescopio y el estereoscopio, se difundieron más ampliamente entre el público, ofreciendo a los usuarios nuevas formas de “ver” literalmente el mundo. Poe mismo comenzó a experimentar con percepciones psicopáticas, tales como ilusiones ópticas, las falacias de la vista, el sonambulismo, y el juego de ilusiones sensoriales liminales y alucinaciones. También los efectos estereoscópicos magnetoestésicos y la proliferación de la fotografía apelaron ampliamente a Poe y a sus contemporáneos. La obsesión de Poe con la visión, la desproporción, la deformidad y la catalepsia se manifiestan en su "El corazón delator", "El gato negro", "Berenice" y "Los anteojos".

CAPÍTULO V—POE Y EL PREDARWINISMO analiza el magnetismo animal, el mesmerismo y las tradiciones del ocultismo personal y mental, prestando especial atención a las teorías contemporáneas sobre el magnetismo. También ocupa gran parte de este bloque temático la presencia de fenómenos frenológicos y sus síntomas y fisonomía en las obras de Poe, así como las teorías de Poe sobre la evolución y sus usos de los animales (a veces en oposición al hombre) en sus historias.

D. CONCLUSIONES

Poe utilizó el diálogo científico no sólo para hacer sus bulos más creíbles, sino también para que sus historias se considerasen más eruditas, y para reflexionar sobre los sucesos de su época, como por ejemplo el uso naciente de miembros protésicos en ese momento. En última instancia, esto se tradujo en un verdadero interés de Poe por el corpus científico, que nos trajo en obras maestras como Eureka.

Los neurocirujanos de renombre mundial Eric Altschuler y Peter Brugger se interesaron mucho por este proyecto, y no solo me ayudaron con muchos datos importantes para
terminar esta tesis, sino que también trabajamos mano a mano en algunas de sus partes. Los tres estamos trabajando actualmente en escribir un artículo juntos para ser publicado a una audiencia orientada más hacia la ciencia. Esta tesis ha sido posible, esencialmente, gracias a la colaboración de científicos “reales” que arrojan luz sobre algunos aspectos de la jerga científica, aspectos ocultos para el laico de la literatura. Estos esfuerzos de colaboración e investigación interdisciplinaria y mi trayectoria académica general me han permitido tener una comprensión profunda de áreas temáticas incluyendo, pero no limitandose a, la historia literaria, la literatura comparada, la medicina, la física, la biología y varias otras historiografías. Mi conclusión es que, al igual que en el siglo XIX, la literatura y la ciencia son dos disciplinas que necesitan trabajar juntas y deben tratar de llenar la brecha que las separa.
Students of American literature still comfortably assume, among other misconceptions, that Poe and other nineteenth-century writers worked for and by the penny press. This dearth of scholarship is one of the reasons why so many people continue to rely on old myths, dismissing Poe as a racist, an addict, or a Casanova infatuated with young ladies and remembering him as a caricature of what he really was rather than as the first man who posed a possible solution to Olber’s paradox in 1848—among other many scientific speculations which, as the study will show, turned out to be supported with strong experimental evidence. In fact, Poe was among the most widely respected men of his era, but his collaborations on science and medicine continue to be neglected by the majority of the public and academia. My work stems from a fascination with this side of Poe as a scientist, a trajectory that has made me think critically about the ways in which science, pseudoscience, and medicine have been constructed in relationship to literature. This dissertation proposes a complete tour of Poe’s approach to science and his scientific rationalism in his writing that has largely been overlooked by critics. The expansive scope of this work includes topics from the impact of physics, neurology, and pseudoscience on Poe’s oeuvre to his philosophical elaboration in *Eureka* and testing the limits of science and its procedures. While it is true that many aspects of this scientific scope have been covered by previous Poe scholars, they have mainly been independent, isolated parcels of science observations, which have not received enough *systematic* attention across the entire scientific spectrum. Medicine, chemistry, biology, sea
navigation, metrology, astronomy, physics, and mathematics comprise Poe’s scientific spectrum, whereas his inventions and pseudosciences are inclusive of psychology, metaphysics, phrenology, astrology, galvanism, mesmerism, and graphology.

B. OBJECTIVES

This dissertation examines the reception of leading scientists that influenced Poe and the authors’ contribution to and impact on science, the literary-scientific world, and American fiction. In addition to Poe scholarship that observes how contemporary science is found in Poe’s works, this study examines how the author likewise influenced science. Some of the questions this study asks are: How could Poe anticipate future scientific experiments? How did Poe’s literature influence science, and ultimately how did that change the course of science in its own right? My research has substantial implications for scholarly discussions on the intersection between literature and science, as it focuses not on the separation of both fields but on their mutual influence.

C. RESULTS

CHAPTER I—MEDICINE OF THE BODY IN POE’S WRITING analyzes the use of medicine of the body, or external medicine, in Poe’s work, putting a name to the phenomena behind some of his stories. This chapter delves deeper into the medical aspect of scientific narrations in Poe’s writing. It demonstrates Poe’s medical literacy and his use of that awareness to create brilliant pieces of work.

CHAPTER II—MEDICINE OF THE MIND AND NARRATIVE STRUCTURE is Poe’s inquiry into the mind: the division of the brain and its activity, and the relationship between narrative structures and psychosomatic delirium. This chapter articulates how dual perception is paramount in stories such as “William Wilson” and “Berenice,” in
which we encounter characters who suffer from monomania, epilepsy, or trance—two forms of hysteria according to nineteenth century psychiatry. “Eleanora” similarly focuses on conveying sensations of colors and prisms to the reader synesthetically through narrative.

CHAPTER III—CHEMISTRY: TOWARDS THE POSTHUMAN SUBJECT discusses cybernetic issues relating to Poe’s experiments with death and how he probes the idea of immortality through matter through science fiction. The posthuman subject, the virtual body, and the body of the future remain a scientific matter, while the medium transcends science. For instance, in The Great Work of the Lapis Sophorum According to Lamspring’s Process (1804) and in the chapter corresponding to “Of the Tincture of Antimony,” Sigismond Bacstrom introduces the notion of “celestial medicine” to highlight the (al)chemical process used to purge the body from external infestations. In a similar vein, Poe’s self-named masterpiece “Ligeia” has comparable descriptions of infestation symptoms when narrating how Rowena is possessed with the spirit of Ligeia. Finally, the chapter covers occultism, pseudoscience, and cryptography—especially the cryptographic challenge, the concealment of identity, the path from physical pseudoscience to the science of the divine, and Poe’s conception of God.

CHAPTER IV—PHYSICS AND THE FIELDS OF VISION explores encounters with death and mesmerism, cases in which people travel beyond death and are resuscitated through electricity. In such situations, in which the transmutation of matter into spirit and material existence are dissolved, where people buried alive, dead subjects seem alive and living bodies seem dead. Thanks to practitioners such as Elliotson, Townshend, and Capern, mesmerism reached a large audience during the nineteenth century and was seen
as an area of science in development that blurred the boundaries of human capability. Interestingly, this conception is reflected in several tales in which a child is subject to or the agent of transmutation, which anticipates a state of life, noted by Poe as “the land of real dreams.” In contrast, “The Fall of the House of Usher” has a completely different approach through the “sensitivity theory” glass, a model that presented inanimate objects as possessing emotions, feelings, and an often dangerous will of their own. This chapter also examines the subject matter of optics, eighteenth- and nineteenth-century empirical science, physical phenomena, and their effects on Poe’s narrative beyond the limits of physical perception. Texts such as *The Narrative of Arthur Gordon Pym of Nantucket*, “Manuscript Found in a Bottle,” and “A Descent into the Maelström” provide data on the pseudoscience of travel: astral projections, hallucinations, and visual illusions that arise from physical phenomena. With the growing popularity of physics in the prewar period, professional medical journals, treatises such as Justinius Kerner’s *Klecksographien*, magazines, and special-effect techniques in theaters significantly influenced Poe’s writings. I further hypothesize that the optical devices of the nineteenth century, such as the kaleidoscope, microscope, telescope, and stereoscope, became more widely diffused among the public, offering users new ways of literally “seeing” the world. Poe himself began to experiment with psychopathic perceptions, such as optical illusions, fallacies of sight, sleepwalking, and the play of liminal sensory illusions and hallucinations. Also magnetoaesthetics stereoscopic effects and the proliferation of photography appealed widely to Poe and his contemporaries. Poe’s obsession with vision, disproportion, deformity, and catalepsy is manifested in his “The Tell-Tale Heart,” “The Black Cat,” “Berenice,” and “The Spectacles.”
CHAPTER V—POE AND PREDARWINISM analyzes animal magnetism, mesmerism and traditions of personal and mental occultism, with particular attention to contemporary theories on magnetism. Also occupying much of this thematic block is the presence of phrenological phenomena and its symptoms and physiognomy in Poe’s works, as are Poe’s theories on evolution and his uses of animals (sometimes in opposition to man) in his stories.

D. CONCLUSIONS

Poe used scientific dialogue not only to make his hoaxes more believable, but also to his stories sound more savvy, and to reflect on the happenings of his era such as the nascent use of prosthetics at that time. Ultimately, this transcribed into a real interest of Poe for the scientific corpus, which translated into masterpieces such as *Eureka*.

The world-renowned neurosurgeons Eric Altschuler and Peter Brugger became very interested in this project, and not only did they help me with many important data to put this dissertation together, but we also worked hand by hand on some parts of it. The three of us are currently working on a coauthored article to be published for a more medically oriented audience. This thesis has been possible, essentially, thanks to the collaboration of “real” scientists that shed light on some aspects of scientific jargon, which are hidden to the literature layman. These collaborative efforts and interdisciplinary research and my overall academic trajectory have granted me to have an in-depth understanding of subject areas including, but not limited to, literary history, comparative literature, medicine, physics, biology, and several other historiographies. My conclusion is that, like in the nineteenth century, literature and science are two disciplines that need to be working back together and must try to fill the gap that separates them.
INTRODUCTION

Poe was remarkably well versed in the sciences of his time, a fact neglected by the vast majority of his critics even today.”—John Tresch, 2014

Max L. Autrey explains that driven by economic and psychological needs, Edgar Allan Poe did not find sufficient time to pursue his general interest in science until very late in his life. My proposed research project focuses on Edgar Allan Poe, in whose literary work science and medicine play a pivotal role, and his relationship with the science of the late eighteenth and early nineteenth centuries: particularly his exploration of so-called pseudosciences and his surprising influence on modern science. “Edgar Allan Poe from the Scientific Imagination” will examine the reception of leading scientists that influenced Poe and the authors’ contribution to and impact on science, the literary-scientific world, and American fiction. In addition to Poe scholarship that observes how contemporary science is found in Poe’s works, this study will examine how the author likewise influenced science. Some of the questions this study asks are: How could Poe anticipate future scientific experiments? How did Poe’s literature influence science, and ultimately how did that change the course of science in its own right?

As noted by Tresch in his introductory quote, students of American literature still comfortably assume, among other misconceptions, that Poe and other nineteenth-century writers worked for and by the penny press. This dearth of scholarship is one of the reasons why so many people continue to rely on old myths, dismissing Poe as a racist, an addict, or a Casanova infatuated with young ladies and remembering him as a caricature of what he really was rather than as the first man who posed a possible solution to
Olber’s paradox in 1848—among other many scientific speculations which, as the study will show, turned out to be supported with strong experimental evidence. In fact, Poe was among the most widely respected men of his era, but his collaborations on science and medicine continue to be neglected by the majority of the public and academia. My work stems from a fascination with this side of Poe as a scientist, a trajectory that has made me think critically about the ways in which science, pseudoscience, and medicine have been constructed in relationship to literature.

“Edgar Allan Poe from the Scientific Imagination” proposes a complete tour of Poe’s approach to science and his scientific rationalism in his writing that, as Tresch notes above, has largely been overlooked by critics. The expansive scope of this work includes topics from the impact of physics, neurology, and pseudoscience on Poe’s oeuvre to his philosophical elaboration in Eureka and testing the limits of science and its procedures. While it is true that many aspects of this scientific scope have been covered by previous Poe scholars, they have mainly been independent, isolated parcels of science observations, which have not received enough systematic attention across the entire scientific spectrum. Medicine, chemistry, biology, sea navigation, metrology, astronomy, physics, and mathematics comprise Poe’s scientific spectrum, whereas his inventions and pseudosciences are inclusive of psychology, metaphysics, phrenology, astrology, galvanism, mesmerism, and graphology. My research has substantial implications for scholarly discussions on the intersection between literature and science, as it focuses not on the separation of both fields but on their mutual influence. During the 1830s and early 1840s, while Poe wrote his most important works of science fiction avant la lettre, America was experiencing a revolution in animal magnetism and medical sciences.
Researchers have primarily focused on the period covering the years 1830 to 1850, overlooking vast quantities of essential material from this earlier period. I propose to remedy this critical oversight in the following ways with the present research project.

CHAPTER I—MEDICINE OF THE BODY IN POE’S WRITING will analyze the use of medicine of the body, or external medicine, in Poe’s work, putting a name to the phenomena behind some of his stories. This chapter will delve deeper into the medical aspect of scientific narrations in Poe’s writing. It will demonstrate Poe’s medical literacy and his use of that awareness to create brilliant pieces of work. Poe mocked the doctors of his time, but at the same time they were a group that interested him, whose jargon he utilized, mimicked and reproduced for his own fiction. Poe used scientific dialogue not only to make his hoaxes more believable, but also to his stories sound more savvy, and to reflect on the happenings of his era such as the nascent use of prosthetics at that time. Ultimately, this transcribed into a real interest of Poe for the scientific corpus, which translated into masterpieces such as *Eureka*. I presented the results of this research at the Fourth International Edgar Allan Poe Conference (2015) in New York and later published them in a shorter version as an article in *Trespassing Medicine*, “Edgar Allan Poe, MD: Medical Fiction and the Birth of Modern Medicine” (2015), which led me to meet Dr. Altschuler, essential figure in the next chapter.

CHAPTER II—MEDICINE OF THE MIND AND NARRATIVE STRUCTURE is Poe’s inquiry into the mind: the division of the brain and its activity, and the relationship between narrative structures and psychosomatic delirium. This chapter articulates how dual perception is paramount in stories such as “William Wilson” and “Berenice,” in which we encounter characters who suffer from monomania, epilepsy, or
trance—two forms of hysteria according to nineteenth century psychiatry. “Eleanora” similarly focuses on conveying sensations of colors and prisms to the reader synesthetically through narrative. The world-renowned neurosurgeons Eric Altschuler and Peter Brugger became very interested in my work, and not only did they help me with many important data to put this chapter together, we worked hand by hand on most of it. The three of us are currently working on a coauthored article to be published for a more medically oriented audience.

CHAPTER III—CHEMISTRY: TOWARDS THE POSTHUMAN SUBJECT discusses cybernetic issues relating to Poe’s experiments with death and how he probes the idea of immortality through matter through science fiction. The posthuman subject, the virtual body, and the body of the future remain a scientific matter, while the medium transcends science. Poe’s obsession with dismembered bodies and the separation and subsequent binding of different body parts can be seen in “Loss of Breath,” “Berenice,” “Ligeia,” and “Morella.” Through scientific explorations narratives, all Poe’s stories offer cases in which the body decomposes before the narrator and then resurrects, which underscores the blur of the boundary of human ability and fantasy. For instance, in The Great Work of the Lapis Sophorum According to Lamspring’s Process (1804) and in the chapter corresponding to “Of the Tincture of Antimony,” Sigismond Bacstrom introduces the notion of “celestial medicine” to highlight the (al)chemical process used to purge the body from external infestations. In a similar vein, Poe’s self-named masterpiece “Ligeia” has comparable descriptions of infestation symptoms when narrating how Rowena is possessed with the spirit of Ligeia. From these comparable narratives, it is clear that Poe’s literature cannot be fully understood without an analysis of the science of the time.
This epistemological investigation and argument forms the central hypothesis of my dissertation. The notable influence of science on the works of a master author such as Edgar Allan Poe cannot be ignored. In his work *Eureka*, for instance, there is sufficient evidence of it, as well as a more detailed analysis: “a tree could be a tree or not,” and the unparticled matter “not only permeates all things but impels all things—and thus is all things within itself.” Such descriptions suggest that authors begin to define science in terms of empirical or phenomenological knowledge and draw slowly apart from the “invisible forces” which associate it with magic and the occult—opposing a material, sometimes pugnacious resistance to the omnipotence of the pseudoscientific control. Goethe’s vast influence on Poe will be noted, as well as the similitude between two of his works, having not been mentioned in scholarship up to date. Finally, the chapter will cover occultism, pseudoscience, and cryptography—especially the cryptographic challenge, the concealment of identity, the path from physical pseudoscience to the science of the divine, and Poe’s conception of God.

CHAPTER IV—PHYSICS AND THE FIELDS OF VISION explores encounters with death and mesmerism, cases in which people travel beyond death and are resuscitated through electricity. In such situations, in which the transmutation of matter into spirit and material existence are dissolved, where people buried alive, dead subjects seem alive and living bodies seem dead. Thanks to practitioners such as Elliotson, Townshend, and Capern, mesmerism reached a large audience during the nineteenth century and was seen as an area of science in development that blurred the boundaries of human capability. Interestingly, this conception is reflected in several tales in which a child is subject to or the agent of transmutation, which anticipates a state of life, noted by
Poe as “the land of real dreams.” In contrast, “The Fall of the House of Usher” has a completely different approach through the “sensitivity theory” glass, a model that presented inanimate objects as possessing emotions, feelings, and an often dangerous will of their own. This chapter also examines the subject matter of optics, eighteenth- and nineteenth-century empirical science, physical phenomena, and their effects on Poe’s narrative beyond the limits of physical perception. Texts such as *The Narrative of Arthur Gordon Pym of Nantucket*, “Manuscript Found in a Bottle,” and “A Descent into the Maelström” provide data on the pseudoscience of travel: astral projections, hallucinations, and visual illusions that arise from physical phenomena. With the growing popularity of physics in the prewar period, professional medical journals, treatises such as Justinius Kerner’s *Klecksographien*, magazines, and special-effect techniques in theaters significantly influenced Poe’s writings. I further hypothesize that the optical devices of the nineteenth century, such as the kaleidoscope, microscope, telescope, and stereoscope, became more widely diffused among the public, offering users new ways of literally “seeing” the world. Poe himself began to experiment with psychopathic perceptions, such as optical illusions, fallacies of sight, sleepwalking, and the play of liminal sensory illusions and hallucinations. Also magnetoaesthetics stereoscopic effects and the proliferation of photography appealed widely to Poe and his contemporaries. Poe’s obsession with vision, disproportion, deformity, and catalepsy is manifested in his “The Tell-Tale Heart,” “The Black Cat,” “Berenice,” and “The Spectacles.”

CHAPTER V—POE AND PREDARWINISM analyzes animal magnetism, mesmerism and traditions of personal and mental occultism, with particular attention to contemporary theories on magnetism. Also occupying much of this thematic block is the
presence of phrenological phenomena and its symptoms and physiognomy in Poe’s works, as are Poe’s theories on evolution and his uses of animals (sometimes in opposition to man) in his stories. To successfully explore the complexities, apart from the complete works of Edgar Allan Poe, I will also study Poe’s nineteenth-century contemporaries’ testimonies, works, and annotated bibliographies, with special attention to their scientific observations and descriptions.

This thesis has been possible, essentially, thanks to the collaboration of “real” scientists that shed light on some aspects of scientific jargon, which are hidden to the literature layman. These collaborative efforts and interdisciplinary research and my overall academic trajectory have granted me to have an in-depth understanding of subject areas including, but not limited to, literary history, comparative literature, medicine, physics, biology, and several other historiographies.

One of the first projects in this line of research is *Science and Pseudo-Science in Poe’s Works* developed by Thomas Hall in 1938 for the University of North Texas, which after an arduous investigation admitted that “numerous writers have interpreted individual stories and poems and [Poe’s] life, but few have made any attempt to list those subjects in the field of science in which Poe had an interest” (p. iii). When he finished his dissertation he concluded that “it is apparent that much remains to be done in interpreting this work” (p. iv), which is the critical oversight I plan to cover. In this project, I argue that these common focal points reveal an important but neglected area of overlap between Gothic literary tradition and scientific representations of the mind and the body. Other important bibliographical sources that helped this research are David E.E. Sloane “Early Nineteenth-Century Medicine in Poe’s Short Stories” (Unpublished M.A. Thesis, Duke
University, 1966); David E. Whisnant, “Edgar Allan Poe’s Study of Science” (Unpublished M.A. Thesis, Duke University, 1962); and Carroll D. Laverty, “Science and Pseudo-Science in the Works of Edgar Allan Poe” (Unpublished Ph.D. Dissertation, Duke University, 1951) the latter being a vast source of inspiration and information for the backbone of this dissertation in itself. Other pertinent titles are Susan Amper *Bloom’s How to Write About Edgar Allan Poe* (2007), J. W. Robertson’s robust Edgar Allan Poe Bibliography and Commentary (1934) and Benjamin Franklin Flisher IV’s *The Gothic’s Gothic, Study Aids to the Tradition of the Tale of Terror* (1988), an annotated bibliography with two sections on subjects and authors, the latter one including a 46-page annotated bibliography on Poe, which helped me very much when this dissertation was at its embryonic stage. The corpus of Edgar Allan Poe (works, biographies, translations) that I use is the one recommended by Poe Studies.

The Catedra edition to Poe’s “Relatos” helped me when I needed to consult some of Poe’s wording in my mother tongue. Félix Martín Gutiérrez stated in its introduction, in 1988, that

> These stories certainly invite us to recreate an hallucinating narrative psychogenesis, if we pass from the beautiful and gloomy features of Morella or Berenice to Ligeia, or if we trace their common but irremediable fate, or if we find the seed of perversion from ‘Berenice,’ ‘King Pest’ or ‘The Assignation,’ premature burials, reincarnations and mesmeric phenomena which will fertilize in later stories (p. 49).[^1]

This project attempts to recover the ideological as well as cultural valences of scientific key terms and ideas in Poe’s works. As such, “Edgar Allan Poe from the Scientific Imagination” has interest for scholars working in fields beyond Gothic and

Victorian literature, and should particularly appeal to those interested in placing literature and science in conversations by focusing on the cultural moment in which the disciplines began to define themselves as separate and ultimately quite opposite visions of the humanities. Understanding how and when literature and science were conceived as continuous, collaborative, or distinctive fields highlights this interdisciplinary study and illuminates some of the limitations of the recent interest in theoretical engagements between science and humanities.

I anticipate that this work will interest different audiences in future years, including transnational studies and the humanities and social science networks. “Edgar Allan Poe from the Scientific Imagination” could be of special interest if Spanish universities would be willing to create a department of science and technology (STS) studies, which is a very widespread discipline in the United States since the ’70s but still embryonic in Spain.

The main objective and purpose of this research, which is at the crossroads of science and literature, is to show Poe’s utter familiarity with the scientific theories and atmospheric effects of his time, and his thorough application of those to his works. This research covers the history of science and relates it to different aspects of Poe’s work, which speak to the cultural and social sensationalism of the eighteenth and nineteenth centuries. In the words of D. H. Lawrence, “This makes [Poe] almost more a scientist than an artist.” My study is important because, by attending to ways in which Poe’s works turn away from pure fiction and the model of Gothic that underwrites it, I broaden our critical understanding of the era’s aesthetic goals.
CHAPTER I

MEDICINE OF THE BODY IN POE’S WRITING

Despite the most particular and attentive descriptions of dying faces and dead bodies, characters unfortunate enough to die in a story by Edgar Poe will almost certainly be misdiagnosed.

Michael Cisco, *Supernatural Embarrassment* 156

Edgar Allan Poe’s obsession with medical pathology permeated many of his essays, poems, and stories. That knowledge gathered from mesmerists and pseudoscientists of his time translated into his short stories as organic decomposition and electrical theories, as well as attempts to satirize, to criticize, and to leave a record of his ambitious interest in nineteenth-century medicine and medical practices. Poe manifested “the extent of his knowledge” of medical interests, practices, and sources through his reviews of several medical works for the *Southern Literary Messenger* (Sloane, 2). Some of the titles he reviewed are Draper’s *Introductory Lecture to a Course of Chemistry and Natural Philosophy*; The Doctor, published by Harper and Brothers; Fauval-Goraud’s *Phreno-Mnemotechny*; Reynolds’ *South-Sea Expedition*; Haxall’s *A Dissertation on the Importance of Physical Signs*; Miles’ *Phrenology, and the Moral Influence of Phrenology*; Roget’s *Animal and Vegetable Physiology*; and Drake’s *The Western Journal of the Medical and Physical Sciences*, to name just a few. These reviews are just one example of Poe’s interest in science.

In the nineteenth century, America was undergoing the explosion of a scientific era in which most of the scientific theories as known today were being discovered, and many writers of the time were obsessed with science. Poe’s work, in particular, is a rich

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2 A shorter version of this chapter was published in *Trespassing Magazine*. 

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reflection of this, and his evident fascination with science can be perceived in most of his stories, starting with one of his early poems, “To Science,” (published in 1829, when Poe was 20s), in which he shows his concern about the development of science and the new discoveries and hypotheses. At that time America was under the influence of sensationalism due to pseudoscience and pseudoscientific theories, which bridged the border between hoax and truth. Poe and his creations were influenced significantly by the growing popularity of scientific sensationalism, as manifested, to name a few examples, in the progress of physics in the American prewar period, professional medical publications made accessible to the public, the publication of treaties such as *Klecksographien* by Justinus Kerner (which galvanized the work of well-known psychiatrist and psychoanalyst Hermann Rorschach, creator of the Rorschach inkblot test), and magazines, English periodicals of the 1830s, and theatre, to name a few.

This scientific and medical progress was manifested in Poe’s stories: dyspnea, anxiety, paroxysm, coma, suspended animation, use of prosthetics, bio-augmentation, bio-modification, and epilepsy can be found in “Loss of Breath”; monomania, catatonia, catalepsy, narcolepsy, and inbreeding in “Eleonora” and “The Fall of the House of Usher”; cataplexy in “Berenice”; miasmatic theories, Spanish influenza, and yellow fever in “The Masque of the Red Death”; hallucinogens, hypnotics, sedatives, and ancient anesthesia in “The Man That Was Used Up;” proboscis and cyclopia in “Bon-Bon”; analgesia in “The Business Man”; and tuberculosis in “Ligeia.”

While some may accuse Poe of being sensationalist, or of using medicine in his stories with sensationalistic purposes, he indeed explored a new medical science capable of diffusing the barriers of human potential.
The contemplation of those sick bodies—emblems of carnal degradation in our hygienic and health-oriented societies—invites us to enter a new and afflicted universe of fear in which the physically defective “real” imposes itself over previous, romanticized visions of illness à la Baudelaire

says Isabel Durán in her essay “Autoscriptotheraphy: Cancer Diaries as Battle Diaries. Feeling in Others.” Art, she continues, “is no longer just contemplation and/or scrutiny: art becomes therapeutic or, in a liberating sense, cathartic, which was its original function of course, in classical aesthetics. Art excites our empathy; healthy observers can thereby understand and communicate with the unhealthy. Because art makes visible the invisible, opens the public to the private; and destroys the frontier between art itself and life” (51-52).

This chapter will analyze the use of medicine of the body or external medicine in Poe’s work, putting a name to the phenomena behind some of his stories. The narrator of the story “The Business Man” explains that “it’s an old saying, and a true one, however, that money is nothing in comparison with health” (417). In a country in which even 200 years after Poe’s birth health insurance and health care remain a problem, it seems appropriate to investigate how these medical concerns were expressed in a time when America was gaining autonomy and working independently, detached from European founders and settlers.

Noting Poe’s concern for health in his personal and creative life, and the presence of medicine throughout Poe’s work, this chapter will delve deeper into the medical aspect of scientific narrations in Poe’s writing. It will demonstrate Poe’s medical literacy and his use of that awareness to create brilliant pieces of work. The article will display how Poe, through his medical research and interests, introduced practices of medicine and science
into his works which present-day readers receive as normal and even familiar but which, during his time, created an atmosphere of terror so real for his readers and contemporaries that hoaxes were taken at face value, and his unabridged imagination was capable of creating realities that have only been achievable two centuries later.

In accordance with the nineteenth-century fashion, experiments with death and explorations of limits of life were very attractive to the general public and Poe in particular. Through his science fiction Poe imagined a world where immortality was possible, and in works such as “The Oblong Box,” the post-human subject, the virtual body, and the body of the future remain scientific matters, whereas the matter in itself transcends science. But perhaps more interestingly, in “Loss of Breath,” Poe’s obsession with dismembered bodies and the separation and later union of different parts of the body can be observed, likely due to the nascent use of prosthetics at that time. The idea of an organism capable of living without breathing, which is one of the multiple examples of physical impossibility attractive to Poe and his contemporaries, also fascinated Poe, and he explored it in this story. “Berenice,” “Ligeia,” and “Morella” offer cases in which the body decomposes before the narrator’s eyes and then resuscitates.

The analysis of general science and science fiction in Edgar Allan Poe’s work has been studied in manifold essays, but not as many have narrowed studies to medical sciences, which are relevant, interesting, and multiple. Poe’s contribution to medicine and history is significant, not only because his stories made nineteenth-century readers question the practices inside and outside of the practitioner’s room and the limits of science and pseudoscience—where did one end and the other begin?—but also because Poe left a trace of these practices in a vast percentage of his total corpus of work. His
criticism and analysis yielded more results than those of any other author writing about science and medicine in fiction at that time. Poe’s works demand our attention because of the implicit psychology in them.

For a better understanding of Poe’s intention, the reality of the United States in the first half of the nineteenth century must be taken into account. It was a world that had no reliable painkiller until 1846, as Taylor Stoehr affirms in his book *Hawthorne’s Mad Scientists: Pseudoscience and Social Science in Nineteenth-Century Life and Letters* when explaining the anesthetic uses of trance and the excitement mesmerism produced at that time (24). Since Edgar Allan Poe lived in the early nineteenth century, it is important to note how Michael Cisco, in his master’s dissertation, *Supernatural Embarrassment: The Polemic Between Science and the Supernatural in the Writings of Nathaniel Hawthorne, Edgar Allan Poe and Herman Melville*, explains the conception of death in Poe’s time. “[T]he eighteenth century was obsessed with cadavers, and tormented by the fact that the operations of life were still so obscure that even the precise moment of death could not strictly be determined” (155). This is a very persistent motif in Poe’s tales, where the boundaries between life and death are blurred.

Referring to Philippe Ariès, Cisco maintains that the “eighteenth centur[y] regarded death principally as an individual experience, one more and more to be understood in terms of rape. The rape of life by death and the rape of the cadaver by the anatomist are parallel” (155). One of the missions Poe had in his stories was to give corporeity and protagonism to death itself, where the corpses are not totally dead and the living are not entirely alive. Similarly, Poe mocked the doctors of his time, but at the same time they were a group that interested him. He did a substantial amount of medical
research himself, as this chapter will demonstrate, and fictionalized it for his stories. Ariès clarifies that eighteenth-century contemporaries were not only concerned by the idea of dying and the moral and spiritual idea of an afterlife, but rather about how the anatomist would “rape” the cadaver with his surgical instruments. In the same fashion, terror is felt when one is faced with an anatomist’s table carefully prepared with all kinds of instruments to dissect a dead body. This type of fear is fear of medicine, of the unknown, of one’s giving of himself freely and without question to a practitioner who might or might not know what he is doing.

1.1. PLAYING DOCTOR: HOMEMADE MEDICAL PRACTICES GONE AWRY

One story in which Poe reflected this anxiety about medical practices is “Berenice,” published in 1835 in the Southern Literary Messenger. Antonio Ballesteros explains that the tale was written under the inspiration of a macabre bet where he committed to represent the usual practice at the time of the desecration of tombs by dentists to steal teeth from the dead (54). The story is notorious as one of Poe’s most violent and gory creations. Because the readers were so horrified with the story, they complained to Thomas W. White, the editor of the newspaper, and this led to a debate discussing Poe’s intentionality: he was more focused in making marketable stories than with the content, but he did publish a revised version five years later, which was missing

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3 My translation. Original quote: “causado por una macabre apuesta en la que se comprometió a reflejar la practica habitual en la época de la profanacion de tumbas por parte de los odontologos para robarles los dientes a los difuntos”.

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four paragraphs of the original. We will discuss the 1835 original version, since it offers descriptions of schizophrenia and cataplexy as well as monomania.

The narrator and main character of the story is Egæus, who is preparing to marry his cousin, Berenice, after growing up with her in their familial mansion. Despite being full of life and “agile, graceful, and overflowing with energy,” (333, column 1) she starts suffering from an unknown illness that makes her slowly deteriorate physically until her death; the only part of her body that appears to remain intact is her teeth. Following Berenice’s worsening disease Egæus suffers from chronic monomania and, “ill of health, buried in gloom,” (333, column 1) is the victim of frequent trances and obsessions, one of the latter being Berenice’s intact teeth. One night a maid tells Egæus that Berenice’s tomb has been profaned: he finds himself covered in blood, “thirty-two small, white and ivory-looking substances” (336) in a box, and tools of dentistry. In the end, it is unclear whether Berenice was buried alive or not. Like the Ushers, whom we will meet later, the cousins Egæus and Berenice “grew up together in my paternal halls” (333, column 1) in a familial mansion where the narrator was born, his mother died, and the family has lived in seclusion. Egæus had lost, throughout the years, “all sense of motion or physical existence” (333, column 2) and “the powers of mind more particularly exercised were with me … the attentice, and are, with the day-dreamer, the speculative” (334, his italics). Similarly to what happens in “Ligeia” with Rowena, as will be seen in Chapter III, Berenice loved Egæus for a long time, and although he “shuddered in her presence and grew pale at her approach” he determined to marry her, of course, “in an evil moment” (334, column 2). Egæus is incapable of love; Berenice is nothing but a thing “to analyze”
for him, “not as an object of love, but as the theme of the most abstruse although
desultory speculation” (334, column 2).

Egæus is not interested in anything other than his books: “my passions always
were of the mind” says he, like the narrator in “Ligeia” will also do (334, column 2, his
italics). As Ballesteros posits, “these are asexualized female characters—trait which the
cinematic versions of these stories have stolen from us—more spiritual and intellectual
than sexually attractive. Hence the union with them occurs with death” (62)\(^4\) His life has
been dedicated to “the studies of the cloister” in “monastic thought and erudition …
addicted body and soul to the most intense and painful meditation” (335, column 1).
Loitering away his boyhood in books, Egæus seems like a well-read man full of wit and
intellect, interested in earthy and scientific subjects [“the soul has no previous existence
… existence utterly and solely in itself” (333, column 1)]. However, when Berenice
grows ill, he fails to identify, or even mention, the exact disease she has—a disease that
changes her appearance completely, “even the identity of her person” (333, column 2),
until Egæus recognizes her no more. In a very professional fashion and almost imitating
the speech of a doctor, he proceeds to offer a diagnosis of his cousin:

Among the numerous train of maladies superinduced by that fatal and primary
one which effected a revolution of so horrible a kind in the moral and physical
being of my cousin, may be mentioned as the most distressing and obstinate in its
nature, a species of epilepsy not unfrequently terminating in \textit{trance} itself – trance
very nearly resembling positive dissolution, and from which her manner of
recovery was in most instances, startlingly abrupt (643).

Interestingly, Egæus uses the same speech as the doctors did in his time. (Poe will have
many of his characters do this.) He doesn’t clearly name the disease, but he surmises. He

\(^4\) My translation. Original quote: “Se trata de personajes femeninos asexuados —rasgo que nos han hurtado
las versiones cinematográficas de esos relatos—, mas espirituales e intelectuales que sexualmente atractivos.
De ahi que la union con ellas se produce con la muerte”.
also speculates on his own maladies: “My own disease—for I have been told that I should call it by no other appellation” (643, my italics). He does not mention that he has been in a practitioner’s consultation, but he surprisingly tells us that he “[has] been told” his disease. This lack of information and this speculative tone make us wonder if the narrator is making this information up. Is he rather ashamed of saying that it is in fact a self-diagnosis for fear of being taken for a fool, or of being seen as too pretentious? Poe also describes these pretensions in “The Business Man”: “If you ever perceive a man […] pretending to be a lawyer, or a blacksmith, or a physician—anything out of the usual way—you may set him down at once as a genius, and then, according to the rule-of-three, he’s an ass” (413).

In “Berenice,” the “genius/ass” Egæus further describes his situation as follows: “my own disease, then, grew rapidly upon me, and assumed finally a monomaniac character of a novel and extraordinary form. […] This monomania, […] a morbid irritability of those properties of the mind in metaphysical science termed the attentive” (643). The narrator then explains how he has to struggle with his disease: “[T]hen came the fury of my monomania, and I struggled in vain against its strange and irresistible influence” (646). His self-diagnosed monomania, which he calls “my infirmity,” “my disease,” “my disorder,” “the undue … and morbid attention,” becomes more evident when he describes what he felt when he saw Berenice’s teeth for the first time. He starts to describe “a sense of insufferable anxiety” which made him remain for some time “breathless and motionless” (646), a feeling that will not be exclusive to this story but will also be seen in some others.
Poe gives particular examples of monomaniac behavior: “to lose myself for an entire night in watching the steady flame of a lamp ... to repeat monotonously some common word, until the sound, by dint of frequent repetition, ceased to convey any idea whatever to the mind” (333, column 2). Egæus knows he has a problem. He acknowledges it with the following statement: “my disorder reveled in the less important but more startling changes wrought in the physical frame of Berenice—in the singular and most appalling distortion of her personal identity” (334, column 2).

Monomania is a mental trait that is identified by an extreme obsession or fixation. The term “monomania” has been frequently linked to the term “idée fixe.” The latter is more used in literature than the former, but both were medical terms in 1812. Both are fixations in the line of obsessive-compulsive disorders; the main difference between them is that an idée fixe is a fixation with a particular idea or obsession, the subject being unaware of it, whereas a monomaniac can be aware that he is obsessing over something. Jean-Étienne Dominique Esquirol coined the term in 1810 and explained its characteristics in his 1839 work *Des Malades Mentales*. The first known use of the word “monomania” in English, according to Merriam-Webster, was 1815, twenty years before this story was published; it is eloquent evidence of Poe’s literacy that he was able to create a whole story surrounding this term. The dictionary also states that monomania is considered a mental illness.

An example of monomania can be observed in the following excerpt, in which Egæus contemplates the teeth of Berenice:

The teeth!—the teeth!—they were here, and there, and everywhere, and visibly and palpably before me; long, narrow, and excessively white ... all other matters and all different interests became absorbed in their single contemplation. They—
they alone were present to the mental eye, and they, in their sole individuality, became the essence of my mental life. (215-216)

This is the first time that a monomaniac character appears in one of Poe’s tales. Poe will use this resource again in stories such as “The Black Cat,” “The Tell-Tale Heart,” and of course “The Man of the Crowd.”

It is worth noting that all the supernatural events happen when Egæus is in his library, surrounded by the books he has read and reread. Another implicature for this could be of Egæus as a quixotic figure, gone mad from so much reading. José Antonio Gurpegui calls Roderick Usher “the dreadful Quixote” in his essay on Poe’s early years. In fact, there are very interesting studies on the neurological conditions in Don Quixote by Jose Alberto and Fermin Palma, which help us to learn that “since the 19th century, several authors have discussed the disease that Don Quixote appears to be suffering from. The first author who did so was Philippe Pinel (1745–1826), followed immediately by many others. They all agreed in diagnosing Don Quixote as ‘monomaniac.’” Don Quixote gets his mental disorder from reading chivalric books, and the narrator’s illness in “The Premature Burial” disappears once he stops reading medical books and bugaboo tales. Hence, it can be assumed that Egæus is suffering from the same type of monomania as Quixote did. He, like the narrator of “The Black Cat,” feels misunderstood. He believes that his intellect is above that of others, even us, his readers, and tells us that

It is more than probable that I am not understood; but I fear, indeed, that it is in no manner possible to convey to the mind of the merely general reader, an adequate idea of that nervous intensity of interest with which, in my case, the powers of meditation (not to speak technically) busied and buried themselves, in the contemplation of even the most ordinary objects of the universe. (211)

Nevertheless, in “Berenice,” the details of Berenice’s disease and the protagonist’s performance as a doctor are more significant than his own disease and self-diagnosis.
First, in the same fashion as some other Poe characters, Berenice is buried prematurely. “Berenice was—no more! She had been seized with epilepsy in the early morning” (647). Ultimately, Egæus is revealed to have violated her grave to spare her from her teeth: “who was it asked me would I not look upon the corpse? I had seen the lips of no one move, yet the question had been demanded, and the echo of the syllables still lingered in the room … is it my brain that reels—or was it indeed the finger of the enshrouded dead that stirred in the white cerement that bound it?” (334, column 2). Using the tools of dentistry property of the family physician. Berenice was later to be found by a maid as “a disfigured body enshrouded, yet still breathing, still palpitating, still alive!” (648). As Christopher Dibble proposes in his article “The Dead Ringer: Medicine, Poe, and the Fear of Premature Burial,” Berenice is a victim of cataplexy, although “it is suggested that she was prematurely buried, due to her affliction with a type of epilepsy causing her to fall into deep, catatonic states” (3). Coma, or “suspended animation” as Poe would call it in “The Facts in the Case of M. Valdemar,” (956) was the main cause of premature burials. Walter Whiter illustrates in A Dissertation on the Disorder of Death that “one third, or perhaps half of those, who die in their beds, are not actually dead, when they are buried” (362). According to Whiter, this was written by the Doctor Regent of the Faculty of Medicine in Paris in 1819.

Apparently, Egæus used “a little box […] property of the family physician,” inside of which “some instruments of dental surgery, intermingled with thirty-two small, white and ivory-looking substances” could be found, to commit his robbery (648). It can be assumed, then, that it was relatively easy for Poe and his contemporaries to have access to the tools of the trade. While it is still unknown why Egæus had such easy access
to the implements of dentistry, Poe does not lose his sense of humor and describes his hand as “indentated” with the impress of human nails. Poe is implying, so far, that diagnosis is quick and disposal of the cadaver equally quick, and that the characters in his stories have access to utensils and implements of specialties that are not their own. He is reinforcing, thus, the idea that medicine during his time is something one could practice at home, by oneself.

Egæus is not only monomaniac: in the tale there are also signs of cataplectic episodes in him as well as in Berenice. Cataplexy is a state in which the patient lies still, apparently dead and with no vital signs. This can be due to a muscular paralysis. It is said to be the cardinal symptom of narcolepsy, one being rare without the other, and the former affecting two thirds of those who suffer from the latter.

Cao and Guilleminaut explain that “attacks are brief, most lasting from a few seconds to a couple of minutes, and typically involve dropping of the jaw, neck weakness, and/or buckling of the knees.” In one of the four paragraphs later eliminated from the tale, Poe writes: “[B]ut I had no longer the power to move—my knees tottered beneath me—and I remained rooted to the spot … frozen with unutterable awe I slowly raised my eyes to the countenance of the corpse. There had been a band around the jaws, but, I know not how, it was broken asunder” (178).

1.2. PERMANENT UNCERTAINTY: PREMATURE BURIALS

When we think of premature burials in Poe’s stories, “The Fall of the House of Usher” (1839) inevitably comes to mind. In it, an unnamed narrator receives a letter from
his childhood friend Roderick Usher asking him to come alleviate him because he is
suffering from a mental disorder, as is his sister. When the narrator arrives, he notices
that there is a crack in the facade of the house. The friends spend time together reading,
commenting on art, and playing music.

The narrator tells us that “the MS. [manuscript] gave evidence of nervous
agitation. The writer spoke of acute bodily illness—of a mental disorder which oppressed
him—and of an earnest desire to see me, as his best, and indeed his only personal friend,
with a view of attempting, by the cheerfulness of my society, some alleviation of his
malady” (292). This is the first unequivocal signal that we are going to find one of Poe’s
scientific tales. Illness, malady, and mental disorder in the same sentence is a promising
sign. But perhaps the most notorious detail about the story is the relationship between the
siblings, incestuous to some. Poe writes: “I had learned, too, the very remarkable fact,
that the stem of the Usher race, all time-honoured as it was, had put forth, at no period,
any enduring branch; in other words, that the entire family lay in the direct line of
descent, and had always … so lain” (293). Later on, Roderick tells the narrator that
“[Madeline] and himself had been twins, and that sympathies of a scarcely intelligible
nature had always existed between them” (303). The fact that Roderick is telling this to
the narrator means that Roderick is aware of the “intelligible nature” of the relationships
with his twin. “A tenderly beloved sister—his sole companion for long years” (297), he
adds. This, in close comparison with the “direct line of descent,” makes us think that the
Ushers were attempting to continue that line. Not only is the indication of incest worth
commenting on here, but also, Madeline is in serious need of medical attention; yet the
doctor only appears in the tale as a shadow.
The physical aspect of Roderick is also worth mentioning. When the narrator first encounters him, he is lying on a sofa, gives us the impression of being terribly ill or tired to the point of exhaustion. The narrator almost doesn’t recognize the “wan being” of “cadaverousness of complexion” in front of him, whom he nevertheless described as having delicate, soft, and beautiful attributes. Interestingly, Roderick has been classified as a hypochondriac, a hereditary disease. He is excessively nervous, and his speech changes from a “tremulous indecision” to “energetic concision.” The disease, which he calls, “a family evil”, made him have the following sensations:

He suffered much from a morbid acuteness of the senses; the most insipid food was alone endurable; he could only wear garments of certain texture; the odours of all flowers were oppressive; his eyes were tortured by even a faint light; and there were but peculiar sounds, and these from stringed instruments, which did not inspire him with horror.

(299)

In the book *Characters on the Couch: Exploring Psychology through Literature and Film*, Dean A. Haycock postulates that this hypersensitivity Roderick suffers from is a sign of hyperesthesia. People suffering from this condition have a very acute tactile sensitivity, a feeling of burning in the skin (due to nerve damage), and peripheral neuropathy. They suffer from sensory overload in all five senses: touch, smell, sight, taste, and sound. “Roderick appears to meet many of the criteria for somatic symptom disorder, the current name for what used to be called hypochondria” (90), explains Haycock. Roderick’s symptoms have him secluded at home; they produce much anxiety in him, and are long-lasting. Haycock goes further to say that Roderick has a chronic anxious disposition and that he has had it since he was a student. He continues:

Madeline’s body is failing while Roderick’s mind is failing. The twins’ fate suggests that mind and body cannot be safely separated. In his typically gruesome
fashion, Poe may be rejecting the idea that the mind and the body are distinct entities, a philosophical view called dualism (91)

The theory that Roderick suffers from hyperesthesia is further supported by Daniel Albright, who writes that he “suffers from such acute hyperesthesia that he needs to live in almost complete silence. And yet he needs music, piano to pianissimo” (75). We know that the twins in the story share a mutual health problem, but what do we make of the narrator? It is interesting how he narrates the story in a very calm and convincing way, yet some of the things he tells don’t match with the tone of his narration. He sees Madeline in the corridor, but she was entombed at that moment. As Susan Amper specifically remarks:

One choice is to accept the narrator’s account at face value and to conclude that events, including Madeline’s supernatural escape from her tomb, occur essentially as the narrator describes them. A second option is to reject the narrator’s version of events, just as you might refuse to believe a man in real life who told us such a story. In this case, you would shift the attention to the narrator himself. Why is he telling such a preposterous story? Is he mad? Is he lying? (79)

Medicine had gone from being totally unknown and alien to the individual, the client, in the eighteenth century to being a success in the nineteenth century. This was in large part thanks to the pseudosciences, which helped the patient have a clearer understanding of his maladies, and made what was happening to him or her much easier to explain by the doctors and by the general public. The attractiveness of the pseudosciences was primarily based on how they connected medicine and patient without the intervention of a professional practitioner, with the economic and psychological costs, submission, and objectification of the self it implied. As Stoehr remarks:

Nineteenth-century America displayed a remarkable popular interest in science and technology, even among citizens who had little notion of the actual methods and aims of the laboratory. There simultaneously arose a whole class of what we
now call pseudosciences—mesmerism, phrenology, homoeopathy, and the like—which competed successfully with more respectable doctrines for public attention (9).

Stoehr’s commentary helps us understand that the pseudosciences implied filling what until then was a missing link between the practitioner and the patient. They provided the common man with knowledge about medicine and science. Further explaining this idea, in her book *Fevered Lives: Tuberculosis in American Culture since 1870*, Katherine Ott explains that the average physician at work practiced a “rich mixture” of common sense, folklore, popular knowledge, and medical doctrine (6). This lack of consistent medical knowledge on the part of the practitioners, and their inability to pass it to the clients, is precisely what made the pseudosciences a success in America during the nineteenth century. In fact, medical practice appealed to the other forms of knowledge that Ott identifies. Poe’s “Ligeia” presents an example of how medical practice turns out to be a pseudoscience.

### 1.3. MIXING LITERATURE AND SCIENCE TO CREATE A NEW FICTION

Although “Ligeia” is open to a variety of readings, as I will describe in Chapter III, in a medical context it is especially interesting due to the narrator’s self-cultivation in arts and medicine. He clinically examines and tries to cure his second wife, Rowena, who has obvious signs of consumption:

There was now a partial glow upon the forehead and upon the cheek and throat; a perceptible warmth pervaded the whole frame; there was even a slight pulsation at the heart. The lady *lived*; and with redoubled ardor I betook myself to the task of restoration. I chafed and bathed the temples and the hands, and used every exertion which experience, and no little medical reading, could suggest. But in vain. Suddenly, the color fled, the pulsation ceased, the lips resumed the expression of the dead, and, in an instant afterward, the whole body took upon
itself the icy chilliness, the livid hue, the intense rigidity, the sunken outline, and all the loathsome peculiarities of that which has been, for many days, a tenant of the tomb (664).

By creating this scenario, Poe shows the “task of restoration” of a sick body at home, which was a common practice in nineteenth-century America. Common sense was one of the tools of the trade back then because, as Poe points out, all that was needed was “experience and no little medical reading.” The excerpt indeed looks taken from the class notes of a student of medicine at that time. The medical discourse in “Ligeia” starts when Ligeia gets ill and does not cease until the very end of the story. As Sloane points out, Poe’s medical knowledge belongs clearly to the early stages of the nineteenth century. This is supported by the medical men who had contact with Poe during his lifetime, and also by the medical works he had access to. Rationalism was characteristic of early nineteenth-century medicine, and “accessible to the layman through its dependence on logic rather than the complex analysis of empirical data” (15).

The lack of information and the widespread use of the pseudosciences favored the belief that one could cure a patient with one’s own power, in a mesmerist style. The medical treatises of the nineteenth century were accessible to the public. It was not uncommon to use them as a veracious source, and to be influenced by them to write works of fiction. This practice made of medicine a fictionalized art. As Aspasia Stephanou describes, nineteenth-century medical treatises, medical knowledge, and literature not only speculated on the symptoms of consumption and counted on the apparition of countless consumptive women, where the “consumptive bodies” appeared with “diaphanous pale skin and rosy cheeks,” but also created a “metaphorical feminine body, a cultural construct controlled by the authority and gaze of the medical practitioner and writer” (40). In the words of Stephanou, “Poe went against the dominant discourses
of American transcendentalism and medical discourse on consumption that sought to elevate spirituality and idealize materiality, thus reducing life to mysticism” (50). Consumption, elevated spirituality, and the ephemeral presence of materiality, along with changes in shape and form, are Poe’s gift to transcendentalism until “Ligeia” reaches its end, where the medical discourse is more than evident and, in Poe’s fashion, the tale takes an unexpected turn.

1.4. HYPOTHESES BEFORE THE DISCOVERY OF EPIDEMIOLOGY

Edgar Allan Poe’s narrations are full of rich medical descriptions and discourses. “Ligeia” is an attempt to describe consumption to a reader unfamiliar with the symptoms. Nineteenth-century Americans did not know very well where these diseases came from, how to cure them, or how to stop them from spreading. One of the explanations or hypotheses for yellow fever, consumption, and malaria, for example, was the miasma theory. As the Dictionary of Public Health explains:

[Miasma theory was] a theory that had considerable currency during the 18th and 19th centuries as a way to explain the origin and propagation of some epidemic diseases, particularly cholera. The theory was that the cause was miasma, an ill-defined emanation from rotting organic matter. The theory derived empirical support from the observed distribution of malaria and yellow fever in marshy regions, until it was discovered that these are mosquito-borne diseases (174).

As Conevery B. Valenčius manifests in her book The Health of the Country, the first register of miasma was by a Missouri traveler called Henry Vest Bingham in 1818. He warned his brother that there was an “unhealthy fog,” miasma, which behaved like “smoke or mist, blown with air currents, wafted by winds, and rising from earth, vegetation or water” (115). Miasmas were normally associated with stagnant water that
infected the air and the diseased people. Miasmas were also thought to transmit cholera and yellow fever, or so went the prevailing theory until John Snow traced a source of cholera outbreak in 1854 and became the father of epidemiology, and until physician Robert Koch’s microorganism research.

Poe’s most evident contribution to miasmatic theories was his tale “The Masque of the Red Death,” wherein we encounter the rendition of a disease which Poe describes from the very beginning. The narrator describes how the Red Death, a pestilence that had been so fatal or hideous, had long devastated the country:

Blood was its Avatar and its seal – the redness and the horror of blood. There were sharp pains, and sudden dizziness, and then profuse bleeding at the pores, with dissolution. The scarlet stains upon the body and especially upon the face of the victim, were the pest ban which shut him out from the aid and from the sympathy of his fellow-men. And the whole seizure, progress and termination of the disease, were the incidents of half an hour. (269)

The disease ends up propagating and taking the life of Prince Prospero and his guests, all of them secluded in a Gothic abbey. Through the analogy of the Red Death, considered by many as consumption in itself, Poe shows his concern for a disease that spreads quickly amongst his guests, in a high-class party, reserved to a small portion of the population. One possibility is that this could be a disease easily associated with contagion by breathing, in the style of a miasmatic theory, but Hugo Santander advocates for a bigger theory in his article “Poe, the Masque of the Red Death, and Their Correspondence with Modern Society.” Santander contends, “One hundred and sixty years after its publication, “The Masque of the Red Death” resembles the fears of our civilized world. […] The first lines of Poe’s narration announce the deadly combination of poverty and AIDS in the so-called Third World” (1). Poe never defined the fictional disease Red Death too precisely, but Santander suggests that Poe might be representing
consumption, yellow fever, or black death, and that his description is also valid for Spanish influenza or even HIV, a disease which had its first case reported as early as 1981, which was described by its victims as “the worst flu ever,” and whose symptoms are fever, swollen glands, sore throat, rash, fatigue, headache, and muscular pain. Many people in Poe’s time suffered from diseases analogous to the Red Death.

In “A Tale of the Ragged Mountains,” allusions to physicians, medicine, doctors and medical practices of the time are used constantly. One of the characters, Dr. Templeton, is introduced to the readers as someone who “in consideration of a liberal annual allowance, had consented to devote his time and medical experience exclusively to the care of the invalid” (680). Medical inaccuracy was so common that it became an object of satire, and Poe provides an example of it: “This creature fastened itself upon a small artery in the right temple. Its close resemblance to the medicinal leech caused the mistake to be overlooked until too late” (686) and also “N. B. – The poisonous sangsue of Charlottesville may always be distinguished from the medicinal leech by its blackness, and especially by its writhing or vermicular motions, which very nearly resemble those of a snake” (686). Antiquated though they may seem, medicinal leeches are still used in the present day to help heal skin grafts and reattach body parts. Satirically still, Poe criticizes how detailed doctors were considered to be in their descriptions, which he characterizes as a sort of incomprehensible charlatanry. Stoehr goes on to describe the charlatanry of medical men:

As a medical man, Dr. [David] Reese was interested in exploding the claims of phrenologists who knew no anatomy, of mesmeric somnambulists – “medecins endormez” he called them – who pretended to detect and cure all manner of diseases, by looking into the inside of the stomach, bowels, liver, spleen, lungs, brain or any other organ of the body, and describing the disease as well as naming the remedy (26, my italics).
As these doctors took medicine by their own hand, the cause and effect of this “self-made science” was a mistreatment of medicine and science, and as a result failure in medical and scientific practices. This “looking into the inside,” or, in other words, vivisection, dissection, and anatomical study, at that time were “the special obsessions of the enlightenment, and dissection became, in Europe, even a sort of fashionable pastime” (151). Also, “a fascination with the minutia of the body and the mechanization of executions” (151) was also criticized by Poe in “Berenice.” Stoehr finds that “Egaeus’ interest in Berenice is exclusively anatomical, and finds expression in vivisection and grave robbing” (193). He further explains, “There is no science without a study of bodies, living or dead, and hence: no science without carrion. Science is anti-animism” (151). Indeed, a body is needed to study medicine in depth, and ideally the body has to be dead. Without a dead body to dissect there is no “looking on the inside,” no deciphering what mysteries lie hidden, what bones are inside this flesh. In the words of Sloane:

Dr. Rush examines the effects of alcohol on the systems extensively, a subject of interest to Poe. In another essay, he suggests the sensations might be translated from one area of the body to another and advocates the extraction of decayed teeth to alleviate seemingly unrelated ailments, an idea followed out in Poe’s “Berenice.” The doctor deals with consumption and related topics in a number of essays which have their counterparts in Poe’s short stories (13).

As is clear to many of Poe’s readers and analysts, incest is also present in “The Fall of the House of Usher” and “Eleonora,” and is translated through a lack of health of the characters due to inbreeding and direct lines of descent. Scott Peeples (1988) argues that the evidence of incest in the tale is “hard to deny” (85). In “Eleonora,” Poe writes, “She whom I loved in youth […] was the sole daughter of the only sister of my mother […] we had always dwelled together […] we lived all alone, knowing nothing of the world without the valley,—I, and my cousin, and her mother” (649-650). The narrator
also comments on how difficult it was for strangers to find the valley where the three of them lived in isolation, the Valley of the Many-Colored Grass, described as a seclusive place as the house of the Ushers. This seclusion makes us think on how in this story he is likely commenting on the difficulties or concerns of that time of, in Poe’s own words, direct lines of descent.

Poe was both a supporter and a critic of pseudosciences: he was aware that the pseudoscientists would anticipate later developments, as he was very interested in the progress of science and medicine. However, as we mentioned before, he also considered its representatives guilty of charlatanry. Thanks to John Elliotson, Chauncey Hare Townshend, and Thomas Capern, to name just a few, mesmerism, one of the many developing pseudosciences of the nineteenth century, reached a great audience and was contemplated as a developing science that obliterated the limits of human capability.

Mesmerism, which will be studied in depth in Chapter V, was a way of providing an explanation for all the advances technology was undergoing, without simply explaining them as magical. Nineteenth-century academics wanted to go beyond the myth. This is why the mesmerism present in the texts such as “Loss of Breath” works: matter is transmuted into spirit, bodies are reanimated with electricity, human beings travel beyond death, and the boundaries between life and death are bridged—people are buried alive, the dead are given the properties of the living and people are alive but look dead.

The tale “Loss of Breath: A Tale A La Blackwood” is one of Poe’s sharpest satires on the medicine, physicians, and doctors of his time. “Poe described ‘Loss of Breath’ as an intentional satire aimed at ‘the extravagancies of Blackwood,’” explains
Richard Benton (Carlson 116); in this sense, it is a tale that goes together with “A Predicament” (originally entitled “The Psyche Zenobia”) and “How to Write a Blackwood Article” (originally entitled “The Scythe of Time”), published in *American Museum* in 1838. Founded by William Blackwood in 1817, the British *Blackwood’s Magazine* continued publishing until 1980, having been always owned by members of the family. It published essays and terror fiction. According to the “Newspapers” page on the Georgian Index website, “In 1821 John Scott, the editor of the *London Magazine*, accused *Blackwood’s Magazine*, of libel. A representative of the journal, J. H. Christie, challenged Scott to a duel. Scott accepted and died as result of the wounds received during the fight.”

In the opinion of Biykem Bozkurt and Douglas L. Mann, the disease associated with shortness of breath is called dyspnea and can usually be identified because it “may be accompanied by discolored phlegm and/or fever” (2). It could be associated with abnormalities in organ systems in the body: it might stem from the lungs, with infections such as pneumonia, bronchitis, or even tuberculosis, or from the heart. Now that we know that there is a real medical background and research put into this story, we can focus on how Poe, once again, stages a self-diagnosis and an imitation with mockery and humor of the medical speech of a doctor. “There was some alleviation to the first overwhelming paroxysm of my sorrow” (396)—the pedantic speech, self-diagnosis of paroxysm, and excessive poetic language are eloquent enough to be irrefutably associated to one of the “charlatans.” The diagnosis continues as below:

I discovered that had I, at that interesting crisis, dropped my voice to a singularly deep guttural, I might still have continued to her the communication of my sentiments; this pitch of voice (the guttural) depending, I find, not upon the
current of the breath, but upon a certain spasmodic action of the muscles of the throat. (396)

Again, the narrator of the story, Mr. Lackobreath, is attempting to explain how his dyspnea develops and originates in the spasmodic action of the muscles of the throat. Furthermore, Poe portrays a young practicing physician, supported by several drunkards traveling in a bandwagon, who leaves the narrator for dead because he “applied a pocket mirror to [his] mouth” (398) and found him without breath. As Dibble emphasizes, lacking the modern technology we have today such as electroencephalograms and electrocardiograms, “nineteenth-century physicians had only their fingers to feel for a pulse and mirrors to check for condensed breath” (2). The narrator is hanged and left for dead a second time, and then buried alive. In his same surreal manner, Poe narrates how the narrator awakes, most likely in a waiting mortuary. “I knocked off […] the lid of my coffin, and stepped out. […] I felt my way among the numerous coffins ranged in order around. I lifted them down, one by one, and breaking open their lids, busied myself in speculations about the mortality within” (401, my italics). These “speculations” are a guaranteed proof of the mockery mentioned before: one of the patients in the waiting mortuary can understand if the corpses are dead or alive better than the working practitioners and physicians. Furthermore, that patient has been falsely left for dead himself.

Loss of breath, or dyspnea, has been frequently linked to anxiety. Poe was, with all certainty, aware of this, and that was the reason why he insisted on making very evident that he knew all the symptoms of the disease: “In displaying anxiety for the breath of which he was at present so willing to get rid […] it is precisely at that time when men are most anxious to throw off the burden of their own calamities” (403, my
Mr. Lackobreath starts to shake when he is being hanged: with this, we encounter an accurate description of an epileptic crisis. “Met Blab at the corner of the street—wouldn’t give me a chance for a word—couldn’t get in a syllable edgeways—attacked, consequently, with epilepsis” (402). Epilepsy, or rather epilepsia nervosa, was thought to be caused by worm infestation and parasites in the mid eighteenth century (Snyder 1).

As “Loss of Breath” continues, we read a physician’s speech with comic purposes in the following excerpt, where Poe portrays Mr. Windenough:

Preliminaries being at length arranged, my acquaintance delivered me the respiration; for which (having carefully examined it) I gave him afterwards a receipt. [...] I should have entered more minutely into the details of an occurrence by which [...] much new light might be thrown upon a highly interesting branch of physical philosophy. (403)

It is interesting to note the detail with which he relays the process of handing in a receipt, as if it were a commercial transaction or a cure of a practitioner. The truth is that a tale such as “Loss of Breath” was beautifully innovative in a world where biomedical engineering, in particular bio-augmentation and bio-modification (this last one applicable to the next story I will analyze, “The Man That Was Used Up”), was unthinkable, and was considered even ridiculous amongst his contemporaries. Poe foresaw that, in the future, artificial organs would replace and serve as substitutes for damaged ones. A decade ago, these artificial prostheses were used temporarily, as substitutes before the “real” donated organs arrived. Today, artificial organs serve as effectively as the ones we are born with. Technology is becoming a part of our bodies more and more each day, and more and more literally.

1.5. PROSTHESES, MECHANICAL PARTS, AND BIOMODIFICATIONS
Poe might have acquired influence for the bio-modifications present in his story "The Man That Was Used Up" from ancient Egypt. The first prosthetic known in history was a three-part prosthetic toe found in a tomb in Egypt, dating from 950-710 BC, and described by Dr. Jacqueline Louise Finch et al. as “the earliest tangible example of a prosthetic appliance” (190). The use of prosthetic limb technology during Poe’s lifetime had not advanced much, and its documentation is scarce. The only recorded information we have is how amputations were handled during the Civil War. As Lauren Curtright remarks, “[Benjamin Franklin] Palmer invented and patented a wooden prosthetic leg. This artificial limb was patented in 1846, within Edgar Allan Poe’s lifetime and would see use in the medical wards of soldiers in the Civil War” (20). Interestingly enough, during Poe’s lifetime the oldest known prosthetic device was the Capua Leg, found in the Roman burial site Santa Maria di Capua Vetere; the fact that he set his most successful story about prosthetics in Egypt and not in Rome is yet another of Poe’s splendid medical anticipations.

Six years before this artificial limb was patented, in 1839, Edgar Allan Poe published, in *Burton’s Gentleman’s Magazine*, “The Man That Was Used Up,” a humorous and inventive story that can be considered ahead of its time. The tale was sometimes published with the added subtitle of “A Tale of the Late Bugaboo and Kickapoo Campaign,” and one of its major motifs is how society loses power as technology advances: soon, machines will replace man. In the story, an unnamed narrator is looking for Brevet Brigadier John A. B. C. Smith; when he asks for a description of the man, people fail to provide one, and instead comment on how technology is advancing. When the narrator finally finds him (a bundle of body parts on the floor), General John A.
B. C. Smith, made in almost his entirety of mechanical parts, is pieced together in front of the narrator of the story while he informs the narrator of how he lost each of his body parts when he was captured and mutilated by the Native Americans (Poe was actually caricaturizing General Winfield Scott, injured at the Indian Removal Act of 1830). Shawn Rosenheim suggests in his book *The Cryptographic Imagination: Secret Writing from Edgar Poe to the Internet* that Poe might be criticizing technology and rising questions about the line that blurs man and machine. This is intriguing, but the story in itself is full of medical pathologies. Firstly, the narrator renders that he is “constitutionally nervous” and that he cannot help it. “The slightest appearance of mystery […] puts me at once into a pitiable state of agitation” (405). The narrator displays a clear case of anxiety and nervousness. This may amount to an acceptance that hysteria is a female disease, though this idea changed with time. The narrator explains in the same medical speech before the appearance of General John A. B. C. Smith that “I could not imagine a more graceful curve than that of the os femoris, and there was just that due gentle prominence in the rear of the fibula which goes to the conformation of a properly proportioned calf” (406). Edgar Allan Poe proceeds to write about how delighted General John A. B. C. Smith was with the pace at which mechanical inventions were advancing. He points to these mechanical inventions multiple times in the seven pages that comprise the story: “[W]e are a wonderful people, and live in a wonderful age […] there is really no end to the march of invention. […] the most useful—the most truly useful—mechanical contrivances are daily springing up like mushrooms, [he had] a deep sense of the valuable privileges we enjoy in living in this age of mechanical invention” (407). He adds, “[T]his is a wonderfully inventive age!” (408), and also, “[W]e live in a
wonderfully inventive age! [...] this is the age of invention, most certainly the age, one may say-the age par excellence” (409). The underlining of the age in which they were living is maintained in the phrases such as “[P]oor fellow!-but this is a wonderful age for invention” and “’pon my honor!-wonderfully inventive age!-pro-o-digies of valor!” (410). After all these comments on the path mechanical inventions are taking, the reader is tricked once more by Poe and is uncertain of whether the tale is simply highlighting the marvels and inventiveness of that era and comparing them to the modern age, or just takes the General’s continuous exclamations as purely ironical.

Poe might have thought that a perfect fit for the tale would be to insert an excerpt of Shakespeare’s *Othello*, where he praises mandragora. “…[M]andragora / Nor all the drowsy syrups of the world / Shall ever medicine thee to that sweet sleep / Which thou ow’dst yesterday!” (412). The original Shakespearean text reads, “… Not poppy, nor mandragora / Nor all the drowsy syrups of the world / Shall ever medicine thee to that sweet sleep / Which thou owedst yesterday.” Poe’s respectfulness to the original text is notable, as he was famous for making up most of the quotes that open his stories instead of citing them properly. But the Bard is different for him: mandragora was famous for being the anesthetic of the time until anesthesia, as known today, appeared in nineteenth-century America. The chemicals contained in the root of mandragora are hallucinogenic, hypnotic, and sedative, and some of mandragora’s side effects are asphyxiation and accidental poisoning, depending on the composition of the specific plant. With this ode to mandragora, Poe is probably leaving trace of the use of anesthesia at his time.

The narrator then proceeds to explain how General John A. B. C. Smith dressed himself with the prosthetics: “Pompey handed the bundle a very capital cork leg, already
dressed, which it screwed on in a trice.” Then he adds, “Pompey, I’ll thank you now for that arm […] Now, you dog, slip on my shoulders and bosom” (411). Critics specializing in racism in Poe’s works have remarked that this story is also mocking white supremacy, for an Indian has pieced the general down and he is pieced up by his black servant. He is useless by himself.

Dental and buccal parts and prostheses were also peculiar at the time, as Poe’s “The Man That Was Used Up” demonstrates: “[He] opened his [master’s] mouth with the knowing air of a horse-jockey, and adjusted therein a somewhat singular-looking machine, in a very dexterous manner, that I could not altogether comprehend” (412). With the advances of medicine today, it is hard to find someone who has not used orthodontic braces, especially at a young age. While it may seem to be the norm nowadays, during Poe’s times it was regarded as something uncommon, reserved for only a select few. When talking about descriptions and verbalization in Poe’s tales, Professor Félix Martín Gutiérrez resolves in his article “Edgar Allan Poe: Misery and Mystery in ‘The Man of the Crowd’” that

When some of [Poe’s] narrators ingeniously verbalize psychological self-deceptions, deriving, for example, pleasure from pain, beauty from ugliness or horror from general contemplation, or defiantly questioning the specter of their mental disease (“why will I say that I am mad?”, declares the narrator of “The Tell-Tale Heart”) we may wonder about the creative and ideological implications of those narrative acts of confession. (160)

This ingenuous verbalization of psychological self-deceptions, as Martín Gutiérrez suggests, can also transcend to physical perceptions and apprehensiveness of their early medical characteristics and pathologies. Poe’s narrators not only offer upright acts of confession, but leave their pathologies unsolved so that we, as readers, can identify what is wrong with them and understand the whole context of the narrative. A
clear example of this can be found in Poe’s tale “Bon-Bon.” When in conversation with Pierre Bon-Bon, the Devil remarks the following, “Indeed! - why it was I who told Aristotle that by sneezing, men expelled superfluous ideas through the proboscis” (530, my italics). A proboscis is the tubular mouthpart or the elongated nose used for feeding and sucking that is only found in animals. However, the Devil is referring to the proboscis as something through which men “expelled superfluous ideas” (530). This is very interesting in itself because in teratology, proboscis (also called cyclopia) is a pathology encountered in one of every 16,000 born animals. Its causes have been attributed to ingesting cyclopamine, a chemical found in certain plants. The first known case dates from 1665 in Britain. Throughout all his tales, Poe is concerned with medicine, putrefaction, conservation of cadavers, and especially physiognomy, explaining about the Devil that “his entire physiognomy was interestingly saturnine - even cadaverously pale” (528).

Knowing that Poe was so versed in science and that he had foresight in medicine changes the way we read his works today. Some of the descriptions in his stories, taken by his contemporary critics as pure satire, were in fact describing realities that only today can be conceived as true: a person who is “alive, with the qualifications of the dead,” as Poe writes in “Loss of Breath,” meant little back then, but our understanding of this status is different today because of our medical knowledge: it is a clear description of someone in a vegetative, or minimally conscious, state. Dibble draws attention to the extent to which Poe’s predictions have come true and how medicine has changed since Poe published his stories:

Poe would have plenty of fodder for modern medical horror today. ICU physicians deal with M. Valdemars on a daily basis, and Egaeus, the protagonist
from “Berenice,” might think tooth harvesting a minor horror compared to modern-day organ procurement. There are certainly similarities between the prose in “The Premature Burial” and accounts of people awakening from comas or states of unconsciousness. Modern life support and medically induced comas result in states that could be likened to suspended animation, trances, and cataplexy. We like to think that modern technology prevents mistakes that may have happened in the nineteenth century, but is likely that history will judge twenty-first-century medical beliefs not much differently than some judge nineteenth-century physicians today. (7)

Poe seems to have used his medical sources and knowledge very carefully, and employed large amounts of medical data throughout his best stories and some of his poems. He used medicine, medical theories and data analytically as a means of expressing and criticizing the society he lived in and the practices common then. Today, in an era when researchers have developed machines and prosthetics controlled by the electrical impulses of our brains, and where limbs can be replaced by machines and bio-modified almost to perfection, restoring damaged parts, it can be said that Edgar Allan Poe, apart from being a master of suspense and horror, was a writer capable of foreshadowing the main advances in medicine that occurred during the twentieth and twenty-first centuries.
CHAPTER II
MEDICINE OF THE MIND AND NARRATIVE STRUCTURE

“Any man could, if he were so inclined, be the sculptor of his own brain.”
-Santiago Ramon y Cajal

Edgar Allan Poe is considered a forerunner in detective fiction, but recent scholarship has found that he was also a prolific writer in medical fiction, more precisely in the field nowadays called neuroscience. He is not only a master author, but also one of the greatest and most versatile of the nineteenth century—mastering prose, poetry, literary criticism, and many other written resources—and, most importantly, one of the most innovative writers and dedicated to his readers. Dibble discloses that the medical field during Poe’s lifetime had a limited understanding of neurological conditions, such as epilepsy or coma that would explain apparent death. This problem was common even amongst appropriately trained physicians (2).

This chapter will analyze Poe’s use of internal medicine, or medicine related to the mind. It explains not only the inspiration Poe obtained from European works and media to successfully fictionalize medicine and incorporate it to his writings, but more importantly, it highlights Poe’s scientific anticipation: his medical and neuroscientific innovations, what they can teach us about nineteenth-century medicine and literature and their intersections, and what these can help us understand about Poe’s methods and thinking. Using four of his works as an example, we will explore Poe’s aspect of reader and writer of medical fiction, and forerunner of contemporary medical theories.
Poe followed the works of earlier European writers, such as Michele Tramezzino’s mid-sixteenth-century *Peregrinaggio di tre giovani figliuoli del re di Serendippo* and Voltaire’s *Zadig* (1747), as suggested by Leroy Lad Panek (24), which include sleuthing through medicine and medical diagnosis, but mastered what his predecessors could not. Medical innovation in Poe’s work has raised the curiosity of recent Poe scholarship: Kevin J. Hayes pointed out in *Notes & Queries* (2010) that Poe clearly read Thomas Raikes’ “The Bibliophilist,” a proto-procedural, in *Bentley’s Miscellany* Vol. 3 (1838), three years before his “Murders at the Rue Morgue” (1841). Here, a gentle and tolerable critique of Poe as the discoverer of detective stories is presented, however, in medico-scientific writing there are no forerunners at all. The most recent edited collection to date on this subject is *Mysterious Medicine: The Doctor-Scientist Tales of Hawthorne and Poe*, edited by L. Kerr Dunn in 2016. Kerr Dunn puts together a collection of stories that establish Hawthorne and Poe as precursors of the health humanities movement. Of the four works discussed in this chapter, only one coincides with Kerr Dunn’s ten suggested stories. This demonstrates that Poe’s scientific scope and his aspect as writer of medical fiction go beyond existing studies and analyses. It is understandable that the curious and cultivated Poe had a special attraction to medicine. Medicine is the cure for disease, and disease is a turning point in Poe’s work. Whenever disease is mentioned in any of his tales, we know the objects in it, the characters in it, will change somehow. As J. Alexandra McGhee explains in “Morbid Conditions: Poe and the Sublimity of Disease,” in Poe’s work, disease, insanity, and the macabre are all connected to death: “For Poe … the path to sublimity is an internal one, sparked by the domestic, unheimlich return of the repressed rather than a grandiose
experience of the external world. Poe’s sublimity leads not to a Kantian mastery over
nature, but through perversity and disease, into regions inconceivable until after death.”
(56) McGhee further explains the connections between death and sublimity Poe makes:

As death is the ultimate experience, bringing with it the ultimate truths, so the
entropic, diseased body comes nearest to attaining it. Its ability to contaminate
allows its own dissolution to spread, moving everything around it toward entropy,
and, finally, to Poe’s revised sublimity. (61)

Diseased, insane, macabre bodies are therefore Poe’s preferred objects of sublimity.

2.1. FILLING THE GAP: INVENTING A CURE

In addition to acknowledging Poe’s obsession with insanity, dying, and diseased
bodies, we must understand that medicine in the first half of the nineteenth century was
not homogeneous, clear, or something the general public trusted; and Poe, being one of
the most respected and feared critics of his time, of course had a strong opinion about it.
In Medical America in the Nineteenth Century: Readings from the Literature, F.
Campbell Stewart explains that “the courses of instruction at our colleges embrace … six
subjects, which are professed to be taught in two years, or rather in two periods of less
than four months each … any one, may acquire the knowledge considered as necessary
for a physician and obtain a license to practice, after about eight months’ college study!”
(66-67, his emphasis). Eight months’ college study must have been something feasible,
according to Poe, who achieved in nineteen months “the highest rank attainable by an
enlisted man: sergeant major” (Bazil 740) and was later appointed to West Point, the United States Military Academy.

Poe’s prose poem *Eureka* (1848) has put many Poe scholars to wondering about the scientific sources he used to make his stories such masterpieces. Most of his sources are unknown, but it is undoubtable that he was cultivated and well informed, and learned eagerly. The *United States Gazette* reviewed Poe’s talk on poetry at the William Wirt Institute of Philadelphia, as having been attended “by one of the largest and most fashionable audiences of the season; and … hundreds … were then unable to gain admission” (Thomas, 642). George Lippard said that “the Lecture was received with the most enthusiastic demonstrations of applause, and it was agreed by all, that it was second to none, if not superior to all lectures ever delivered before the Wirt Institute” (316). Although Poe’s talk was on American poetry, these testimonies leave proof of the kind of turnout he had to his talks and how satisfied his public was.

Poe knew how to please his audience and was able to keep up with the cultural fashion, and also with the needs of the cultivated attendees. There were many aspects of Poe’s work that attained public success and recognition during his lifetime, like the prizes obtained for “The Gold-Bug” and “The Raven.” He was curious and studied many fields during his life, as can be seen in the variety of foci analyzed in his work. As Kerr Dunn stated in the introduction to her book, “Poe [was] deeply engaged in investigating the most significant medical and scientific questions of the day” (3).

2.2. POE’S SOURCES OF MEDICAL INFORMATION
Poe as a reader, researcher, and investigator has raised much curiosity, and many scholars have worked hard in putting together a list of works Poe must have read, or events Poe must have lived, in order to attain familiarity with medical vocabulary, symptoms, causes, etc. For instance, when discussing what he interprets as Poe’s predated descriptions of porphyria, Rickman states that “Poe was familiar with the available clinical descriptions of King George III’s illness,” living in England at the time he died (864). As Poe was an avid newspaper reader, it makes sense that he was updated of all the new medical discoveries taking place in England during his time there, a time that also inspired him to write “William Wilson.” It is also known that Poe reviewed a book on abdominal disease (Kerr Dunn, 255). But on top of all the previous suggestions, the most plausible explanation and possible source for Poe’s knowledge and mastery of medicine may be the correspondence with his frenemy Thomas Holley Chivers, a Georgia physician and lyric poet. Chivers wrote his thesis on “Intermittent and Remittent Fevers” at the Medical Department of Transylvania University, attaining his degree in 1830, and practicing medicine at Sandy Cross. Poe’s and Chivers’ “mutual admiration … sustained a friendship and correspondence for more than eight years, and stimulated a liberal exchange of ideas and writing technics [sic]” (Sandler, 353). Chivers accused Poe of plagiarizing two of his poems for his “The Bells” and “The Raven” four years after his death. Poe accused Longfellow of imitating and plagiarizing him. Chivers also entered this war with Longfellow, insinuating that his colleagues were “[s]occotash-eating thieves of the land of Thanksgiving.” In a world where everybody was watching and reading so carefully for variations of topics in the literary fashion of the first half of the nineteenth century, finding new ways to create fiction was imperative.
A brief overview of Poe’s scientific anticipation and interest in neurology shows its presence in many of its works. For instance, in “The Premature Burial,” catalepsy is described. Before personally acknowledging being cataleptic, the narrator explains states of paralysis to the readers in such fashion:

She presented all the ordinary appearances of death. The face assumed the usual pinched and sunken outline. The lips were of the unusual marble pallor. The eyes were lusterless. There was no warmth. Pulsation had ceased. For three days the body was preserved unburied, during which it had acquired a stony rigidity. The funeral, in short, was hastened, on account of the rapid advance of what was supposed to be decomposition.

More examples can be found: “she died,--at least her condition so closely resembled death as to deceive every one who saw her. Vitality had not altogether departed, and she was aroused by the caresses of her lover from the lethargy which had been mistaken for death.” In other stories in “The Premature Burial,” the following description is accounted: “he fell into a more and more hopeless state of stupor, and, finally, it was thought that he died.” And lastly: “pronounced to be still living, although in an asphytic condition.” Concerning his own condition of catalepsia, he explains that

Sometimes the patient lies, for a day only, or even for a shorter period, in a species of exaggerated lethargy. He is senseless and externally motionless; but the pulsation of the heart is still faintly perceptible; some traces of warmth remain; a slight color lingers within the centre of the cheek; and, upon application of a mirror to the lips, we can detect a torpid, unequal, and vacillating action of the lungs. Then again the duration of the trance is for weeks—even for months; while the closest scrutiny, and the most rigorous medical tests, fail to establish any material distinction between the state of the sufferer and what we conceive of absolute death. Very usually he is saved from premature internment solely by the knowledge of his friends that he has been previously subject to catalepsy, by the consequent suspicion excited, and, above all, by the non-appearance of decay.
The Merriam-Webster dictionary defines “catalepsy” as “a trancelike state marked by loss of voluntary motion in which the limbs remain in whatever position they are placed.” In “The Pit and the Pendulum” we can find descriptions of what “sounds like an epileptic seizure [as] seen through the eyes of a literary genius”; “Berenice” is the only one of his stories where Poe explicitly mentions the term “epilepsy”; in “The Sphinx” “macropsia seen in temporal lobe seizures” can be found, and so too in “Eleonora”; and in *The Narrative of Arthur Gordon Pym of Nantucket* readers can find “several episodes of prolonged altered consciousness,” one of them considered “a generalized tonic-clonic seizure” (Bazil 742-743). We will comment on the presence of neurology in “William Wilson,” “The Business-Man,” “The Facts in the Case of M. Valdemar,” and *Marginalia*, following a chronological order.

2.3. HEAUTOSCOPY IN “WILLIAM WILSON”

The first neurological description found is of heautoscopy, in Poe’s “William Wilson” (1839). The title of the story is in itself quite revealing, William Wilson’s acronym being WW, thus “double you.” It contains a particularly vivid early depiction of the capacity or phenomenon of seeing oneself in a multimodal reduplicative hallucination of one’s own person—in other words, the somaesthetic illusion of seeing oneself out of one’s own body, physically separated. Poe narrates it like this in the story: “a scholar, who, although no relation, bore the same Christian and surname as myself … I have therefore designated myself as William Wilson” (421). He continues:
Perhaps it was this latter trait in Wilson’s conduct, conjoined with our identity of name, and the mere accident of our having entered the school upon the same day, which set afloat the notion that we were brothers … Wilson was not, in the most remote degree, connected to my family. But assuredly if we had been brothers we must have been twins; for, after leaving Dr. Bransby’s, I casually learned that my namesake was born on the nineteenth of January 1813—and this is a somewhat remarkable coincidence; for the day is precisely that of my own nativity … we were of the same height, and I perceived that we were even singularly alike in general contour of person and outline of feature (423-424).

This illusion, for William Wilson, culminates in the deadly fight between the protagonist and his second self: “I … plunged my sword, with brute ferocity, repeatedly through and through his bosom … A large mirror … now stood where none had been perceptible before; and, as I stepped up to it in extremity of terror, mine own image, but with features all pale and dabbled in blood, advanced to me with a feeble and tottering gait … how utterly thou hast murdered thyself” (436, his italics). Such aggressive interactions during heautoscopy were “discovered” by the neuropsychiatric literature only much later.

In the Journal of Neurology, Neurosurgery and Psychiatry, five scientists write about heautoscopy that the hallucination is a theme commonly found in fiction, and that when the double makes an appearance it usually indicates the death of the protagonist or hero, commonly by suicide. Brugger et al. write that, in literature, “the most dramatic illustration is Edgar Allan Poe’s William Wilson who, in an attempt to stab his double, kills himself” (839). This in itself is one of the longings Poe had during his life: to become a respected writer, and to be admired for his knowledge not only of literature and composition but also for this and beyond. In the aforementioned paper we are witness to how the circle closes: Poe used medicine to better help his effect and creations, and medicine uses Poe to better express itself.
It is true that doppelgängers have, in the gothic genre, the status of a harbinger of death. There are scientists who believe that this is a justified view, for the survival time after strokes, brain tumors, and other serious neurological diseases is often short. The motif of the double in literature, in creative fiction, and especially in the Gothic genre is due without a doubt to the phenomenological varieties of heautoscopy. In clinical case reports, there are both bad and benevolent doppelgängers. In cases of anosognosia (according to Merriam-Webster: “an inability or refusal to recognize a defect or disorder that is clinically evident”) the patient might pity the second self, and in other cases, the patient might opt for suicide in an attempt to “stop” the double, in both instances failing to recognize himself or herself as the other (Brugger et al. 140). Similarly, Kerr Dunn thinks Poe was “attuned to the potential for the abuses of power in medicine and science” (8). We have seen one of the examples of the extent Poe’s influence had in modern-day medicine, embodying representations of the health humanities.

2.4. FRONTAL LOBE SYNDROME IN “THE BUSINESS MAN”

“The Business Man,” published in 1850, also follows this idea of medical peculiarity. Many speculations have been made about which medical pathology the narrator has, without much in common. In this particular story the narrator is injured and happy about it: “A good-hearted old Irish nurse […] swinging me round two or knocked my head into a cocked hat against the bedpost. […] A bump arose at once on my sinciput, and turned out to be as pretty an organ of order as one shall see on a summer’s day” (413). Because of this bump he has a “positive appetite for system and regularity which
has made [him] the distinguished man of business that [he is]” (413). He has decided his fate and made his fortune. The exact same case can be found in “Bon-Bon.” Bon-Bon had difficulties with speech when drinking heavily while in conversation with the devil. Dibble discloses that the medical field had a limited understanding of neurological conditions such as epilepsy or coma that would explain apparent death. This problem was common even amongst appropriately trained physicians (2). The Business Man, however, “was barely three feet in height, and if his head was diminutively small, still it was impossible to behold the rotundity of his stomach without a sense of magnificence nearly bordering upon the sublime” (523). Poe had a very special interest in strange physiognomies and physical defects.

The Business Man, who is attractive because of the “delicate nature” of his constitution, is interesting to us because he shows clear signs of analgesia. He is very grateful to the Irish nurse who knocked his head with what he describes as “stern habits of methodical accuracy” (418). The Business Man, despite having his neck dislocated and his “right leg capitally splintered,” goes home “in high glee” to drink a bottle of champagne. The doctors can’t identify his disease. That is why he describes his relationship with the physician as follows: “It was nearly a gone case with me then – just touch-and-go for six weeks – the physicians giving me up and all that sort of thing” (418). The Business Man ends up not finding a cure for his disease, but making a living off of it. The Merriam-Webster Dictionary defines “analgesia” as “the loss of the ability to feel pain while conscious.” The term’s first known use was circa 1706. Eric Lewin Altschuler suggests, in his article “Prescient Description of Frontal Lobe Syndrome in an Edgar Allan Poe Tale,” that Poe’s tale “contains an accurate description of frontal
syndrome and features—only appreciated this century—of neuropsychiatric pathology resulting from paediatric injury” (902).

In this story, the frontal lobe syndrome is described eight years before Phineas Gage’s famous accident. The story also elaborates on the pediatric frontal lobe syndrome a century and a half before its description in the medical literature (Altschuler, “Prescient Description” 902; Altschuler and Augenstein 1404). The main character in the story, Peter Proffit, “had suffered a head trauma during childhood and subsequently developed a frontal dysexecutive syndrome with obsessive-compulsive components, reduced affection and antisocial behavior due to a probable lesion of the prefrontal cortex, a clinical picture similar to that of the almost iconic patient Phineas Gage” (Altschuler, “Prescient Description” 902; Altschuler and Augenstein 1404; Ghizoni-Teive, 467). Both the story and its earlier version, “Peter Pendulum, The Business Man,” keep the main character’s traits and characteristics, which are typical of a frontal lobe injury, and Poe does not change the fact that the syndrome started in childhood for Peter Profitt, crucial and severe information for the veracity of the story. But the question most scientific readers of Poe, and particularly Altschuler and Augenstein, ask is, “How could Poe have known about the frontal lobe syndrome, something that required the dramatic event of Gage’s injury for trained physicians and scientists to appreciate, years before Gage’s accident?” The most plausible answer is that he “link[ed] a frontal lobe injury to a change in behavior in someone he knew from childhood” (1404) by using his capabilities of observation and deduction, or, with the word Poe used to describe detective fiction before the term actually existed, by *ratiocination*. Readers of Poe’s Dupin mysteries will be familiar with this term. For those who are not, Thomas Donnelly keeps record of Poe’s
own words explaining what ratiocination meant for him: “The analyst … makes in silence a host of observations and inferences … the extent of the information obtained, lies not so much in the validity of the inference as in the quality of the observation. The necessary knowledge is that of what to observe” (169). This theory is also supported by Carl W. Bazil, who, in his review of some of Poe’s works, finds that Poe must have had “personal experience with a seizure disorder.” The phrase “those stern habits of methodical accuracy,” alludes to the words uttered by Peter Profitt when remembering the thump that the “delightful old nurse” gives him in the head at an early age and thus makes him who he is now. Is Poe also implying that sarcasm and humoristic incapability (characteristic of some of his most voracious critics) is also a trait of frontal lobe syndrome? The debate is open. Another of Poe’s characters, Pierre Bon-Bon from the story “Bon-Bon,” had difficulties with speech when drinking heavily while in conversation with the devil.

2.5. INFORMED CONSENT IN “THE FACTS IN THE CASE OF M. VALDEMAR”

Moving from humor to hoax, Poe’s story “The Facts in the Case of M. Valdemar” (1845) is, apart from being one of Poe’s most famous hoaxes, also a genuine contribution to the fields of medical ethics and offers heavy criticism on using human subjects in medical research. This story contains perhaps the earliest complete, formal description of informed consent:

It had been my design, originally, to wait for the physicians; but I was induced to proceed, first, by the urgent entreaties of M. Valdemar, and secondly, by my
conviction that I had not a moment to lose, as he was evidently sinking fast … it wanted about five minutes of eight when, taking the patient’s hand, I begged him to state, as distinctly as he could, to Mr. L----l, whether he (M. Valdemar,) was entirely willing that I should make the experiment of mesmerizing him in his then condition. He replied feebly, yet quite audibly, “Yes, I wish to be mesmerized”—adding immediately afterwards, “I fear you have deferred it too long” (124-125).

The story anticipates a procedure that has only recently been implemented in experiments with human subjects. Altschuler comments that Poe, having a great interest and acumen in science and medicine, “was also decades ahead of his time in appreciating the process of research” (“Informed Consent” 1504). The story was reprinted in England as Mesmerism “In Articulo Mortis” (1846), Poe received many letters from readers—from fans to doctors—inquiring whether his story was true or not and demanding more information about it. As Sloane explained in his thesis, “[T]he careful combination of medical theory and detail with a fictional presentation is almost their hallmark, a sharp departure from the generalization of sentimental literature” (56). Sloane also parsed “The Fall of the House of Usher” and found that several keywords matched those present in the 1835 book New Guide to Health, or, Botanic Family Physician.

The contribution Poe made to medicine and medical history has an enormous weight that has not been fully explored yet. For him, the sublime was connected to corporeal experiences of ecstasy and suffering—both inside and outside the practitioner’s room—and the mysteries these solitary experiences conveyed. Poe left a trace of these practices in a vast percentage of his total corpus of work. His texts, heavily loaded with criticism and analysis, have been so fruitful that no other author’s corpus of writing about science and medicine in fiction at that time has given so many hidden medical material to analyze (McGhee, 65; Pérez, 64-65).
Switching from facts to instincts, I will comment now on how Poe writes in “The Poetic Principle” that “an immortal instinct … is thus … a sense of the Beautiful. This is which administers to his delight in the manifold forms, and sounds, and odors, and sentiments amid which he exists” (1, column 2). He continues:

And just as the lily is repeated in the lake … so is the mere repetition of these forms, and sounds, and colors, and odors, and sentiments, a duplicate sense of delight … He who shall simply sing … with however vivid a truth of description, of the sights, and sounds, and odors, and colors, and sentiments, which greet him in common with all mankind—he, I say, has yet failed to prove his divine title (qtd. in Quinn 608).

In his *Marginalia Part I* (1844-1849), Poe gives the first known description of bidirectional synesthesia (Knoch et al. 372), making it another of his neuroscientific discoveries, bearing in mind that before the current millennium it was generally assumed by psychologists and neuroscientists that synesthetic associations ran only one way (a person seeing the number seven in blue would never perceive any “seven-ness” when looking up to the skies). Richard Cytowic explains that the “rare condition” of synesthesia is a mystery of cross-modal sensory experience that led him to understand the interrelationships between the neocortex and the limbic system. The limbic system acts as dominant organ, and thus allows experiencing the sense of taste as three-dimensional geometric shapes (1). We continue reading Poe’s description:

The orange ray of the spectrum and the buzz of the gnat (which never rises above the second A), affect me with nearly similar sensations. In hearing the gnat, I perceive the color. In perceiving the color, I seem to hear the gnat. Here the vibrations of the tympanum caused by wings of the fly, may, from within, induce abnormal vibrations of the retina, similar to those which the orange ray induces, normally, from without. By *similar*, I do not mean of equal rapidity — this would be folly; — but each millionth undulation, for example, of the retina, might accord with one of the tympanum; and I doubt whether this would not be sufficient for the effect. (“Marginalia [Part I]” 490)
This intent of Poe to explain synesthesia by underlining the connection between the tympanum and the retina, physiologically an entirely wrong thought in connection with synesthesia, makes evident that he did not just read a lot but also tried to develop his own theoretical insights. While some critics have undermined Poe’s synesthetic perceptions as being part of a (false and sensationalistic) “drug-induced perception,” (Campen, 105) it has been thoroughly demonstrated that he was aware of the scientific revolution of his time and intellectually up to date, and likely got his information from reading Newton, Darwin, or even Goethe. “Poe’s synesthesia shows similarities with the reports of synesthetes who perceive high-pitched sounds as light and low-pitched sounds as dark. Poe was well aware of his perceptual capacities … He even seems to have been aware [Knoch, 372] of the bidirectional nature of his synesthesia” (Campen, 106).

To conclude, we can say that Edgar Allan Poe was a student that excelled in his classes, a writer, a reviewer, an editor, and a lecturer. He worked for four journals during his lifetime. Readers like Robert H. Collyer, who published *Psychography, or the Embodiment of Thought; with Analysis of Phrenomagnetism, “Neurology,” and Mental Hallucination, Including Rules to Govern and Produce the Magnetic State* (1843), publicly praised Poe’s work. He was a fearless reader and critic and a creative genius who used his knowledge and life experience on his work. His use of medicine in his stories is consistent and astute, the medical data accurate and used “as a contextual medium of expression … toward the analytic manipulation of medical theories in the later stories dealing directly with pseudo-medical phenomena” (Sloane, 54). Goulet writes in her chapter “Neurosphilitics and Madmen” in the book series *Progress in Brain Research* that
Poe was the key literary player in the … neuroscientific turn of the 1840s America. In particular, Poe's stories featuring magnetism—*A Tale of the Ragged Mountains* (1844), *Mesmeric Revelation* (1844), *The Power of Words* (1845), and *The Facts in the Case of M. Valdemar* (1845)—connected the materiality of brain and body to the immateriality of spiritual realms (Mills, 2013; Murison, 2012). Poe himself had read scientific accounts of hypnotic states, and his fiction was well received by readers such as Robert H. Collyer, who founded the *Mesmeric Magazine* in 1842 and who published *Psychology, or The Embodiment of Thought; with Analysis of Phreno-magnetism, Neurology, and Mental, Including Rules to Govern and Produce the Magnetic State* in 1843 (Mills, 2013, p. 327). When the poet Charles Baudelaire (1821–1867) turned his attention in 1848 to presenting Poe's work to his French compatriots, the first story he translated was *Mesmeric Revelation*. The choice is telling, for Baudelaire was particularly attracted to Poe’s fusion of science with idealism. But it was through his well-known biographical essays on Poe, even more than in his translations, that Baudelaire was able to bequeath to French writers a particularly neurological vision of the American writer’s ill-fated genius (75).

Goulet further explains how his stories featuring magnetism connected the materiality of brain and body to the immateriality of spiritual realms.

We have explained Poe’s aspect of reader and writer of medical fiction and forerunner of contemporary medical theories. We have identified the cases where neurology is present in a selection of his works; we have seen how medicine influenced Poe and vice versa; and we have discarded the theories that link this knowledge to substance abuse rather than intellectual cultivation and careful study and incorporation of medicine to literature, building significantly on the theory that Poe “borrow[ed] adroitly from a number of medical sources” and “carefully integrat[ed] the medical implications of such data with the dramatic movement of his story” as Sloane (64) emphasizes. Félix Martín Gutiérrez posits that whatever the reason we might have to read Poe, it would require some hermeneutical caution that would allow to refract or resist terror, anguish, or the visual power. Deciphering codes or hieroglyphs, descending to the crypts of horror, avoiding the stare of a paranoid narrator or the analytical superiority of obsessive minds,
dodging some cruel hoax, all force the reader to stay defensive in order to keep an acceptable distance between aesthetic and psychological effects (“E. A. Poe” 60). The acknowledgement of Edgar Allan Poe’s use of medical detail will undoubtedly benefit his work and his scholarship and give him the recognition as a multidisciplinary writer that he so much needs and deserves.

5 My translation. Original quote: “Cualquiera que sea la razón para leer a Poe requiere cierta cautela hermenéutica que permita refractor o resistir el terror, la angustia, o el poder visual. Descifrar códigos o jeroglíficos, descender a las criptas del horror, esquivar la Mirada de algún narrador paranoico o la superioridad analítica de mentes obsesivas, o sortear algún timo cruel, obligan al lector a ponerse a la defensiva para mantener una distancia aceptable entre efectos estéticos y psíquicos.”
CHAPTER III

CHEMISTRY: TOWARDS THE POSTHUMAN SUBJECT

πάντα ῥεῖ: all things are in flux. It is inevitable that you are indebted to the past. You are fed and formed by it. The old forest is decomposed for the composition of the new forest. The old animals have given their bodies to the earth to furnish through chemistry the forming race, and every individual is only a momentary fixation of what was yesterday another’s, is to-day his and will belong to a third to-morrow. So it is in thought. Our knowledge is the amased thought and experience of innumerable minds: our language, our science, our religion, our opinions, our fancies we inherited. Our country, customs, laws, our ambitions, and our notions of fit and fair,—all these we never made, we found them ready-made; we but quote them. Goethe frankly said, “What would remain to me if this art of appropriation were derogatory to genius? Every one of my writings has been furnished to me by a thousand different persons, a thousand things: wise and foolish have brought me, without suspecting it, the offering of their thoughts, faculties and experience. My work is an aggregation of beings taken from the whole of Nature; it bears the name of Goethe.

-Ralph Waldo Emerson

D. H. Lawrence advised his readers that Poe’s stories were to be studied for their scientific progress, and not as mere artistic elements. He said, “Poe is rather a scientist than an artist” (70). James W. Gargano writes that D. H. Lawrence’s “subjective criticism [of ‘Ligeia’] is almost as sensational as Poe’s story” (337). I, too, would like to take “Ligeia” as a symbolic complex, as something much more profound than a Gothic love story. There are two important matters that I would like to clarify throughout this chapter: first, Edgar Allan Poe was a scientist; second, the high content of scientific elements present in his corpus of work, acknowledged by some but overlooked by many—especially in the realm of popular culture.
3.1. POE AS A POPULARIZER OF SCIENCE

Recent research has demonstrated that Poe was a remarkable popularizer of science and an instructor who used and fictionalized science—and who, furthermore, did with difficult science what Howard Nemerov did with difficult poetry: he brought it to the people. Bernard Lightman proposes, “as … professional scientists began to pursue specialized research highly, the need arose for non-professionals, who could convey the broader significance of many new discoveries to a rapidly growing … reading public” (187). Peter Swirski, in his introduction to *Between Literature and Science: Poe, Lem, and Explorations in Aesthetics, Cognitive Science, and Literary Knowledge*, says that “Poe’s science narratives are perhaps most important because he was the first American author who was able to distill the important information and ideas that were developed by professional scientists and publish them to a national and international audience in the form of imaginative poems, non-fiction essays and journalistic stories, fiction, and science fiction stories” (25). Poe worked hard during his life to obtain this recognition, though it did not arrive until many years after his death. It is important to note that during Poe’s period “there was a need for a new class of writers who could write about emerging scientific information in a way the new consumers of science information could understand, and in ways that was [sic] relevant to their daily experiences” as Murray Ellison explains. To successfully communicate these scientific practices to the broad audience, a writer must first have deep understanding of them, and then find a way to transmit this knowledge to the non-specialists. Unfortunately, Poe’s acknowledgement as a man of science came posthumously, and only recently. We see a growing trend in Poe
scholarship wanting to recognize the author as a serious man of science. Indeed, his scientific contribution did not end with *Eureka*—that work is, in fact, just the tip of the iceberg. Swirski writes that “among all XIX century writers Poe was the most interested in and most influenced by science and philosophy” (xi).

Laverty explains that “Poe makes good use of one idea of chemistry in his literary criticism — the thought that chemical combination sometimes results in a product different from either of the combining elements. To prove that axioms of mathematics are applicable only to certain fields, Poe says that in chemistry the aggregated parts are sometimes not equal to the Whole” (186-187). He further explains that Poe’s most important use of chemistry appears in “The Conversation of Eiros and Charmion” and “The Balloon Hoax” for artistic purposes. The main idea of this chapter is to add a third story to this list, and demonstrate that Poe also used chemistry for artistic purposes in “Ligeia.” I will use Poe’s self-categorized masterpiece “Ligeia” under the advice of James Schroeter, which explains in his article “A Misreading of Poe’s ‘Ligeia’” that “there are an infinite number of possible views of the story” (406) to demonstrate that Edgar Allan Poe knew more about science than has been broadly acknowledged, and that he used primary sources for the fictionalization of that science in hope of positively transmitting it to broader audiences.

“Ligeia” was published in September 1838 in the journal *The American Museum of Literature and the Arts*. It was the piece of work that Poe was most proud of, having explored and tested the main idea of the story in some of his previously published stories. Poe played with the idea of death and un-death in several of his stories; at least three of them (“Morella,” “Ligeia” and “Berenice”) are linked by their narratological elements,
and the three of them share what Noelia Hernando calls “one of the main dichotomies in dramatic geopathology: the definition of home as both shelter and prison” (126), but Ligeia seems to be the public’s favorite, having been described as “the most important of a group of stories” (363). Also, in J. R. Hammond’s words, “it can be seen that ‘Morella’ is in a sense a preliminary sketch for ‘Ligeia’” (67).

The tale is, overall, a very ambiguous one. Francisco Javier Sánchez-Verdejo asserts in his article “El Vampiro Femenino de Poe: Metáfora Maldita de la Femme Fatale y Ejemplificación Edificante de la Mujer sin Sombra” that the lovers in the story live because one takes energy from the other and vice versa, a state that will last until one or both changes to their new existential situation. However, Sánchez-Verdejo clarifies, this separation will not be sudden but will be prolonged by a state of progressive and gradual decline, a state of trance (94). This idea is in perfect communion with the illustration of Ligeia drawn by the German Wilfried “Sätty” Podriech in 1976 for The Illustrated Edgar Allan Poe, the only illustration published so far in which a clear process of corporeal transmutation is shown. Sätty saw in “Ligeia” a clear exchange of energies, expressed in his own words in his introduction:

There is a time in the span of civilizations when creative energy and the human spirit are wholly, if briefly, focused. When this occurs culture in all its manifestations reaches its zenith. The moment passes; civilizations decline, only to be replaced by others. This process of life appears cyclic. Communities become tribes, turn into nations, and become empires, which, like suns, radiate their energy to the limits of their power, then decay and finally vanish, leaving behind only traces. This cycle, which may continue until our sun—or our planet—fails us, is the principal concern of my book. (5)

Particularly interesting is his idea of focusing on the creative energy and the human spirit reaching a zenith. The cyclic process of life where something whole declines, and is born again to become whole: as explained by Sätty, links directly with
one of the most notable techniques of Poe—the diffuse line he drew between life and death—confusing one and the other, causing them to mingle and not to simply be two separate states. For Poe, death was what gave value to life, and perhaps the refusal of Ligeia to die completely reflects a longing for immortality. There have been many debates and some highly interesting academic conversations around topics such as Ligeia dying or not dying, Ligeia as a vampire and the narrator as a murderer of Rowena. Although some critics defend that Ligeia actually dies in the story (like Basler in his 1944 article), my thesis is that Ligeia’s death is never felt by the narrator or the readers: the traumatic moment is described as a mere “she died” without any kind of detail, and so Ligeia never really dies—what we, as readers, feel is Poe’s literary use of science by a metaphorization and fictionalization of what is known as alchemical transmutation, or rather, the struggle for life of Ligeia and Rowena mixing, fusing, transmuting: turning into more perfected alchemical elements. Seven letters are not enough to describe the pain that the narrator must have felt in the exact moment when his object of desire left his side forever. Seven letters are not something Poe would dedicate to, in his own words, “the most poetical topic in the world.” Therefore, one of my theories here is that Ligeia is a symbol for gold throughout the entire story, and that when she, or it, abandons the narrator, he is forced to practice alchemy to bring his gold, or his beloved Ligeia, back to him.

At the time of the publication of “Ligeia” (1838), science was undergoing immense changes and discoveries were not limited to experiments with light and electricity. These investigations that were carried out in the physical sciences turned to chemistry, which at that time was received by Poe and his contemporaries as a new,
spectacular science, which had an impact on their fascination and further commentary. In my view, the narrator of “Ligeia” is not an ordinary character or a man of ordinary powers, as some critics have determined (like Clayton Hamilton in 1918), or a madman suffering from hallucinations (as interpreted by Roy P. Basler in 1944). It is interesting to note how, in Basler’s article, he writes that “just then Ligeia dies” (366) but shortly after he turns this into “the earthly body of Ligeia dies” (367). I agree with that differentiation and believe it must be made.

D. H. Lawrence, in the aforementioned chapter of his _Studies in Classic American Literature_, describes the relationship between the characters in the story in such a way that on a first reading the readers could think he might be talking about alchemical elements rather than people or characters:

He is a lodestone; the woman is the soft metal. Each draws the other mechanically. Such attraction, increasing and intensifying in conjunction, does not set up a cycle of rest and creation. The one life draws the other life with a terrible pressure. Each presses on the other intolerably till one is bound to disappear: one or both. The story of this process of magnetic, self-less pressure of love is told in the story of “Ligeia” (93).

In addition to Lawrence’s description, I would say that perhaps it is true that “Ligeia” is a vast metaphor of chemistry (or, rather, alchemy), but Ligeia cannot be just represent any metal; she has to be the purest metal known to man: gold. In a similar line of thought, John McKee, in his “Poe’s Use of Live Burial in Three Stories,” makes a point, which I would like to take as my point of departure. He states that “the Lady Rowena becomes the narrator’s wife for the single purpose of dying and becoming the vehicle for the reincarnation of Ligeia” (2) and adds that “he could have married her [Rowena] only that she might die and become the resurrection vehicle for Ligeia. That this is madness is, of course, indisputable, but if we accept the story at all, we must
accept it in the framework and logic of that madness” (2-3) I agree with McKee that Rowena is a vessel, a vehicle for Ligeia to transmute to and from. She is the lead that will be turned to gold. I also agree that we have to accept the story in the framework and logic of that madness, but, as in most of Poe’s stories, that “madness” is perhaps something bigger: a gap in a scientific discourse.

My vision defends, as Basler’s does too, that a process of metempsychosis actually occurs, but not exactly at the “death” of Ligeia; that is, the metempsychosis is rather a transmutation of souls and bodies. Joseph Gottlieb Kölreuter (quoted in Pablo Lorenzano), a remarkable scientific thinker of the pre-Darwinist era, made the comparison that “transmutation’ of one species into another, [can be an] analogy with the alchemist theory of the ‘transmutation’ of metals” (3). Kölreuter would later inspire Mendel on his theories of genetics. The word “transmutation” had also been used to define evolutionary ideas, as well as to describe the transformation of ordinary materials into gold. So, when James Gargano writes, “[E]ven when the narrator resurrects Ligeia from the grave he confronts the miracle he has performed with dismay and wonder. In the actualizing presence of his new creation, he does not know what he is creating; until almost the last moment, when he acknowledges Ligeia’s identity, he forces himself into believing that Rowena and not her predecessor is returning to life” (341) in “Poe’s Ligeia: Dream and Destruction,” he is describing the creation of a miracle, which the narrator does not exactly control. The narrator has transmuted, or thinks he has transmuted, lead into gold.

I read “Ligeia” as a vast metaphor of alchemy and science. I do believe, like Schroeter, that Poe is not deliberately writing about erotomania, megalomania, or the
phrenetic tension of hallucination; in fact, I do not see any of these in the story. The
memory of the narrator, “which remains sharp and vivid concerning the ‘internals,’
nebulous and cloudy concerning the ‘externals,’” is but an aspect of a communication
with the external world. He knows what he has done and how he has done it, but fails
when sharing it with an external listener. This is why he does not remember some of the
key aspects of his story with Ligeia, but does remember some others—apart, of course,
from lack of memory or detail being a narratological motif very present in Poe.

3.2. THE GOLD RUSH, AND “VON KEMPELEN AND HIS DISCOVERY”

“Poe makes good use of one idea of chemistry in his literary criticism,” says
Laverty, “the thought that chemical combination sometimes results in a product different
from either of the combining elements” (186). Not only in his literary criticism is his
mastery present, but also his attempts to explain the scientific phenomena of his time are
present throughout his whole work. In the story “Von Kempelen and His Discovery”
(1849), Poe tells of a man who in the middle of the California Gold Rush fever is able to
turn lead into gold. Although “Von Kempelen and His Discovery” is another of Poe’s
most popular scientific humoristic tales, that when “they searched his person … [they
found] a paper parcel … containing what was afterwards ascertained to be a mixture of
antimony and some unknown substance, in nearly, but not quite, equal proportions”
(1362). In the story, the officers find a trunk full of brass, which the following day turns
into the most virgin, absolutely pure gold. Towards the end of the story we learn that all
that can be said is that “pure gold can be made at will, and very readily from lead, in
connection with certain other substances, in kind and in proportions, unknown” (1364, Poe’s italics).

After a careful reading of the tale reveals that although eleven years and many experiences in the author’s life separate both stories, “Von Kempelen and His Discovery” sheds some light on one of the greatest mysteries of “Ligeia.” Firstly, I find a great similarity between the garret where Von Kempelen was caught and the bridal chamber of Rowena and the narrator in “Ligeia”: the immense window, the pentagonal shape, the gigantic sarcophagi of black granite, the fires inside the room, and the presence of “the richest cloth of gold” (322) and golden objects everywhere inside of the room—but not outside, to our knowledge—make us think of the bridal chamber as more like a dungeon, or, rather, the room of operations of an alchemist. In fact, Laverty’s opinion is that Poe, after reading more and more works on chemistry and reviewing them, thought that chemistry would be a good fit for his stories: “Poe took the ancient alchemist’s dream and turned it into a modern feature story” (189). Furthermore, in regard to the money, the narrator explains that he “had no lack of what the world calls wealth” (320) because “Ligeia had brought me far more, very far more than ordinarily falls to the lot of mortals” (320). Ligeia, the partner of his studies, the woman with whom he was “buried in studies of a nature more than all else adapted to deaden impressions of the outward world” (310), the one who taught him near the Rhine and through her “immense learning” the secrets of those “moral, physical and mathematical science[s]” (315), or what I venture to call alchemy. All these things he attained when he had Ligeia, or the powers that came with her, by his side. Can Ligeia be a vast metaphor for gold? Is it right, or possible, to personalize the precious metal? Is the narrator telling us, then, that Ligeia is a
representation of his economy, that when he had her he was a happy man, but when gold/Ligeia left his side he was “a child groping benighted”? (316) Is this why, the opposite of her being glittering and alive, the “radiant lustre of her eyes … golden … grew duller than Saturnian lead,” in opposition to the way that Von Kempelen turns lead into gold? Is this why Rowena’s family, “through thirst of gold” (321) and only for that reason (the haughty family as he describes), gives her to the narrator, in an attempt, perhaps, that with the help of alchemy he will turn the dull lead, Rowena, into the shining golden Ligeia again? One reading is that the narrator in “Ligeia” is an alchemist and that the multiple deaths of Rowena are a sort of “cohobation,” (according to the Merriam-Webster dictionary, “repeated distillation usually by subjecting a distillate to a new act of distillation”) wherein Rowena, a metal, most likely lead, is being distilled from herself, abandoning her own vessel of existence whilst slowly transforming into Ligeia but without abandoning her own body—rather, transmuting into Ligeia. John Tresch, one of the most notorious researchers and defenders of Poe as a scientist, in his essay “Extra! Extra! Poe Invents Science Fiction!” determines that Poe’s stories, and also the science that was being experimented with at the time, were focused on all kinds of creations and inventions to explore space, time, and matter: “[A]long with time and space, matter was undergoing major changes in this period. The old assumptions of Newtonian physics of an orderly clockwork universe of points and forces were giving way in favor of a search for new devices to investigate the movement of fluids—ether, light, electricity and magnetism, heat—from one place to another” (119).

This new science was attractive for both Ligeia and the narrator: both engaged in it and were given together to “studies but little sought—but less known” (316) and
together, too, enjoyed “many mysteries of the transcendentalism in which we were immersed” (316). “Ligeia” is a very elaborate and thorough narrative in every way, and difficult to understand at first reading, perhaps because its original intention was, in Richard Wilbur’s words, a “relatively clear introduction to Poe’s use of alchemical symbolism” (168). Wilbur puts this concept into words, stating that “Ligeia’s presence is golden, her absence is leaden, and what happens to Rowena is a transmutation … Lady Ligeia sponsors the transmutation of earthly experience into spiritual knowledge” (168).

3.3. POSSIBLE SOURCES FOR “LIGEIA”: BASILIUS VALENTINUS

There are only a few specific sources that discuss the scientific parts of “Ligeia.” Whether Poe borrowed ideas, practices, or procedures from actual scientific books is still unknown, and although his knowledge of alchemists such as Basilius Valentinus or Paracelsus is likely, it has yet to be proven. My theory is that Poe did know Valentinus and was evidently influenced by him. Basilius Valentinus, allegedly a fifteenth-century German alchemist, wrote a book called Of Natural & Supernatural Things Also of the First Tincture, Root, and Spirit of Metals and Minerals, How the Same Are Conceived, Generated, Brought Forth, Changed, and Augmented. It is very likely that the first English translation of this book of such a captivating title ended up in Poe’s hands. The closest I have come to linking Poe and Valentinus, apart from my literary interpretations, is through an article written by J. Popham called “The Middle Ages” for Graham’s Magazine, published several years after Poe died. In it, Popham writes that “the scientific labors of the Middle Ages have been, perhaps, more overlooked than any other … in our
ridicule of the astrologer and alchemist of these times, we are either ignorant or forgetful of the assistance he rendered to modern science” (207)—which is precisely the idea Poe defended not only through his works, but also through his correspondence. Valentinus many times “abused and ridiculed the physicians of his time” (594), influenced Paracelsus and Newton greatly, helped several chemists to actually volatilize gold, and, like Poe, liked hoaxes and cryptography. In his book The Secrets of Alchemy, Lawrence M. Principe speaks of how Basilius Valentinus’s “Twelve Keys” were accompanied by twelve symbolical illustrations that were interpreted physicochemically in the twenty-first century (161).

In the chapter “Of the Medicine or Tincture of Antimony, as well to preserve Mans Body in Health, and to divert all desperate and incurable Diseases, as also to cure the Leprosie of Metals, to purify and to transmute them into the best Gold” Valentinus explains, “Take [ingredients] and mix them well together; at first distil very slowly, for the Spirits ascend with greater violence than those of any other common Aqua fortis; beware of its Spirits; for their Fumes are very subtile and hurtful in their penetration” (160). Readers cannot help but be reminded of the episode when Rowena, under the “phantasmagoric influences” (323) of the room, after a “second more violent disorder” (324) and apparently dead, starts moving again in her deathbed. The episode that some critics have interpreted as Rowena “being possessed” by Ligeia has a very interesting analogy with the work of Valentinus. Poe writes:

[Rowena] once again stirred … arousing from a dissolution more appalling in its utter hopelessness than any. The corpse … stirred … and now more vigorously than before … each terrific relapse was only into a sterner and apparently more irredeemable death … each agony wore the aspect of a struggle with some invisible foe … each struggle was succeeded by I know not what of wild change in the personal appearance of the corpse. (329, my italics)
Principe explains that in Valentinus’s second key the chrysopoetic symbolism interprets that when two elements are mixed and heated, a “vigorous reaction (a ‘fight’) does ensue” (148) and is capable of dissolving gold. Also, and in a similar way to that in which we see the analogy of the “spirits” penetrating the softer metals and Ligeia’s spirit penetrating the body of Rowena, Valentinus explains of antimony that “so soon as it feels the force of the fire, it flies away in a Vapour with all its parts, because it is volatile” (162). Additionally, in “Berenice,” Poe writes that “the spirit of change swept, over her, pervading her mind, her habits, and her character, and, in a manner the most subtle and terrible, disturbing even the identity of her person! Alas! The destroyer came and went” (159). Poe is giving entity to death here, considering it a spirit that enters a body. Since “Rowena” is thematically similar to “Ligeia,” how spirits are treated in both tales is very interesting for the understanding of each of them. Poe said of Ligeia that “upon the golden carpet [there lay] a shadow … fancied for the shadow of a shade” (325). James Schroeter is right in saying, in “A Misreading of Poe’s ‘Ligeia,’” that the narrator never claims that the “shadow” which he observes is Ligeia, and I agree. It resembles a very volatile vapor, which will soon turn into the real Ligeia.

Valentinus’s third key is explained by Principe as the volatilization of gold chloride: the presence of that gas prevents it from decomposing and it sublimes as “beautiful ruby-red crystals” (152). Poe wrote that “a decanter of light wine … had been ordered by her physicians” (325) and Valentinus himself explained in his treaty that “the Spirit of wine … transmutes all the Diseases of the imperfect Metals into the perfection of Gold; and the power of the spiritual Wine extends very far being rightly used” (169-170). We see where this is going: the eventual reappearance of Ligeia, or gold, sometime
soon. With Valentinus’s “ruby-red crystals” in mind we read how the narrator in “Ligeia” narrates the third and final death of his second wife: “As Rowena was in the act of raising the wine to her lips I saw … three or four large drops of a brilliant and ruby colored fluid” (325). The narrator explains that he saw this “as if from some invisible spring in the atmosphere of the room” (325)—also to say, as if they volatilized before him. He continues: “Immediately subsequent to the fall of the ruby drops, a rapid change for the worse took place in the disorder of my wife” (326) such that he gives his wife up for dead at the fourth day. Valentinus writes that with the Celestial Medicine he can “cure all the diseases and distempers of mans body” (170) and suggests it be used in this way: “Give three drops in a Cup of Wine fasting to the Party, just at the time when he feels the beginning of his misery, anguish and pain to come upon him, the second and third, use it in like manner; it allaiies all pain the first day how great foëver it be” (171).

This would perhaps explain the multiple deaths of Rowena with a more scientific approach. Additionally, in “Rationale of Verse” he explains that “in chemistry, the best way of separating two bodies is to add a third; in speculation, fact often agrees with fact and argument with argument, until an additional well-meaning fact or argument sets everything by the ears” (30). Poe explicitly mentions the bodies as transmitters through which qualities flow in and out: “Ligeia’s beauty passed into my spirit” (314, emphasis added) and “chronic disease which had … taken too sure hold upon her constitution to be eradicated by human means” (324, emphasis added). Passing, possessing, and the ability or inability to eradicate substance from someone gives us the idea that souls, energy, and qualities of the body itself are not one element but various elements combined. Furthermore, according to the theories of Edmund Burke in his Philosophical Inquiry
into the Origins of Our Ideas of the Sublime and Beautiful mentioned by Sarah Helen Whitman in “Edgar Poe and His Critics,” the sublime could be defined as something terrible and painful, but treated from a sufficient distance to make it pleasurable. According to Burke, the sublime is something broad, robust, dark, and gloomy, which makes us think of Ligeia, both aesthetically and psychologically. Sarah Helen Whitman’s article helps us understand the story in the dimension dealt with in this chapter. Although unreliable, the core of her concept can be summarized with the following quote:

Observe in [“Ligeia”] the prevailing and dominant thoughts of [Poe’s] inner life—ideas of “fate and metaphysical aid”—of psychic and spiritual agencies, energies and potencies. See in them intimations of mysterious phenomena which, at the time when these fantasies were indited, were regarded as fables and dreams, but which have since (in their phenomenal aspect simply) been recognized as matters of popular experience and scientific research. (45–46).

Whitman’s words on Edgar Allan Poe’s real science and scientific inquisitiveness can be contrasted with the correspondence P. P. Cooke and Poe had in 1839. In one of his letters, Cooke told Poe that “Ligeia” could have been improved if Rowena had retained her body “as a shell or case” for Ligeia, and Poe replied that “the gradual perception of the fact that Ligeia lives again in the person of Rowena is a far loftier and more thrilling idea than the one I have embodied. It offers in my opinion, the widest possible scope to the imagination—it might be rendered even sublime” (his italics). Poe’s words are eloquent enough, and in his humoresque tone he lets Cooke know that he has not really understood the story before abruptly changing to “Morella.” Additionally, Poe treats the subject of sublimity and beauty in his book review of “American Prose Writers. No. 2. N. P. Willis”:

This pure Imagination chooses, from either beauty or deformity, only the most combinable things hitherto uncombined; — the compound as a general rule, partaking (in character) of sublimity or beauty, in the ratio of the respective sublimity or beauty of the things combined — which are themselves still to be
considered as atomic — that is to say, as previous combinations. But, as often analogously happens in physical chemistry, so not unfrequently does it occur in this chemistry of the intellect, that the admixture of two elements will result in a something that shall have nothing of the quality of one of them — or even nothing of the qualities of either. (38-39)

Laverty explains that Poe repeated this same idea one year later in “The Literati of New York City—Part I.” Sánchez-Verdejo affirms that when the readers finish reading the story of “Ligeia” they do not know for sure if Ligeia is a hallucination, a subjective deformation of the narrator, a visual product of a deep state of delirium brought on by the loss of the beloved, or a mirage that projects the idyllic image of Ligeia (94); in addition, Basler argues that the narrator murders Rowena “in his maniacal attempt to restore Ligeia to life” (59); other critics decipher the Glanvill quotation at the beginning of the story about man’s free will, individuality, and vigor; and others affirm that Ligeia “symbolizes the narrator’s dream and the cause of his destruction” (Gargano 338). I believe that Poe mixed perfectly literature and science in my, and his, favorite story: that Rowena was a part of something bigger, an element in the formula, that with persistence and knowledge and patience you could make possible the impossible, take a piece of that “black and magically fecund earth that Adam took with him from paradise” (Jung 327), and turn all that glitters into his lost love.

Another possible explanation for Rowena’s multiple deaths is chrysopoeia, as described in the book Chrysopoeia of Cleopatra, where the Egyptian Cleopatra the Alchemist allegedly produces a Philosopher’s Stone. This could explain much of the Egyptian imagery of the story, which leads us to our next tale in this analysis: “Some Words with a Mummy.” Most critics have studied this tale for its contents in physics, but the presence of chemistry in it is also notable and has not been thoroughly mentioned or
acknowledged. In the chapter “Physics and Chemistry” of Carroll Dee Laverty’s dissertation, it is mentioned that Poe dealt with “the foulness of air, the phosphorescence of the sea, and the preservative effect of bichlo-ride [sic] of mercury” in his writings, but that chemistry played a minor part in his work (179). I argue against this claim, and defend that chemistry pays a role as important as physics and biology, but is not as obvious due to contemporary redefinitions of that term. The most obvious presence of chemistry in Poe’s work is in “Ligeia,” where he had obvious influence from Goethe. Poe has been compared to Goethe previously, in the 1932 article “Poe’s Politian and Goethe’s Mignon” by Karl J. Arndt.

3.4. EMBALMING BODIES IN “SOME WORDS WITH A MUMMY”

“Some Words with a Mummy” shows Poe’s interest in Egypt, and leaves an obvious sign that he was interested in the technological advances Egyptians had mastered throughout many years. Some critics, such as Antonio Ballesteros, have argued that Poe might have been inspired by the Egyptomania that followed the discovery and translation of the Rosetta Stone, when Egypt became a big deal in the United States and everybody was celebrating it. This was the perfect topic for Poe to satirize and mock politically, but as with everything Poe satirized and mocked, he had a special interest in it (Ballesteros 59). Poe makes several allusions to Egypt and Egyptology throughout his works, and though they treat many topics, the one that interested him the most was conservation of the body, embalming, through chemical process. It makes sense that a person so interested in death and the afterlife, and in preserving bodies, was very interested in an
ancient technique that preserved a dead body for millennia. Poe was supposedly taken to see a mummy exhibit in the senate Chamber of the Capitol in Norfolk, Virginia, sometime between the years 1823 and 1824. After that, Poe wrote several times about Egypt in his tales and “incorporated codes and cryptograms in most of his work” (Montgomery 2012). Susan D. Cowie and Tom Johnson writes “in 1832, the New York Evening Mirror published an anonymous piece about galvanic resuscitation entitled Letter from a Revived Mummy, which is thought to have inspired Edgar Allan Poe” (141). Poe describes the mummy as being “in excellent preservation,” with no perceptible odor, the teeth and hair intact, and the skin “hard, smooth and glossy.” Apparently the mummy looks asleep, but with the eyes—which the narrator thinks have been substituted by glass ones—open. The first sign of chemistry in the tale is the verdict of Mr. Giddon that “from the redness of the epidermis … the embalmment had been effected altogether by asphaltum; but, on scraping the surface with a steel instrument, and throwing into the fire some of the powder thus obtained, the favor of camphor and other sweet-scented gums became apparent.” The proof that Poe was interested in chemistry in mummification is as follows: the mummy says that he is “a little more than seven hundred years old! My father lived a thousand … it had been five thousand and fifty years and some months since he had been consigned to the cathacombs at Eleithias.” Here Poe is not alluding to the preservation of the mummy; he is saying that the mummy was seven hundred years old when he died, and then embalmed: “[I]t became evident that the antiquity of the mummy had been grossly misjudged.” He is praising the Egyptian abilities to preserve matter with chemistry.
Mr. Giddon is the chemist in the tale. He is the connoisseur of the techniques of embalmment and the character that knows the most about chemistry. “[His] discourse turned chiefly upon the vast benefits accruing to science from the unrolling and disemboweling of mummies,” he says at one point. Although he is the one amongst the persons present who knows the most, Mr. Buckingham makes fun of him because he doesn’t know the principles and procedures of the embalming process. He speculates that the mummy must have “been done up in asphaltum” judging by the immensity of time he had been mummified. Another option is the bichloride of mercury, which is what the mummy suggests—they employed “scarcely any thing else” than it, and it is obviously more advanced than asphaltum. Here Poe criticizes how ancient Egyptian technologies were more advanced than those of nineteenth-century America. The mummy persistently calls the people in the tale ignorant, telling them that they are in “a deplorable condition of ignorance.” He also criticizes galvanism, saying that those in the tale were in its infancy, and “cannot accomplish with it what was a common thing among us in the old days.” The mummy explains that he fell into a state of catalepsy and was given up for dead by his friends, a plot device we see in many of Poe’s tales. Here we are also dealing with a case of premature burial, but in this case, premature embalmment.

After the discovery of the embalmment principle, as I have already described it to you, it occurred to our philosophers that a laudable curiosity might be gratified, and, at the same time, the interests of science much advanced, by living this natural term in installments. In the case of history, indeed, experience demonstrated that something of this kind was indispensable. (448)

The narrator states that the principles of chemistry, thus, are indispensable for the advancement of history. It is true that the mummy Count Allamistakeo Scarabeus was awoken by a galvanic battery, but my point is that if the mummy was embalmed alive, in a cataleptic state, the resuscitation with a galvanic battery must have not been necessary
after some time. The use of the galvanic battery in this story, as will be shown in the chapter of physics, is interesting for Poe so as to demonstrate the control he had over the technologies of his time, but is not necessary for the development of the story. “[I]n whatever condition the individual was, at the period of embalmment, in that condition he remained … I was embalmed alive, as you see me at present.”

Bichloride of mercury, or “corrosive sublimate” as it was known during Poe’s lifetime, is also mentioned in two of his other stories: “The Gold-Bug” and “The Mystery of Marie Roget.” It is also extensively mentioned in his 1845 essay “Street Paving.” Another story that deals with chemistry is “The Thousand-and-Second Tale of Scheherazade,” wherein an experiment is described:

Place a plating crucible over a spirit lamp, and keep it a red heat; pour in some sulphuric acid, which, though the most volatile of bodies at a common temperature will be found to become completely fixed in a hot crucible, and not a drop evaporates — being surrounded by an atmosphere of its own, it does not, in fact touch the sides. A few drops of water are now introduced, when the acid immediately coming in contact with the heated sides of the crucible, flies off in sulphurous acid vapor, and so rapid is its progress, that the caloric of water passes off with it, which falls a lump of ice to the bottom; by taking advantage of the moment before it is allowed to re-melt, it may be turned out a lump of ice from a red hot vessel. (147)

Laverty explains in his thesis very wonderfully:

Perhaps one reason that Poe knew less about chemistry than astronomy is that it was difficult for a layman without access to a laboratory to learn about chemistry or keep abreast of the new developments. Another reason may well be that in the first half of the nineteenth century, chemistry was in a state of flux. New discoveries were numerous, and new theories were being advanced so frequently and old ones modified so radically that it was difficult for even an expert to keep up with the current state of the science. (180)

Another of Poe’s chemical experiments is phosphorescence. It can be found in two of his works: “The Fall of the House of Usher” and The Narrative of Arthur Gordon Pym of Nantucket. In Pym, he describes how phosphorescence is made:
I placed the slip of paper on the back of a book, and, collecting the fragments of the phosphorus matches which I had brought from the barrel, laid them together upon the paper. I then, with the palm of my hand, rubbed the whole over quickly, yet steadily. A clear light diffused itself immediately throughout the whole surface; and had there been any writing upon it, I should not have experienced the least difficulty, I am sure, in reading it. (37-38)

Phosphorescence can also be found in “The Fall of The House of Usher,” in the tar pits outside the house. Scientists of the time were attempting to find an explanation for it, and, as Laverty explains, “there were numerous mentions of it in the literature of the early 1800s” (183). Also, when describing Poe’s experiments in his fiction he says that they are “like those described in the textbooks of Poe’s day.” As we stated in the chapter on medicine, Poe not only mimics the language of the practitioner and the doctor, he also mimics the language of the chemist, the scientist, everybody he wants to. It is a proof of his mastery of language. “The Balloon Hoax” also has experiments with phosphorescence, as does “The Thousand-and-Second Tale of Scheherazade.” In “The Gold-Bug,” Poe describes the creation of sympathetic ink (ink that becomes visible only when heated):

I doubted not for a moment that heat had been the agent in bringing to light, on the parchment, the skull which I saw designed on it. You are well aware that chemical preparations exist, and have existed time out of mind, by means of which it is possible to write on either paper or vellum, so that the characters shall become visible only when subjected to the action of fire. Zaffre [an impure oxide of cobalt], digested in aqua regia [nitric and hydrochloric acid], and diluted with four times its weight of water, is sometimes employed; a green tint results. The regulus of cobalt [pure state of metal], dissolved in spirit of nitre, Ores a red. These colors disappear at longer or shorter intervals after the material written on cools, but again become apparent upon the re-application of heat. (832)

This method of cryptography had many readers astounded and wondering what the trick might be. After the good reception of his essay “A Few Words on Secret Writing” (1841) Poe decided to write this story, a topic explored by Poe and his contemporaries, as a curiosity of science. Poe as a lover of the hidden meanings and
elements put this gift for us here; it might as well have been something that Dupin deciphered in one of his mysteries.
CHAPTER IV

PHYSICS AND THE FIELDS OF VISION

*What I have propounded will (in good time) revolutionize the world of physical and metaphysical science. I say this calmly, but I say it.*

—Edgar Allan Poe to George W. Eveleth, 1848.

“The reception of Poe’s Eureka in Russia dates back to 1871, when the Central Censorship Committee banned Baudelaire’s translation because of the alleged “propagation of pantheism” (16) explains Osipova in her article on Poe’s *Eureka.* “I have no desire to live since I have one Eureka. I could accomplish nothing more”, he said to Mrs Clemm, shortly before he died.

We have studied how Edgar Allan Poe was a man who was very interested in the scientific phenomena of his time. He transcended his contemporaries in being someone who left a trace of science in his writings, of physics, and his works have a heavy load of it. Poe uses physics in two remarkable ways. The first is to explain the devices of sight, of looking, such as telescopes, microscopes, glasses, daguerreotypes, etc.; the second is to explain the industrial revolution that was happening around him and his contemporaries, using literature as a way to explain how these machines worked and trying to envision what their future would be. Poe explained them to the public through his fiction, and also through his notes in the newspapers. Poe’s tales introduce us to a problem, a mystery, and the way to understand and solve it is through visual terms. This chapter will be dedicated to physics, with a special emphasis on ocularity, the subject matter of optics, empirical science of the first half of the nineteenth century, physical phenomena, and their effects on Edgar Allan Poe’s narrative beyond the limits of physical perception.
The way in which various elements of sight, vision, perception, self-analysis, ocular tools, and points of view abound in Poe’s works suggest that exploration of any particular aspect of his work has to have perception and sight as its starting point.

4.1. OCULARITY AND PERCEPTION IN POE’S WORK

Critic Judith Saunders wrote in her essay “‘If This I Saw’: Optic Dilemmas in Poe’s Writings” (1986) that

In addition to an obsessive concern with eyes themselves, we find in Poe’s work a consuming interest in the process of sight: his characters experiment with various modes of observation, struggle to see in the dark or to find concealed objects, and grapple with the problem of assigning meaning to what they see. (63)

This thought moves the reader to question the reliability of Poe’s narrators—a topic that has been thoroughly analyzed and explored in the literary theory surrounding Poe. The question is, however, how reliable or unreliable vision is in these stories, and how the elements of ocularity and perception function and serve as indicators in Poe’s tales. Observation, inference, and imagination are all elements of Poe’s philosophy of science. Poe, as we have seen in other chapters, left traces of his knowledge not only in his essays, but also in his narratives. But differently from the rest of his work, there was a bigger presence of physics in his philosophical essays than in his stories. As Carroll Dee Laverty says:

Poe comments on certain fundamental laws of physics and uses many of its facts in his prose. The general theory of forces attracting according the inverse square of the distances is the one physical law to which he pays great attention. It is fundamental to Eureka. Electricity, optics, and hydrodynamics are subdivisions of general physics that supply material for his writings, particularly his stories (163).
Indeed, Poe was a well-read man. He was aware of the technological advances of his time and was curious to explore and understand them. Beyond *Eureka*, physics is present throughout his narratives, in his poetry and tales. Bond tells us in his essay “Poe as an Evolutionist” that the writer was very proud of the poem he had written: “the publication he had to propose was of momentous interest. Newton’s discovery of gravitation was a mere incident compared with the discoveries revealed in this book. It would at once command such unusual and intense interest that the publisher might give up all other enterprises, and make this one book the business of his lifetime.” (269)

He even anticipated some physical phenomena that happened after his death. Poe manifested the extent of his knowledge in two ways: through serious criticism, in form of his book reviews and essays for the newspaper, and also through his essays; and through his satirical and humoristic tales. The first work we will focus on is from the latter group.

4.2. VISUAL MODIFICATIONS: GLASSES, MICROSCOPES AND TELESCOPES

“The Spectacles,” published in 1844 in the *Philadelphia Dollar Newspaper*, is one of Poe’s exquisite comic tales. It poses a funny reflection of what is commonly known as love at first sight, “what may be termed ethical magnetism or magnetoaesthetics,” an affection which “arise[s] in the heart as if by electric sympathy” (585).

The narrator is a young man called Napoleon Bonaparte Froissart, who is shortsighted but refuses to wear his spectacles in public because of his vanity. One night
at the opera he sees a woman in the audience who catches his eye, and instantly falls in love with her. Napoleon starts describing how beautiful she is, despite not being able to see her clearly: “[I]f I live a thousand years, I can never forget the intense emotion with which I regarded this figure … the most exquisite I had ever beheld … the beau ideal of my wildest and most enthusiastic visions” (889). His friend Talbot tells Napoleon that he knows the woman. She is Madame Eugenie Lalande, a rich Parisian widow. Talbot introduces them, and after a brief correspondence, Napoleon accosts her at night. “I gave loose to the impetuous enthusiasm of my nature, and … besought her to consent to an immediate marriage. At this impatience she smiled” (901). Shortly after, and encouraged by her candor, Napoleon “went so far as to speak of a slightly hectic cough with which … I had been troubled—of a chronic rheumatism—of a twinge of hereditary gout—and … of the disagreeable and inconvenient … weakness of my eyes” (906). Madame Lalande agrees to marry him with one condition: describing her glasses, she asks that he wear them on their wedding night.

This little ocular assistant, which now depends from my neck … the identical double eye-glass … They formed a complex and magnificent toy, richly chased and filigreed, and gleaming with jewels. You shall conquer, for my sake, this affectation which leads you … to the tacit or implied denial of your infirmity of vision. I wish you to wear spectacles … you shall accept the little toy which I now hold in my hand … by a trifling modification thus—or thus—it can be adapted to the eyes in the form of spectacles, or worn in the waistcoat pocket as an eye-glass (908).

When he finally sees her, he discovers that she is his toothless 82-year-old great-great-grandmother. The story has a happy ending, but the last line is very eloquent in itself: “In conclusion: I am done forever with billets doux and am never going to be met without SPECTACLES” (916).
Although the first depiction in painting of glasses arises in Tommaso da Modena’s 1352 painting of Hugh of Saint-Cher, Poe’s possible source of inspiration was Johannes Kepler’s 1604 *Ad Vitellionem Paralipomena* (“Emendations to Witelo”), where he adopted “Platter’s view of the eye being a *camera obscura*, and regarded the crystalline lens, whose posterior surface he deemed hyperbolic in shape, not as a sensitive organ but only as a focusing device for transmitting images to the screen of the *camera*, the retina” (Ilardi 244). Ilardi also notes that Kepler “analyzed the refocusing function of eyeglasses, which corrected the anomalies of a misshapen eyeball … the use of concave and convex lenses of appropriate curvature will solve [hyperopia and presbyopia] by providing a proper refocusing of images on the retina” (244). Another theory is, as John Tresch suggests, that “The Spectacles” was another of Poe’s descriptions of the science America was undergoing during the 1840s: “[Glasses were] an innovation possible only after 1837, when it became possible to draw steel light and strong enough to hold lenses on the face” (132). Kepler had a very Gothic visual theory:

Vision occurs when the image (*idolum*) of the whole hemisphere of the world which is in front of the eye, and a little more, is formed on the reddish white concave surface of the retina (*retina*). I leave it to natural philosophers (*phisici*) to discuss the way in which this image or picture (*pictura*) is put together by the spiritual principles of vision residing in the retina and in the nerves, and whether it is made to appear before the soul or tribunal of the faculty of vision by a spirit within the cerebral cavities, or the faculty of vision, like a magistrate sent by the soul, goes out from the council chamber of the brain to meet this image in the optic nerves and retina, as it were descending to a lower court. For the equipment of opticians does not take them beyond this opaque surface which first presents itself in the eye (quoted in Crombie, 1136).

Going back to “The Spectacles,” there are various readings of the tale. One of them is that Poe is criticizing observation, or in this case, defective observation. The first line of the story, “Many years ago, it was the fashion to ridicule the idea of ‘love at first sight;’ but those who think, not less than those who feel deeply, have always advocated
its existence” (886) leaves a footprint of Poe’s ideas of didacticism, thus criticizing observation and concluding without knowing or studying in addition. As Tresch explains, “[S]uch testimonies of the epistemological power of vision are contradicted by a recurrent suspicion about the visible” (131). In speaking about the observations of the Orion Nebula taken by Lord Rosse’s giant telescope, he writes, “[I]t was supposed that we ‘had ocular evidence’—an evidence, by the way, which has always been found very questionable” (131). This is the same situation we find in “The Tell-Tale Heart” and “The Sphinx,” where Poe shows how defective eyesight either convolutes the viewpoint of the protagonist or makes one the subject of abomination. In “The Tell-Tale Heart,” James Kirkland explored the theory that the eye of the old man is the engine of wrath and destruction in some cultures, and how the obsession of the narrator for the old man’s eye takes an entire new significance in the context of those folk beliefs and practices (Satwik Dasgupta 13).

Some other critics, however, believe that the disease the narrator is referring to manifests itself in a visual obsession over a troublingly opaque eye, and that the room in which the scene happens recalls the camera obscura. The eye and the mind are compared to a room in which images of the outside world are projected.

4.3. CAMERA OBSCURA, DAGUERREOTYPY, MEDIUM PHOTOGRAPHY

This image of the camera obscura immediately links us to photography, another of Poe’s favorite topics, not to mention another one of his scientific anticipations. Poe commented in his essay “The Daguerreotype” that
Perhaps, if we imagine the distinctness with which an object is reflected in a positively perfect mirror, we come as near the reality as by any other means. The Daguerreotyped plate is infinitely (we use the term advisedly) is infinitely more accurate in its representation than any painting by human hands … The variations of shade, and the gradations of both linear and aerial perspective are those of truth itself in the supremeness of its perfection. The results of the invention cannot, even remotely, be seen—but all experience, in matters of philosophical discovery, teaches us that, in such discovery, it is the unforeseen upon which we must calculate most largely (2, columns 1 and 2).

For anyone particularly familiar with the work of Poe, the fact that photography was a fascination for him should not be surprising. As Carroll Dee Laverty states, Poe was “one of the very first to appreciate the fact that photography could be valuable in the study of astronomy” (165). He also predicted the daguerreotype’s helping the arts, stating in his note “Improvements in the Daguerreotype” (1840) that “the production of Daguerreotype effects on paper is likely soon to be accomplished” (Laverty 166).

The fact that Poe linked photography to astronomy is important. And when we think of astronomy in Poe, Eureka inevitably comes to mind. With Eureka, Poe wanted to “unravel the riddle of the universe” (Bond, 268).

Another story in which vision and images are present is “Some Words with a Mummy,” in which the characters discuss burning glasses and lenses, and the manufacture of glass in general. In “The Philosophy of Furniture,” Poe remarks on the senseless images produced by the kaleidoscope, invented by Sir David Brewster in 1816. He also said,

The results of the invention cannot, even remotely, be seen — but all experience, in matters of philosophical discovery, teaches us that, in such discovery, it is the unforeseen upon which we must calculate most largely. It is a theorem almost demonstrated, that the consequences of any new scientific invention will, at the present day exceed, by very much, the wildest expectations of the most imaginative. Among the obvious advantages derivable from the Daguerreotype, we may mention that, by its aid, the height of inaccessible elevations may in many cases be immediately ascertained, since it will afford an absolute perspective of objects in such situations, and that the drawing of a correct lunar chart will be at
once accomplished, since the rays of this luminary are found to be appreciated by
the plate.

There are seven different daguerreotypes of Poe that we know about. Sarah Helen
Whitman, arguably Poe’s last romantic interest, and the group of transcendentalists
surrounding her would later use photography to create their cartes de visite as
professional mediums, a practice which became very popular in the second half of the
nineteenth century. Unfortunately, Poe was not alive during this era to comment on how
this widespread use of photography altered the accuracy of the daguerrotypy he
vehemently praised.

4.4. FLANERIE AND THE MAN OF THE CROWD

Poe’s detective, like the flaneur, appeared when cities grew so large that
anonymous crowds became a source of fear or amusement. One of Poe’s most notorious
tales is “The Man of the Crowd.” The story starts with an unnamed narrator suffering
from an unnamed illness—a very common resource in Poe’s tales, which we saw in
Chapter I. The narrator is sitting inside a coffee shop in London looking outside at the
crowd. He categorizes the different types of people he sees into different groups, and
hypothesizes about their lives. The narrator in this tale seems to enjoy scrutinizing and
studying the urban spectacle while preserving his anonymity. As the day comes to an end,
the narrator is captivated by the image of a decrepit old man of sixty-five or seventy years
of age, whose face has a peculiar idiosyncrasy that attracts him. He rushes out of the
coffee shop to follow the man. He follows the man for two days without the man’s
noticing, and then, out of exhaustion, the narrator confronts the man, who looks past him
unaltered—as if he did not see him. The narrator concludes that because the man is
inscrutable and unable to leave the crowds of London, he is “the type and genius of deep crime” (406). In the story, the first mode of vision (inside the café) is too narrowly focused. In the second mode, in the street, it is too scattered. Neither approach turns out to be successful. The functioning principle of Poe’s voyeuristic narrator replicates the modern-day surveillance camera.

When illustrators or graphic artists have portrayed this tale, most have failed in depicting what could be considered as the most important part of the story: the narrator sitting inside the coffeehouse looking through the window. The window in the story serves as a magnifying glass: its rounded shape, curving outward into the street, even mimics the convex lenses used in reading glasses or simple microscopes used to enlarge an image. The narrator, sitting as a scientist would at his laboratory table, focuses on incredibly minute details: the position of an ear, the voluminousness of a wristband, the length of a thumb… The window looks like an early daguerreotype portrait—a polished silver plate, imprinted with the sitter’s reversed mirror image, which presents either that image or the viewer’s own reflection. Poe also associates windows with visual organs: “two luminous windows” in the haunted palace, the House of Usher’s “eye-like windows,” and the comparison between a closed eyelid and an open lattice in “The Sleeper.” For Poe, the eye is a window and the window is an eye: “[T]he narrator’s voyeuristic pleasure,” explains John Tresch, “is arguably equivalent to the psycho-social ecstasy derived by the controllers of these devices, who have illimitable control over their social surroundings and, as a consequence, the whole world under such electronic hegemony turns into a cluster of men in the crowd” (88).
Tresch’s ideas on the narrator’s experience linked to today’s society find a similarity with Monika Elbert’s theories, which link this story to the “nineteenth century conflict between aristocracy and democracy … and between the conservative Whig party and the progressive democratic party” (16). Elbert’s point is that “Poe was not an eccentric man outside the crowd but rather an informed man of the crowd who reflected tensions within the American republic itself” (19). For Poe, it was difficult to imagine any perspective, either distant or magnified or close-up and unmediated, from which the masses could be satisfactorily experienced, understood, analyzed, and controlled. The tale thus acknowledges Poe’s own inability to master the crowd and the perverse, messy, unruly social or political or cultural forces that it embodies.

At the beginning of the tale, Poe’s protagonist moves from reading a newspaper to gazing at other people at the coffeehouse to observing unknown strangers in the street. This is the last time a character in Poe’s tales would follow this progression. Poe’s later detectives would unite the resolvent and the creative, ignore the urban setting, confine themselves indoors, and solve crimes only insofar as they are recorded in the daily press (as in the “Mysteries in the Rue Morgue,” “Marie Roget”…), encoded on a scrap of ancient parchment (“The Gold Bug”), or discernible in the movements of a letter (“The Purloined Letter”). After “The Man of the Crowd,” Poe only wrote detective stories investigated at a distance. As John Tresch points out,

Poe ponders the implications of a variety of optical devices: the camera and the daguerreotype, telescopes and microscopes, corrective lenses (including monocles, lorgnettes, spectacles, tinted lenses, and double eyeglasses); the panorama, and the kaleidoscope. He also anticipates subsequent advances in visual culture as well as their psychological, epistemological and social effects, which would later be explored by theorists of modernity from Walter Benjamin to Baudrillard. (88)
The theme of flanerie, first brought out by Walter Benjamin, curiously fits in with
the visual topoi of Edgar Allan Poe and is applicable to some of his tales. In his tales of
detection, Poe’s hero Auguste Dupin easily finds the visible clue, which allows him to
grasp the circumstances leading up to a crime.

More of Poe’s works have a heavy dependence and reliance on vision. The Dupin
mysteries are the most obvious example. In the Dupin mysteries, Dupin laments that E. F.
Vidocq, the famous French criminalist, “impaired his vision by holding the object too
close whereby he might see, perhaps, one or two points with unusual clearness, but in
doing so … necessarily, lost sight of the matter as a whole.” Dupin’s principles, by
contrast, are the following: never assume anything; the nature of the object under scrutiny
must dictate the nature of the inquiry; it is necessary to keep sight of the matter as a
whole; one must prove that “crucial impossibilities” are possible, if indeed they are so. In
some of his letters, Poe criticizes Coleridge because of his overreliance on the traditional
tools and methods of reason, much like Vidocq, whose insistence on systematic
observation blinds him to the situation at large. Poe believes that Coleridge’s profound
perspective distorts the object of his investigation.

Another of the stories Poe wrote that dedicates importance to vision is “The
Sphinx.” This tale shows a character that, as we will see later in “The Spectacles,”
becomes obsessed with his own viewpoint and perception to such a degree that he refuses
to see and think logically. Poe’s myopic protagonist, gazing through an open window,
mistakes a tiny sphinx moth that hangs there by a thread for a huge monster covering the
entire countryside. In “The Murders in the Rue Morgue” Vidocq “impaired his vision by
holding the object too close. He might see, perhaps, one or two points of unusual
clearness, but in so doing he, necessarily, lost sight of the matter as a whole” (412). In *Eureka*, Poe criticizes Baconian inductivism on similar grounds: the error of our progenitors was analogous with that of the wise-acre who fancies he must necessarily see an object the more distinctly the more closely he holds it to his eyes (11).

In *Eureka*, Poe criticizes traditional philosophy from the very beginning. He uses the literary device of a letter from the future, written in the year 2828, and mocks Aries Tottle (Aristotle) and Hogg (Bacon) for proposing the outmoded deductivism and inductivism, respectively. Against deductivism he says that no truths are self-evident, and that “*no such things as axioms ever existed or can possibly exist at all*” (122, his italics). Against inductivism he comments that empirical findings never constitute, in and of themselves without theoretical presuppositions, conclusive evidence for or against anything. When he speaks of “telescopic observation,” for example, he says that it has to always be guided by the laws of perspective. His most fierce criticism to both methods can be seen in his tales of ratiocination. In *Eureka*, Poe critiques both schools of thinking “on account of their pompous and infatuate proscription of all other roads to truth than the two narrow and crooked paths—the one of creeping and the other of crawling—to which, in their ignorant perversity, they have dared to confine the soul” (18).

“The Thousand and Second Tale of Scheherazade” serves as a means to note the recent advances in microscopy, telescopy, spectrometry and photography, and also the railroad, Maelzel’s chess player, and Babbage’s calculating engine. The tale further “orientalizes” and makes marvelous the Daguerreotype, the electrotelegraph, and the steam press (the last described as “fingers [...] endowed 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 [...] a thing of such prodigious strength, so that it erected or overthrew the mightiest empires at a breath; but its power was exercised equally for evil and for good”). In “William Wilson,” the protagonist tries to identify an antagonist, in a dimly lit room, which might simply be his mirror image. In “The Purloined Letter,” Dupin quickly recovers a stolen letter in full view of the thief, a government minister, during a social visit—while the Parisian police use a powerful microscope without sagacity, they rely on the merely visible.
CHAPTER V
POE AND PREDARWINISM

By an Evolutionist

The Lord let the house of a brute to the soul of a man,
And the man said, ‘Am I your debtor?’
And the Lord–‘Not yet; but make it as clean as you can,
And then I will let you a better.

--Alfred Lord Tennyson

The presence of biology topics and treatment of animals in Poe’s works, particularly Poe as a theorist of evolution, are topics that started calling researchers’ attention since 1907. Although this has not been a topic with enough presence in the spotlight, there is some research dedicated to linking Poe to the study of evolution and presenting his evolutionary theories to his readers, in an attempt to explain how Poe’s treatment of animals in his tales was not coincidental. Bond notes, “The merits of Poe, in common, more or less, with the other pre-Spencerian evolutionists . . . [that] lie in how far and how truly his genius enabled him to divine the mode of development of the universe” (274).

Apart from “Eureka,” we can find traces of Poe’s ideas on evolution in the stories “The Colloquy of Monos and Una,” “The Island of the Fay” and “Mesmeric Revelation.” Also in “Loss of Breath,” where the tale has been regarded as a narrative of involution, where a man retells his transformation from man to amphibian in a satiric and grotesque tale mocking case studies “pertaining to the gradations of living organisms and the evolution of human species” (Autrey 189). But we will not study this tale in depth in this chapter, for it has been previously analyzed in Chapter I. Laverty explains that the information on botany and zoology Poe utilized for his work was “more literary than
scientific” (221). When one thinks about Poe as a biologist, one thinks automatically of his work *The Conchologist’s First Book*, a book on natural history.

There are several mentions in his work to botany: flowers, plants, trees, also insects, etc. Laverty also brings attention to the fact that Poe “of the four odd facts of botany that he worked into [“The Thousand-and-Second Tale of Scheherazade”], he obtained, condensed, and paraphrased from Hugh Murray’s *Encyclopaedia of Geography*. He waves these facts into the text in a fanciful way.” (223). Other animals that he mentions are the antelope, wolves, buffalos, bears and beavers. But a special attention is taken to the description of monkeys and orangutans.

5.1. WYATT’S “NATURAL HISTORY” AND CUvier. Baboons, Gorilla and Orangutans

As Autrey has suggested, Cuvier has been a notable influence for this aspect of Poe especially “The Murders in the Rue Morgue—Dupin solves the crime by his knowledge of the so-called beast of Cuvier: “appended are also a catalogue of the engravings, and a tabular view of the classification of animals adopted by Cuvier in his ‘Regne Animal’ with examples included.” He posits that the story “is built around the fact that certain species of orang-utan can imitate many of man’s activities.” Poe quotes a definition of Cuvier’s class of *Entozoa* in one of his contributions to *Alexander’s Weekly Messenger* and poses the question of whether evolution is a positive or a negative thing depending on animals evolving into humans or human involution to animals. Poe’s relationship to Cuvier is not clear. In Quinn 295 and Woodberry 197 Poe states that “he
translated Cuvier himself” but critics have pointed out that Poe does not explain which of Cuvier’s works he translated. In addition, Poe’s relationship to Thomas Wyatt is unclear too. Wyatt published *A Synopsis of Natural History of Animals With Human and General Physiology and Biology* in 1839, but it has been argued that it was probably prepared by “Poe, Wyatt, and Professor Henry McMurtrie much as *The Conchologist’s First Book*” during Poe’s time as a ghost writer, “in 1838 and 1839 when his fortunes were at a low ebb.” Autrey explains:

Probably he picked up from [collaborating with Wyatt] some knowledge of zoology, botany, and geology the three main subjects treated. In some of his stories he draws on the book for scientific descriptions. Poe’s knowledge of biology was more journalistic than scientific, but his work on Wyatt’s *Natural History* and his reading gave him considerably more than average knowledge, particularly of entomology. His scientific knowledge of animals, especially of insects, is infused into his narrative become a very part of it (233-234).

Two other important details stem from this collaboration. The first, the description of the orangutan in the book as the most similar animal to man. Secondly, in “The Sphynx,” Poe describes the moth “with scientific attention to detail, taking his description almost verbatim from Wyatt’s *Natural History*.” One of the first articles we can find on Poe’s interests in evolution is Frederic Drew Bond’s “Poe as an Evolutionist.” Already in 1907 when his article was published in *Popular Science Monthly*, Bond was aware that this part of Poe’s work had received very little attention. In reference to the essay “Poe’s *Eureka* and Some Recent Scientific Speculations” by Wm. Hand Browne published in *The New Eclectic Magazine* in 1868, Bond explains that “Poe seems to have put certain of his ideas before scientific men during his lifetime, but received no encouragement” (268). Although Bond is referring specifically to *Eureka* here, this can be applied to and affirmed by most of the works mentioned in this dissertation. Of course, although Poe is
or main subject of study here, he has to be compared and contrasted with his contemporaries as to observe how special he was, and also, how unique were his works. For instance, in the work *Victorian Poets and Poets of America* Edmund Clarence Stedman spoke about the reconciliation of poetry and science: “Theology, teaching immortality, now finds science deducting the progressive existence of the soul as an inference from the law of evolution. Poetry finds science offering it fresh discovery as the terrace from which to essay new flights” (37) (111).

5.2. BABOONS, GORILLAS AND ORANGUTANS: EVOLUTION IN THREE TALES

Stedman is important because, apart from being one of Poe’s contemporaries, he too, like Poe, attacked the didacticism of the transcendentalists. Stedman is aware of the scientific and technological progress America is undergoing, as well as noticing the new evolutionary theories happening. Stedman is predicting what Scholnick calls “an ultimate reconciliation” of science and poetry, or creative work, and “a new concern for philosophical ideas in poetry” (112). Also important are Poe’s possible sources for his evolutionary philosophy. Scholnick points out that the eighteenth-century French philosophers, as well as Coleridge and Schegel were notable influences but more importantly “most of his speculations seem determined by the facts of contemporary science and his own intellectual activity (268). Perhaps, the first Poe tale to come to mind when we think of Poe and evolution is “The Crimes of the Rue Morgue.” In it, Poe leaves trace of the similarities between primates and men, not only physical, but also behavioral.
Max L. Autrey reads this representation as an intention to mock and ridicule man. “Through repeated uses of baboons, gorillas, and orangutans,” Autrey defends, Poe “attempted to illustrate and ridicule the primitive elements in man’s nature. Intending an even greater insult to man, Poe used the analogy between human and frog to ridicule not only the insignificance of man but also his foolish, grotesque, and often pathetic nature (188).” Scholnick explains that Poe’s philosophic speculations were sometimes crude, “yet foremost among them he entertained, in its broad outlines, that idea of the changes and development of the world which goes, nowadays, by the name of theory of evolution” (267). The story of pre-Darwinism is necessary and important in order to understand possible influences for Poe to create his own stories of evolution. Poe was influenced by Baron Cuvier, Sir Charles Lyell, Erasmus Darwin, and Auguste Comte, and placed himself among the Idealistic Morphologists. As Max L. Autrey explains in *Edgar Allan Poe’s Satiric View of Evolution*, Poe was aware of the prevalent theories on evolution. “Most philosophers and scientists of the first half of the nineteenth century accepted the idea of a patterned universe and stratified human existence” he continues, and “although Darwin and Huxley would not make their statements on biological evolution until some years later, the belief in progression by means of transmutation was a significant intellectual force during the early 1830’s. Incorporated in this belief was the view that man’s ascendancy over organisms was not due to inherent superiority but to an advanced state of development.”

It has been noted that Edward Tyson’s *Orang-Outang, sive Homo Sylvestris: or, The Anatomy of a Pygmie compared with that of a Monkey, an Ape, and a Man* (London: 1699) is possibly the first written study treating evolution we can consult, this study
“states that the orangutan is immediately below man on the Great Chain of Being and, therefore, forms the link between human beings and the lower animals” (Autrey, 187). For Poe, the missing link between man and other animals was something to theorize about and think of. This, for Poe, was the perfect terrain to explore his ideas on physiognomy and physiology. After Tyson’s work came the notorious novel by Swift, *Gulliver’s Travels* (1726), which clearly also influenced Poe.

### 5.3. THE BRUTALITY OF MAN: ANIMALS AS SUPERIOR BEINGS

Swift being a source of inspiration for Poe has been previously commented on, Jeffrey Meyers noted in 1992 how “The Man that was Used Up” has close grotesque resemblances to “A Beautiful Nymph Going to Bed” both main characters having to deconstruct themselves before they go to bed and reconstruct themselves again before they start their day. There is, indeed, a Swiftian influence in Poe’s stories: “in this story, Poe is implying the intellect of the animal. He is showing how evolution from animals can be a positive thing. For the first time he presents animals as a threat, as something intelligent one needs to be afraid of and cautious from, and which can murder with the same sagacity and outsmarting prestigious investigators” explains Laverty, and also “Hop-Frog’s movement lends support to Darwin’s later insistence that one should refer to the succession from one organism to another” (196).

Another interesting work to mention is how James Burnett (Lord Monboddo) noticed that “orangutan” could be etymologically disglossed as “man-of-the-woods” and thought that both orangutans and men “belong to the human species,” sustaining his
opinions by the facts that “orangutans walk upright, are teachable, can develop emotional relationships, are dignified in their deportment, have undeveloped speech potential, are able to imitate others, and are courteous and well-mannered” (Autrey, 188). Another influence could have been Washington Irving. As Autrey notes, in his *Knickerbocker's History of New York* Irving “compared many of his central characters to various subhuman forms of life, satirically analyzed the so-called superior and inferior levels of animals, noted the progress that human beings have presumably undergone, and pointed out the relationship between man and ‘his brother—worm.’” Man and worm will also appear in Poe’s “Ligeia,” in the poem *The Conqueror Worm*. Lastly, Autrey explains the 1817 satiric novel of Thomas Love Peacock, where the main character, Sir Oran Haut-ton is an orangutan that ends up becoming a respectable English baron. This might have been a big influence for Poe, whose use of the ape in his stories and other animals dates back to year 1838 with the publication of *The Narrative of Arthur Gordon Pym*.

The tale “Four Beasts in One” is set in the year 3830 in Antioch, where a Syrian monarchy lives. In it, the main character is an animal possessing human characteristics. Throughout the story we will see man-animal analogies. Poe talks about some “ridiculous beings … half naked, with their faces painted, shouting and gesticulating.” They, according to the description that follows that line are “mountebacks. Others … philosophers [and the rest] some laudable comicality of the king’s.” The narrator calls these people “wild beasts”. The narrator tells us that each animal is following its master, some of them with a rope around their neck, but “the lion, the tiger and the leopard are entirely without restraint.” “There are occasions where Nature asserts her violated dominion”. The tale talks about a class system: the king is the highest figure, followed by
his courtiers, lower primates, and wild beasts, which are the normal habitants. Some of these beasts are under restraint with a rope, but others have been trained to serve. “Incorporated in this satirical comment on the nature and conduct of kings is a clear indication of the stage represented by the monarch—he is still a quadruped and retains his tail” after the story continues, “it seems that the king has completed the movement from the level of a lower animal to that of a primate—he has reached the baboon stage. He is now a biped.” This is a symbol of degradation, according to Autrey (192), which has the opinion that in this tale “the evolutionary movement can hardly be viewed as desirable … the narrative presents an effective attack on the theory of descent” (193).

5.4. AMPHIBIANS, REPTILES, TARR AND FETHER

“The animals in question had, at the epoch of my story, very rarely been seen in any part of the civilized world; and as the imitations made by the dwarf were sufficiently beast-like and more than sufficiently hideous, their truthfulness to nature was thus thought to be secured” (page 2, column 1, my italics). This excerpt belongs to the next tale where a presence of animal hierarchy is noted: “Hop Frog” (1845). The narrator in the story is different from the ones in other tales; this narrator knows that the reality of his time will be different from future realities. In this tale, we see a character, Hop Frog, that is the entertainer of the king, whose value was trebled because he was also “a dwarf and a cripple,” and although Hop Frog’s aspect is hideous it is the king the one being referred throughout the story as “the tyrant” and “the monster.” Hop Frog is named this way by the king because of his amphibian similitudes: “Hop-Frog could only get along
by a sort of interjectional gait—something between a leap and a wriggle—a movement that afforded illimitable amusement … to the king … [He] could move only with great pain and difficulty [but had] prodigious muscular power … upon his arms, by way of compensation for deficiency in the lower limbs.” Poe notes how the king had a “protuberance of his stomach and a constitutional swelling of the head” and the physical aspect of Hop Frog made him feel better about himself. Max L. Autrey posits, “in its comparison between animal and man, the tale presents an effective satirical attack on the so-called advanced species” (195). He has this opinion because the king looks more like a frog than Hop-Frog himself, but it is the jester the one carrying that name. He continues: “The central conflict in “Hop-Frog” involves two of the primary stages in the process of evolution by means of natural progression. The dwarf and the king represent the subhuman levels of the amphibian and the simian” (195). When Hop Frog climbed with his powerful arms, “he certainly much more resembled a squirrel, or a small monkey, than a frog.” The fact that Hop frog resembles a small monkey is interesting, for implies a monkey is smarter and wittier than the king. But also interesting is how Hop-Frog avenges the king’s offense to Trippetta by suggesting “a capital diversion” called “The Eight Chained Ourang-Outangs.” “The beauty of the game … lies in the fright it occasions among the women” he explains, knowing well it will not fright women, but the king and his friends. Like in “The Cask of Amontillado,” the victim is the one who actually wants to be condemned. The king begs Hop-Frog to execute his number on he and his friends—so Hop-Frog disguises them as orangutans so well that, he promises, “the company of masqueraders will take you for real beasts—and of course, they will be as much terrified as astonished” (page 2, column 1). Appearing as simians, Laverty
explains, “the eight figures obviously represent a subhuman species their confirmed
generic level of brutes is significant.” Hop-Frog murders the king and his cabinet by
setting their costumes on fire, in a revengeful act, but the readers keep having the sense
that the brutality comes not from the jester, but from the victims.

Many believe the men to be real “beasts of some kind in reality, if not precisely
ourang-outangs” as he states in the story. There are two details, however, that link “Hop-
Frog” to the next tale on analysis, “The Murders of the Rue Morgue” as we will study
throughout. The first one is the mention to “chimpanzees, or other large apes, in Borneo”
in the first story and “the orangutan of Borneo” in the latter. In Hop-Frog, Poe was aware
of “the fashion adopted” by those who capture chimpanzees. “The Murders in the Rue
Morgue” (1841) has been said to be similar to Zadig, by Voltaire. The story tells the
tragedy of the Rue Morgue of Madame L’Espanaye and Mademoiselle Camille, her
daughter, which are brutally murdered in their house and “the police are confounded by
the seeming absence of motive—not for the murder itself—but for the atrocity of the
murder.” As Goulet puts it, this is one of Poe’s “tales of ratiocination wherein animals
ironically appear in bestial roles and man (especially as represented by Dupin or his
counterpart) possesses outstanding intellectual powers as well as an almost transcendent
poetic wisdom”. In most of Poe’s works where men and animals are referenced, the view
he has towards them is of degradation. A brief mention can be done to two stories we will
not study in depth, for they have been analyzed in other chapters: “Loss of Breath,” for
instance, where we see a man experiencing a retrogression that makes him appear like an
animal, and Eureka. Some researchers, such as Bond, make of Eureka the main object of
their analysis when it comes to Poe and evolution. In “The System of Dr. Tarr and
Professor Fether” (1845), the tale in which Poe satirizes the method of reform, Poe compares mankind to frogs and apes. The unnamed narrator is curious about “the system of soothing,” a new method that treats mental illnesses in a mental institution in southern France, where “all punishments were avoided—that even confinement was seldom resorted to—that the patients, while secretly watched, were left much apparent liberty, and that mist of them were permitted to roam about the house and grounds in the ordinary apparel of persons in right mind”. Once in the hospital, the narrator is told that the patients are encouraged to walk freely around the asylum and is invited to dinner with a big group of people, caretakers apparently. He learns the strange behavior of some of the patients, thinking themselves objects and animals; and also that the system of soothing has been replaced by the system of Doctor Tarr and Professor Fether, much stricter. After a while, he hears some noises and learns that some patients escape from the cells, only to discover that the patients were those attending the dinner and that they had locked the keepers in the cells. Everything goes back to normal in the end. The most interesting part of the story is when the patients start acting as animals. “An ignoramus,” as Poe calls him, “mistook himself for a frog,” animal to which “he resembled in no little degree” and

his croak thus—o-o-o-o-gh—o-o-o-o-gh! was the finest note in the world—B flat; and when he put his elbows upon the table thus—after taking a glass or two of wine—and distended his mouth, thus, and rolled up his eyes, thus, and winked them, with excessive rapidity (1012)
Poe might be implying here that mankind is like a frog in its intellect, physical aspect and behavior: “Sir, if that man was not a frog, I can only observe that it is a pity he was not” (1012). Another of the patients thought he was a chicken. The cure according to the system of Doctor Tarr and Professor Fether was to “insist upon the thing as a fact—to accuse the patient of stupidity in not sufficiently perceiving it to be a fact—and thus to refuse him any other diet for a week than that which properly appertains to a chicken. In this manner a little corn and gravel were made to perform wonders.” Another one, a donkey. And the last example, a woman who thought herself a chicken. Dinner goes on until mayhem rules, “the frog-man croaked away as if the salvation of his soul depended upon every note that he uttered … the continuous braying of a donkey arose over all … Madame Joyeuse … [stood] up in a corner, by the fireplace and [sang] out incessantly at the top of her voice, ‘Cock-a-doodle-de-doooooh!’.” In the midst of this mayhem, the ten windows of the asylum are broken into by “a perfect army of what I took to be Chimpanzees, Ourang-OUTangs, or big black baboons of the Cape of Good Hope” which entered “pele-mele, fighting, stamping, scratching, and howling” and gave the narrator “a terrible beating” until he hid from them under a sofa. This is not the only story in Poe’s work where an orangutan beats a person; in fact, in the Murders of the Rue Morgue the orangutan imitates human behaviors and actions.
CONCLUSION

Poe spent over a year as a cadet at West Point, the first school in the United States to offer an exclusively scientific curriculum, an elite institution modeled directly, both in terms of subject matter and its discipline, on France’s Ecole Polytechnique. Poe contributed to, and actively engaged with, an intellectual climate that took discussion about the methodology of the sciences seriously. His own contributions are both original and well-motivated. Poe had personal interest in depicting human failures, as part of his belief that man has a compulsive and inevitable predilection to let his point of view determine what he sees. Although driven by economic and psychological needs, Edgar Allan Poe did not find sufficient time to pursue his general interest in science until very late in his life. “Edgar Allan Poe from the Scientific Imagination” has examined the reception of leading scientists that influenced Poe and the authors’ contribution to and impact on science, the literary-scientific world, and American fiction. In addition to Poe scholarship that observes how contemporary science is found in Poe’s works, this thesis has examined how the author likewise influenced science. This study gave an answer to the following questions: How could Poe anticipate future scientific experiments? How did Poe’s literature influence science, and ultimately how did that change the course of science in its own right?

Poe was among the most widely respected men of his era, but his collaborations on science and medicine continue to be neglected by the majority of the public and academia. My work stems from a fascination with this side of Poe as a scientist, a
trajectory that has made me think critically about the ways in which science, pseudoscience, and medicine have been constructed in relationship to literature. My research has substantial implications for scholarly discussions on the intersection between literature and science, as it focuses not on the separation of both fields but on their mutual influence. We have seen the use of medicine of the body, or external medicine, in Poe’s work; how his contribution to medicine and history is significant, not only because his stories made nineteenth-century readers question the practices inside and outside of the practitioner’s room and the limits of science and pseudoscience—where did one end and the other begin?—but also because Poe left a trace of these practices in a vast percentage of his total corpus of work. His criticism and analysis yielded more results than those of any other author writing about science and medicine in fiction at that time. With narratives such as “Berenice” Poe is implying that diagnosis is quick and disposal of the cadaver equally quick, and that the characters in his stories have access to utensils and implements of specialties that are not their own. He is reinforcing, thus, the idea that medicine during his time is something one could practice at home, by oneself. We have studied how the hypersensitivity Roderick suffers from is a sign of hyperesthesia, and how people suffering from this condition have a very acute tactile sensitivity, a feeling of burning in the skin (due to nerve damage), and peripheral neuropathy. They suffer from sensory overload in all five senses: touch, smell, sight, taste, and sound.

In Poe’s time, medicine had gone from being totally unknown and alien to the individual, the client, in the eighteenth century to being a success in the nineteenth century. This was in large part thanks to the pseudosciences, which helped the patient
have a clearer understanding of his maladies, and made what was happening to him or her much easier to explain by the doctors and by the general public. The attractiveness of the pseudosciences was primarily based on how they connected medicine and patient without the intervention of a professional practitioner, with the economic and psychological costs, submission, and objectification of the self it implied. The pseudosciences implied filling what until then was a missing link between the practitioner and the patient. They provided the common man with knowledge about medicine and science.

Many excerpts in Poe’s tales indeed look taken from the class notes of a student of medicine at that time. The lack of information and the widespread use of the pseudosciences favored the belief that one could cure a patient with one’s own power, in a mesmerist style. The medical treatises of the nineteenth century were accessible to the public. It was not uncommon to use them as a veracious source, and to be influenced by them to write works of fiction. This practice made of medicine a fictionalized art. As these doctors took medicine by their own hand, the cause and effect of this “self-made science” was a mistreatment of medicine and science, and as a result failure in medical and scientific practices.

Another of Poe’s wonderful peculiarities is how six years before the wooden prosthetic leg was patented, in 1839, he published a tale where one of its major motifs is how society loses power as technology advances: soon, machines will replace man. Knowing that Poe was so versed in science and that he had foresight in medicine changes the way we read his works today. Some of the descriptions in his stories, taken by his
contemporary critics as pure satire, were in fact describing realities that only today can be conceived as true. This dissertation has also highlighted Poe’s scientific anticipation: his medical and neuroscientific innovations, what they can teach us about nineteenth-century medicine and literature and their intersections, and what these can help us understand about Poe’s methods and thinking. Several neuroscientists have commented on how in Poe’s “The Business-Man” the frontal lobe syndrome is described eight years before Phineas Gage’s famous accident. The story also elaborates on the pediatric frontal lobe syndrome a century and half before its description in the medical literature.

Poe’s story “The Facts in the Case of M. Valdemar” (1845) is, apart from being one of Poe’s most famous hoaxes, also a genuine contribution to the fields of medical ethics and offers heavy criticism on using human subjects in medical research. This story contains perhaps the earliest complete, formal description of informed consent, and anticipates a procedure that has only recently been implemented in experiments with human subjects. It has also been studied how Poe gives the first known description of bidirectional synesthesia (Knoch et al. 372), making it another of his neuroscientific discoveries, bearing in mind that before the current millennium it was generally assumed by psychologists and neuroscientists that synesthetic associations ran only one way (a person seeing the number seven in blue would never perceive any “seven-ness” when looking up to the skies). Richard Cytowic explains that the “rare condition” of synesthesia is a mystery of cross-modal sensory experience that led him to understand the interrelationships between the neocortex and the limbic system. The limbic system acts as
dominant organ, and thus allows experiencing the sense of taste as three-dimensional geometric shapes (1).

The contribution Poe made to medicine and medical history has an enormous weight that has not been fully explored yet. For him, the sublime was connected to corporeal experiences of ecstasy and suffering—both inside and outside the practitioner’s room—and the mysteries these solitary experiences conveyed. Poe left a trace of these practices in a vast percentage of his total corpus of work. His texts, heavily loaded with criticism and analysis, have been so fruitful that no other author’s corpus of writing about science and medicine in fiction at that time has given so many hidden medical material to analyze.

Poe used primary sources for the fictionalization of that science in hope of positively transmitting it to broader audiences. His metaphorization and fictionalization of what is known as alchemical transmutation, or rather, the struggle for life of two characters in the story “Ligeia,” mixing, fusing, transmuting: turning into more perfected alchemical elements. There are only a few specific sources that discuss the scientific parts of “Ligeia.” Whether Poe borrowed ideas, practices, or procedures from actual scientific books is still unknown, and although his knowledge of alchemists such as Basilius Valentinus or Paracelsus is likely, it has yet to be proven. However, Valentinus’s second key the chrysopoetic symbolism interprets that when two elements are mixed and heated, a “vigorous reaction (a ‘fight’) does ensue” (148) and is capable of dissolving gold. “Some Words with a Mummy” shows Poe’s interest in Egypt, and leaves an obvious sign
that he was interested in the technological advances Egyptians had mastered throughout many years. Poe makes several allusions to Egypt and Egyptology throughout his works, and though they treat many topics, the one that interested him the most was conservation of the body, embalming, through chemical process. Here Poe criticizes how ancient Egyptian technologies were more advanced than those of nineteenth-century America. Poe not only mimics the language of the practitioner and the doctor, he also mimics the language of the chemist, the scientist, everybody he wants to. It is a proof of his mastery of language.

Poe transcended his contemporaries in being someone who left a trace of science in his writings, of physics, and his works have a heavy load of it. Poe uses physics in two remarkable ways. The first is to explain the devices of sight, of looking, such as telescopes, microscopes, glasses, daguerreotypes, etc.; the second is to explain the industrial revolution that was happening around him and his contemporaries, using literature as a way to explain how these machines worked and trying to envision what their future would be. Poe explained them to the public through his fiction, and also through his notes in the newspapers. Poe’s tales introduce us to a problem, a mystery, and the way to understand and solve it is through visual terms. The way in which various elements of sight, vision, perception, self-analysis, ocular tools, and points of view abound in Poe’s works suggest that exploration of any particular aspect of his work has to have perception and sight as its starting point. He even anticipated some physical phenomena that happened after his death. Poe manifested the extent of his knowledge in two ways: through serious criticism, in form of his book reviews and essays for the
newspaper, and also through his essays; and through his satirical and humoristic tales. In
his stories, the eye and the mind are compared to a room in which images of the outside
world are projected.

In *Eureka*, Poe criticizes traditional philosophy from the very beginning. He uses
the literary device of a letter from the future, written in the year 2828, and mocks Aries
Tottle (Aristotle) and Hogg (Bacon) for proposing the outmoded deductivism and
inductivism, respectively. Against deductivism he says that no truths are self-evident, and
that “no such things as axioms ever existed or can possibly exist at all” (122, his italics).
Against inductivism he comments that empirical findings never constitute, in and of
themselves without theoretical presuppositions, conclusive evidence for or against
anything. When he speaks of “telescopic observation,” for example, he says that it has to
always be guided by the laws of perspective. His most fierce criticism to both methods
can be seen in his tales of ratiocination. The presence of biology topics and treatment of
animals in Poe’s works, particularly Poe as a theorist of evolution, are topics that started
calling researchers’ attention since 1907. Although this has not been a topic with enough
presence in the spotlight, there is some research dedicated to linking Poe to the study of
evolution and presenting his evolutionary theories to his readers, in an attempt to explain
how Poe’s treatment of animals in his tales was not coincidental.

Apart from “Eureka,” we can find traces of Poe’s ideas on evolution in the stories
“The Colloquy of Monos and Una,” “The Island of the Fay” and “Mesmeric Revelation.”
Also in “Loss of Breath,” where the tale has been regarded as a narrative of involution,
where a man retells his transformation from man to amphibian in a satiric and grotesque tale mocking case studies “pertaining to the gradations of living organisms and the evolution of human species” (Autrey 189).

Poe quotes a definition of Cuvier’s class of *Entozoa* in one of his contributions to *Alexander’s Weekly Messenger* and poses the question of whether evolution is a positive or a negative thing depending on animals evolving into humans or human involution to animals. Poe’s relationship to Cuvier is not clear. In Quinn 295 and Woodberry 197 Poe states that “he translated Cuvier himself” but critics have pointed out that Poe does not explain which of Cuvier’s works he translated. In addition, Poe’s relationship to Thomas Wyatt is unclear too. Wyatt published *A Synopsis of Natural History of Animals With Human and General Physiology and Biology* in 1839, but it has been argued that it was probably prepared by “Poe, Wyatt, and Professor Henry McMurtrie much as *The Conchologist’s First Book*” during Poe’s time as a ghost writer, “in 1838 and 1839 when his fortunes were at a low ebb.”

Perhaps, the first Poe tale to come to mind when we think of Poe and evolution is “The Crimes of the Rue Morgue.” In it, Poe leaves trace of the similarities between primates and men, not only physical, but also behavioral. The story of pre-Darwinism is necessary and important in order to understand possible influences for Poe to create his own stories of evolution. Poe was influenced by Baron Cuvier, Sir Charles Lyell, Erasmus Darwin, and Auguste Comte, and placed himself among the Idealistic Morphologists. For Poe, the missing link between man and other animals was something
to theorize about and think of. This, for Poe, was the perfect terrain to explore his ideas on physiognomy and physiology. After Tyson’s work came the notorious novel by Swift, *Gulliver’s Travels* (1726), which clearly also influenced Poe.

Poe used scientific dialogue not only to make his hoaxes more believable, but also to his stories sound more savvy, and to reflect on the happenings of his era such as the nascent use of prosthetics at that time. Ultimately, this transcribed into a real interest of Poe for the scientific corpus, which translated into masterpieces such as *Eureka*.

The world-renowned neurosurgeons Eric Altschuler and Peter Brugger became very interested in this project, and not only did they help me with many important data to put this dissertation together, but we also worked hand by hand on some parts of it. The three of us are currently working on a coauthored article to be published for a more medically oriented audience. This thesis has been possible, essentially, thanks to the collaboration of “real” scientists that shed light on some aspects of scientific jargon, which are hidden to the literature layman. These collaborative efforts and interdisciplinary research and my overall academic trajectory have granted me to have an in-depth understanding of subject areas including, but not limited to, literary history, comparative literature, medicine, physics, biology, and several other historiographies. My conclusion is that, like in the nineteenth century, literature and science are two disciplines that need to be working back together and must try to fill the gap that separates them.
WORKS CITED


Campbell Stewart, F. “The Actual Condition of the Medical Profession in this Country; With a Brief Account of Some of the Causes Which Tend to Impede Its Progress, and Interfere With its Honors and Interests.” *Medical America in the Nineteenth*


Chivers, T. H. “Professor Longfellow’s ‘Hiawatha.’” Georgia Citizen. Feb. 16, 1856.


Dasgupta, Satwik. “It was open—wide, wide open”: Optics and Visual Perception in the Tales of Edgar Allan Poe, Middle Tennessee State University, Ann Arbor, 2009.


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---. Mesmerism “In Articulo Mortis.” _An Astounding & Horrifying Narrative, Shewing the Extraordinary Power of Mesmerism in Arresting the Progress of Death._
London, Short, 1846.


Rickman, Leland S, and Choong R. Kim, “‘Poe-phyria,’ Madness, and ‘The Fall of the
House of Usher.” *JAMA*, vol. 261, no. 6, 1989, pp. 863-64.


Thomson, Samuel. *New Guide to Health, or, Botanic Family Physician: Containing a Complete System of Practice, upon a Plan Entirely New: with a Description of the Vegetables Made Use Of, and Directions for Preparing and Administering Them to Cure Disease, to which is Added a Description of Several Cases of Disease Attended by the Author, with the Mode of Treatment and Cure*. Boston, J. Q. Adams, 1835.


