# THE COMPOSITOR'S REVERSAL:
# TYPOGRAPHY, SCIENCE, AND CREATION IN
# POE'S *NARRATIVE OF ARTHUR GORDON PYM*

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## ABSTRACT

Known for his tales of mystery and horror, Edgar Allan Poe (1809–49) was a meticulous, self-conscious literary craftsman. He was also skilled in the methods of science, engineering, and typesetting. Poe's writing reflected on printed letters' aesthetic effects, their ability to direct and divert meaning, and their power to build and alter worlds. In the printer's office, a limited set of material elements was manipulated to assemble infinite combinations; lining up letters in the composing stick in reverse, compositors had to arrange and read type backwards. The mirrors, doubles, and "weird symmetry" that structure Poe's plots and his theory of the universe can be traced back to these central facts of nineteenth-century typography. In his only completed novel, *The Narrative of Arthur Gordon Pym of Nantucket*—a broad canvas on which he worked out strategies later deployed in more concentrated works—typography was a crucial site for the conversions and exchanges between spirit and matter. Forging connections between the material and imaginative practice of "composition" and the cosmological uncertainties of the antebellum US, Poe's meditations on the transmutations effected by type linked literary invention, technical construction, and divine creation.

*Keywords*: Edgar Allan Poe, narrative, media, printing, apocalyptic movements, antebellum US, history of science, natural theology

### "WHAT SAY YOU, DEAR READER, TO THAT FOR A TITLE PAGE?"

During Edgar Allan Poe's short lifetime (1809–49), the book of nature was under revision. The discovery of connections among electricity, magnetism, heat, and light, and the drawing of new timelines for living things and planets stretched and restitched space, matter and time. The period also witnessed a sharp spike in the speed and density of communications, chased on by the "American system" of factories, roads, canals, and railroads. While science threatened theological certainties, the conversions of "the Second Great Awakening" cast these developments in a stark millenarian light. The world might end at any moment; the world was being remade.[2]

2. Daniel Walker Howe, *What Hath God Wrought: The Transformation of America, 1815–1848* (Oxford: Oxford University Press, 2007); Richard R. John, *Network Nation* (Cambridge, MA:

Though remembered for his tales of horror, Poe was a meticulous, self-conscious literary craftsman. Trained at West Point, he also knew the mechanical arts of the engineer. In the printing office, a finite set of material elements was manipulated to assemble potentially infinite combinations of words; Poe exploited and reflected on printed letters' aesthetic effects—their ability to convey and divert meaning and their power to make and transform worlds. The shapes formed in the contrast between black and white, between blank paper and sharply contoured ink, cleaved falsity and truth; type's endless movability and the endless reproducibility introduced by mass printing opened a wide field of philosophical puzzles. This article examines connections Poe forged between the material practice of typography and his age's cosmological uncertainties. For Poe, the transmutations effected by type fused literary invention, technical construction, and divine creation; typography was a crucial site for the conversions and exchanges between spirit and matter.

I focus on his only completed novel, *The Narrative of Arthur Gordon Pym of Nantucket*[3]—a broad canvas on which he worked out themes and strategies he would later deploy with greater intensity in his short stories. The novel appeared in a crowded and boisterous public sphere in which scientific facts, theological speculations, sentimental fictions, and cynical frauds jousted for readers' attention; an agent for *Pym*'s publisher presented it as "an American contribution to geographical science."[4]

Like Poe's other works, *Pym* exploited the fact that American science lacked solid institutional authority. Touring lecturers such as mathematician Dionysius Larder, phrenologist George Combe, and the "Storm King" James Espy explained and displayed steam engines, bumps on the skull, and the philosophy of storms in popular magazines and newspapers, in Lyceums and Mechanics' Institutes.[5] In these unregulated spaces, cautious and well-trained experts adopted the arts

Harvard University Press, 2010); Gerald J. Kennedy, *Strange Nation: Literary Nationalism and Cultural Conflict in the Age of Poe* (Oxford: Oxford University Press, 2016).

3. Edgar Allan Poe, *The Narrative of Arthur Gordon Pym of Nantucket*, with introduction by Richard Kopley (New York: Penguin Classics, 1999); see the various approaches gathered in *Poe's Pym: Critical Explorations*, ed. Richard Kopley (Durham, NC: Duke University Press, 1992), including the literature review by David Ketterer, "Tracing Shadows: Pym Criticism, 1980–1990," 233-274.

4. George P. Putnam, "Leaves from a Publisher's Letterbook." *Putnam's Magazine* 4 (October 1869), 467-74, in Dwight Thomas and David K. Jackson, *The Poe Log: A Documentary Life of Edgar Allan Poe 1809–1849* (New York: G. K. Hall, 1987), 255. On Poe and the press, see Terence Whalen, *Edgar Allan Poe and the Masses: The Political Economy of Literature in Antebellum America* (Princeton: Princeton University Press, 1999); Jonathan Elmer, *Reading at the Social Limit: Affect, Mass Culture, and Edgar Allan Poe* (Stanford: Stanford University Press, 1995); Meredith McGill, "Poe, Literary Nationalism, and Authorial Identity," in *The American Face of Edgar Allan Poe*, ed. Shawn Rosenheim and Stephen Rachman (Baltimore: Johns Hopkins University Press, 1995), 271-304; Kevin J. Hayes, *Poe and the Printed Word* (Cambridge, UK: Cambridge University Press, 2000); Leon Jackson, "Poe and Print Culture," *Poe Studies* 33, no. 1-2 (2000), 4-9.

5. Neil Harris, *Humbug: The Art of P. T. Barnum* (University of Chicago Press, 1981); Ann Fabian, *The Skull Collectors: Race, Science, and America's Unburied Dead* (Chicago: University of Chicago Press, 2010); Katherine Pandora, "Popular Science in National and Transnational Perspective: Suggestions from the American Context," *Isis* 100, no. 2 (2009), 346-358; Denis Vidal, "Les sirènes de l'expérience: Populisme expérimental ou démocratie du jugement," *Terrain* 46 (March 2006), 67-84; Michael Pettit, *The Science of Deception: Psychology and Commerce in America* (Chicago: University of Chicago Press, 2013).

of the showman and competed with self-appointed "doctors" flogging inventions, cures, and prophecies. P. T. Barnum, channeling excitement generated by the US Exploring Expedition to the South Pacific, invited visitors to decide for themselves, against the judgments of the learned, if his "Feejee Mermaid"—a monkey's upper body sewn onto the tail of a fish—was a genuine wonder or a "humbug." Shocked by the deceptions of their countrymen, scientific reformers such as Alexander Dallas Bache (great-grandson of Benjamin Franklin and a West Point graduate), Joseph Henry, and Benjamin Peirce worried that charlatanism would keep American science in a backward state. They campaigned for tightly monitored, nationwide organizations to evaluate and regulate scientific claims and keep out pretenders.[6]

To defend traditional Protestant theology against dangerous materialism, heterodox theologies, and bogus claims, many American researchers also promoted arguments of natural theology. The *Bridgewater Treatises* of the 1830s—eight books by Anglican natural philosophers—read the Book of Nature to reveal the plan and character of God. They updated the Reverend William Paley, who had argued in *Natural Theology* that every "indication of contrivance" in nature—an eye, an organism, a solar system—revealed the wisdom of "an artificer or artificers, who formed it for the purpose which we find it actually to answer; who comprehended its construction, and designed its use." The *Bridgewater* authors presented the complex mechanisms and interlocking laws of nature—in astronomy, physics, physiology, geology, natural history, and political economy—as proofs of "the Power, Wisdom, and Goodness of God, as manifested in the Creation."[7]

Poe championed the reform and progress of American science, and was one of the most vociferous supporters of the Exploring Expedition; he closely analyzed the *Bridgewater Treatises*' arguments about design. He also launched scientific hoaxes using techniques of shock, amusement, and controversy worthy of Barnum.[8] These combined and often contradictory strategies of popular science writing were both at work in *The Narrative of Arthur Gordon Pym*. Begun in Richmond, completed in New York, and published after he arrived in Philadelphia in 1838, the book has thrown up endless obstacles to readers. While critics have traced the tale's tangled sources, structure, and imagery, the typographic layout of its title page already begins to unwind a tale.

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6. Sally Gregory Kohlstedt, *The Formation of the American Scientific Community* (Urbana: University of Illinois Press, 1976); Axel Jansen, *Alexander Dallas Bache* (Frankfurt: Campus Verlag, 2011); George H. Daniels, *American Science in the Age of Jackson* (Tuscaloosa: University of Alabama Press, 1994); Robert V. Bruce, *The Launching of Modern American Science, 1876* (New York: Alfred Knopf, 1987), 205ff.

7. William Paley, *Natural Theology: Or, Evidences of the Existence and Atttributes of the Deity: Collected from the Appearances of Nature* (London: R. Faulder, 1802); Jonathan R. Topham, "Biology in the Service of Natural Theology: Paley, Darwin, and the Bridgewater Treatises," in *Biology and Ideology from Descartes to Dawkins*, ed. Dennis R. Alexander and Ronald L. Numbers (Chicago: University of Chicago Press, 2010); Aileen Fyfe, "Publishing and the Classics: Paley's Natural Theology and the Nineteenth-Century Scientific Canon," *Studies in History and Philosophy of Science Part A* 33, no. 4 (2002), 729-751; Ronald L. Numbers, *Creation by Natural Law: Laplace's Nebular Hypothesis in American Thought* (Seattle: University of Washington Press, 1977).

8. David S. Reynolds, *Beneath the American Renaissance: The Subversive Imagination in the Age of Emerson and Melville* (Oxford: Oxford University Press, 2011).
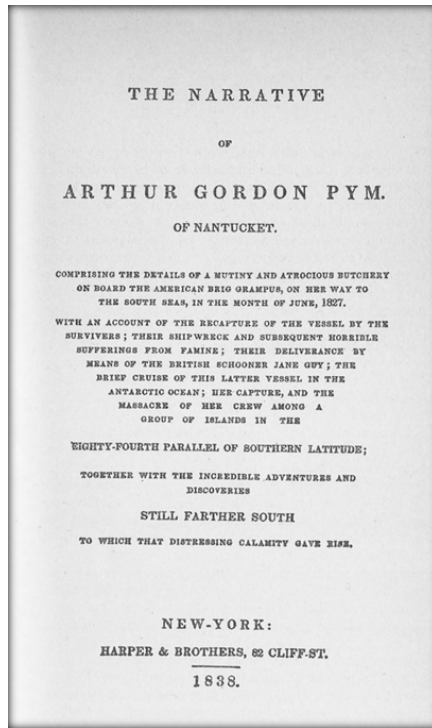
Figure 1. Title page of *Pym*, first edition (New York, Harper & Brothers, 1838).

One of *Pym's* earliest reviewers wrote, "What say you, reader, to that for a title page?"[9] The sobriety of the font and arrangement of type resemble those of Bache's *Journal of the Franklin Institute* or a *Bridgewater Treatise* more than they do a showman's exuberant playbill. Yet the shape of its serene and factual list of contents (including dates, degrees of latitude, and names of ships) hints at illustration: it may be a calligram, an image formed of words. Further, its preposterously long subtitle evokes the sensationalism of the age of Barnum, promising "a mutiny and atrocious butchery," a "shipwreck and subsequent horrible sufferings," followed by a ship's "capture, and the massacre of her crew." The reader, entertained with shock, atrocity, and horror, will be challenged to believe "incredible adventures and discoveries still farther south." The page is also remarkable for what it lacks: it doesn't mention Poe, nor that it is a work of fiction. Hovering over this unsigned and (possibly) meaningful design is the central question of natural theology: Who created it? What does this contrivance tell us about its artificer?

MIRROR EFFECTS

Throughout his career Poe was obsessed with layout and typography, as Leon Jackson has shown.[10] At the *Southern Literary Messenger* the change Poe

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9. *Alexander's Weekly Messenger*, August 22, 1838, in *Poe Log*, 253.
10. Jackson deftly connects Poe's "obsession with printedness, especially as it manifested itself in his comments on typography and typographical errors" to the culture of printing and
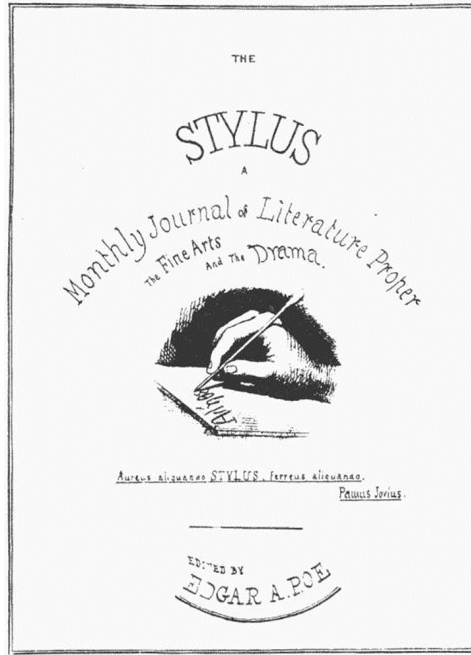
Figure 2. *Stylus* title page, 1849. By Edgar Allan Poe, from *Edgar Allan Poe: The Man*, by Mary E. Phillips (Cambridge, MA: The John C. Winston Company, 1926), sent May 23, 1849, to E. H. N. Patterson (Oquawka, IL), document held by Chicago Historical Society.

suggested to a lighter, clearer type was quickly praised: "No magazine in this country or elsewhere now excels it in the beauty of its *typography*—it is printed in the neatest manner, with the handsomest type, on the best paper."[11] Immersed in Philadelphia's culture of technical and scientific invention from 1838 to 1844, Poe raised the profile and visual standards of national magazines. In his plans for his own magazine, he insisted on "a good outward appearance—clear type, fine paper & c," and promised that "in its typography, paper, and binding—it will far surpass all American journals of its kind."

He named this magazine after sharp tools: he first called it the *Penn,* later the *Stylus*. As a prospective title page for the latter he drew a disembodied hand inscribing the Greek word for "Truth," with the type in his own distinctive hand: precise, evenly spaced letters described by contemporaries as "an imitation of printing," and "almost like engraving."[12] Poe also developed his own form of paper, gluing sheets together to form a single scroll—making it harder for the compositor to lose or misplace a sheet. With these techniques it was as

reprinting in "'The Italics are Mine': Edgar Allan Poe and the Semiotics of Print," in *Illuminating Letters: Typography and Literary Interpretation*, ed. Paul C. Gutjar and Megan L. Benton (Amherst: University of Massachusetts Press, 2010), chapter 6. For broader context, see Meredith L. McGill, *American Literature and the Culture of Reprinting, 1834–1853* (Philadelphia: University of Pennsylvania Press, 2007).

11. Jackson, "'The Italics are Mine,'" 146, note 16.

12. Mary Elizabeth Bronson, ca. October 1847, *Poe Log*, 707.

though he identified directly with the printing press, eliminating the distance between his thoughts, their mechanical realization, and, ideally, his readers.

Poe first made his name through his incisive literary criticism. Declaring war on literary cliques that "puffed" local favorites regardless of their actual merits, his precise and meticulous analyses foregrounded close (often pedantic) attention to the "technical" aspects of literary art, such as rhyme, rhythm, grammar, diction—and typography. Nicknamed the "tomahawk" in the 1840s, Poe's critical habits became so well-known that a New York magazine printed a parody of his reviews which began by attacking a book as "a mass of insufferable trash, without one redeeming quality" before observing that it was "printed in a beautiful arabesque style by Wiley & Putnam."[13] In his series "Autography"—appearing first in 1836 and renewed in 1840—he printed woodcut impressions of signatures of dozens of American literary figures.[14] "Autography" was both a publicity stunt and a printed equivalent of the new science of phrenology: a way of reading the character of the individual's mind from its physical externalizations.

Drawing attention to Poe's distinctive critical voice—by turns humorous, appreciative, understated, and devastating—the series also elevated him to the position of judge over all American literature. The *Boston Notion* complained: it was a "piece of impertinence for Mr. Edgar A. Poe to exalt himself into a literary dictator" and "under his own name deal out his opinions on American authors as authoritative."[15] Yet Poe continued to develop this role, in lectures on "The Poets and Poetry of America," the scandalous *New York Literari,* and his writing on "the science (shall we so term it?)" of literary criticism.[16] His plan for *The Penn* and *The Stylus* advocated an "absolutely independent" perspective: "a criticism self-sustained; guiding itself only by the purest rules of Art; analyzing and urging these rules as it applies them; holding itself aloof from all personal bias."[17] Poe's criticism, including the "Autography" series, was part of a larger plan to accomplish for American literature what elite science reformers such as Bache and Henry sought for American science: to review the nation's entire literary production, elevating the good, expelling charlatans and humbugs, and installing Poe as authority and judge. Such works were also part of Poe's larger campaign of public self-fashioning.

To produce a striking and memorable image of himself, he used all the age's technologies of "autography" or "self-writing," including the emerging technology of photography.[18] In 1840 Poe described the daguerreotype, then being improved and marketed in Philadelphia, as "a positively perfect mirror." These

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13. *The Town* (New York), May 17, 1845, in *Poe Log*, 534.

14. "Autography" in *The Collected Works of Edgar Allan Poe*, vol. 2: *Tales & Sketches I*, ed. T. O. Mabbott (Cambridge, MA: Belknap Press of Harvard University Press, 1978), 259-291; originally published in two series, first in 1836 in *The Southern Literary Messenger*, next in 1841–42 in *Graham's*.

15. Edwin P. Whipple in *Daily Times* (Boston), before December 18, 1841, in *Poe Log*, 354.

16. "Exordium," *Graham's Magazine*, 20, no. 1 (January 1842), 68, eapoe.org.

17. Poe, "Prospectus of the Penn Magazine," broadside, January 1, 1841, eapoe.org.

18. See, for intstance, the *Saturday Museum* (Philadelphia), February 25, 1843, with its profile of Poe, containing a biography by Henry Hirst (with autobiographical input from Poe), an autograph, and an engraving most likely based on a daguerreotype, about which Poe wrote: "I am ugly enough God knows, but not *quite* so bad as that." Poe to Thomas, February 25, 1843, *Poe Log*, 399.
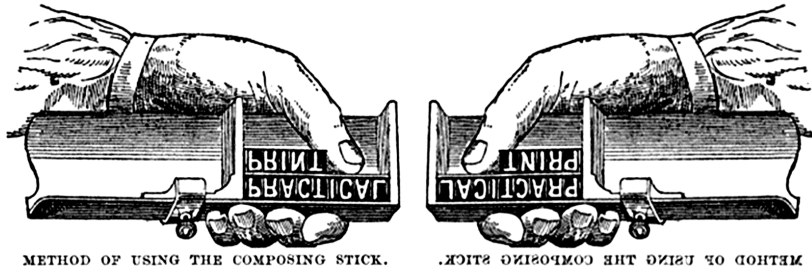
Figure 3. The compositor's reversal. Image of composing stick from John Southward, *Practical Printing: A Handbook of the Art of Typography* (London: J. M. Powell & Son, 1884, modified by author).

technologies (autograph, biography, photograph) were looking glasses in which an author's image could be sharpened, enhanced, and at times distorted, before it was projected out into the world.[19]

A mirror effect was also intrinsic to typography. One challenge of printing error-free text was that compositors had to line up letters and words in a composing stick in reverse. They had to arrange type and read it *backwards*. The mirrors, doubles, and symmetries that abound in Poe's texts can be traced back to this central fact of nineteenth-century typography. He devoted one entry of a collection of stray observations called "Omniana" to palindromes—words or series of words that used the same letters backward and forward. He included the nearly symmetrical verse of an English poet: "Lewd did I live… evil I did dwell," and a poem with enigmatic couplets whose answer "backwards and forwards is always the same."[20]

The rhetorical structure in which a series of terms is repeated in reverse order (A: B : C :: C : B: A) is *chiasmus:* "Ask not what your country can do for you, but what you can do for your country" (John F. Kennedy, Inaugural address, 1961); "My mind on my money and my money on my mind" (Snoop Dogg, "Gin and Juice," 1994). In poetic chiasmus, the second, reversed series repeats the first, but often introduces a shift in emphasis, or an ironic variation in the repetition. In such cases, chiasmus offers an *imperfect* mirror, calling attention to differences between the first and second halves. Traditionally chiasmus was a mnemonic technique. As William Engel has argued, Poe at times used chiasmus to comment upon memory itself: the form underlines how an experience, or a person, may exist at one moment, to return in thought, with refinement, intensification, and a poignant sense of loss.[21]

Yet Poe also used chiasmus to chart a movement in the opposite direction, from the interior of the mind to the external world, highlighting the mirroring— whether perfect or flawed—between a thought and its realization in matter, as in print. In *The Narrative of Arthur Gordon Pym*, the combined typographical and

19. Poe, "The Daguerreotype [parts I & II]," *Alexander's Weekly Messenger* 4, no. 3 (January 15, 1840), 2, col. 1, and *Alexander's Weekly Messenger* 4, no. 19 (May 6, 1840). eapoe.org

20. Edgar Allan Poe, «Omniana (part 02),» *Burton's Gentleman's Magazine* 6, no. 5 (May 1840), 235-236, eapoe.org.

21. William E. Engel, *Early Modern Poetics in Melville and Poe: Memory, Melancholy, and the Emblematic Tradition* (London and New York: Routledge, 2016). Max Nänny, "Chiasmus in Literature: Ornament or Function?" *Word & Image* 4, no. 1 (1988), 51-59.

psychological aspects of chiasmus went yet further, taking on theological dimensions—and furnishing a maddeningly involuted structure.

<div align="center">"AN IMPUDENT AND INGENIOUS FICTION"</div>

There is good reason to think that the book was intended to be taken, at least at first, as a factual report written by a traveler named Pym.[22] To increase the "potent magic of verisimilitude" of his fictions, Poe had learned from the realistic maritime novels of Daniel Defoe, James Fenimore Cooper, and more recent specimens including *Tom Cringle's Log* by Michael Scott and *Miriam Coffin, or the Whale Fisher,* by Joseph Hart. Yet with its precise details about ships, currents, weather, geography, scientific and economic speculations about newly discovered islands and their inhabitants, and its natural historical information about strange creatures of the sea, land, and air, Poe's *Narrative* closely resembled factual voyage accounts—an extremely popular genre. A chief example was the 1773 publication of the *Account* of Captain Cook's voyages in the South Pacific. Poe also drew upon Jeremiah Reynolds's accounts of the journeys he took while waiting for support for the Exploring Expedition—including *Mocha Dick,* which also caught Herman Melville's attention.[23] *Pym*'s publication in 1838 was timed to capitalize on growing excitement about the South Seas Expedition that Reynolds had spent the previous decade promoting. Reynolds had been convinced of the necessity of exploring the South Pole by the theories of John Symmes, "The Newton of Ohio," who claimed that the earth was hollow and habitable, open at the poles. Reynolds also argued that a South Seas expedition would raise America's standing among nations and prove the world-class character of American science. Poe championed Reynolds's cause repeatedly, and in *Pym* hoped that the expedition would "verify some of the most important and most improbable of my statements."[24]

Typography and aspects of the book's physical form also helped set readers' expectations. Michael Kearns has argued that the typography, subtitles, publisher's series, and endpapers of Melville's seafaring novels emphasized "the work's grounding in the real world"; with such material preparation, readers "could trust that the work was mostly true although certainly embellished, designed to 'delight' as well as to instruct."[25] A similar horizon was proposed by *Pym*, published in one volume by Harper and Brothers, a respectable New York house.

22. On Poe's multiple identities, see Daniel Hoffman, *Poe, Poe, Poe, Poe, Poe, Poe, Poe* (New York: Doubleday, 1972).

23. See Lisa Gitelman, "Arthur Gordon Pym and the Novel Narrative of Edgar Allan Poe," *Nineteenth-Century Literature* 47, no. 3 (1992), 349-361; Johan Wijkmark, "Poe's Pym and the Discourse of Antarctic Exploration," *Edgar Allan Poe Review*, 10, no. 3 (Winter 2009), 84-116.

24. Nathaniel Philbrick, *Sea of Glory: America's Voyage of Discovery: The US Exploring Expedition, 1838–1842* (London: Penguin, 2004); on its imperial and pro-South ambitions, see Matthew Karp, *This Vast Southern Empire: Slaveholders at the Helm of American Foreign Policy* (Cambridge, MA: Harvard University Press, 2016); Aaron Sachs, *The Humboldt Current: Nineteenth-Century Exploration and the Roots of American Environmentalism* (Oxford: Oxford University Press, 2007); William Stanton, *The Great US Exploring Expedition of 1838–42* (Berkeley: University of California Press, 1975).

25. Michael Kearns, "The Material Melville: Shaping Readers' Horizons," in *Reading Books: Essays on the Material Text and Literature in America,* ed. Michele Moylan and Lane Stiles (Amherst: University of Massachusetts Press, 1996), 57, 59.

The sober title page, with its specific facts, sets readers up for a narrative based on actual experiences. The first edition also included fourteen pages of notices about other Harpers and Brothers' books; the majority of these were factual works—travel accounts, histories, and biographies, as well as *The Book of Nature* by natural philosopher John Mason Good.[26] Such materials encouraged readers to see the book in their hands as a racy narrative grounded in facts.

In that case, its author would be "Arthur Gordon Pym." Yet the first chapters of the book had appeared the previous year in the *Southern Literary Messenger*—as fiction, signed "Edgar A. Poe." The book's short preface (signed "A. G. Pym") offered an explanation. Following an "extraordinary series of adventures in the South Sea," A. G. Pym happened to meet "several gentlemen in Richmond, Va., who felt deep interest in all matters relating to the regions I had visited" and urged him to share his experiences with the public. At first he refused: "I feared I should not be able to write, from mere memory, a statement so minute and connected as to have the *appearance* of that truth it would really possess"; further, "the incidents to be narrated were of a nature so positively marvelous" that readers would take them as simply "an impudent and ingenious fiction." Yet one of these gentlemen of Richmond—"Mr. Poe, lately editor of the Southern Literary Messenger"—argued that even if the narrative were rough, "its very uncouthness, if there were any, would give it all the better chance of being received as truth."

It is strange enough that the preface describes a quarrel between the book's fictional narrator, Pym, and its unacknowledged author, Poe; stranger yet, the topic of their debate is the best means of persuading readers of the truth.[27] Pym finally agreed to tell his story, on the condition that "Mr. Poe" would write it and publish it "*under the garb of fiction*"—hence its appearance in the *SLM*. Yet, Pym reports, despite the "air of fable" that Poe gave the account, many readers believed it to be true. Pym thus became convinced that the true facts of his journey, plainly reported, "would prove of such a nature as to carry with them sufficient evidence of their own authenticity," and that he had "little to fear on the score of popular incredulity." He resolved to tell his tale as it happened, in his own name.

Even so, throughout the book, "Pym" acknowledges that he is relating "incidents of a nature so entirely out of the range of human experience, and for this reason so far beyond the limits of human credulity, that I proceed in utter hopelessness of obtaining credence" (50).[28] To counter this suspicion of disbelief, the narrative adopts the rhetoric of facts, observation, and general information throughout. It explains, with detail and examples, the nautical term "laying to"; the difficulties of packing a boat (a passage later quoted as authoritative in a congressional report on maritime trade[29]); the curious habitation patterns of the penguin and its apparent friendship with the albatross; the Chinese market for sea cucumbers, or *biche-de-mer*, with reference to "the celebrated Cuvier" who

26. On the importance of Good's translation of Lucretius for Poe, see Sean Moreland, "Beyond 'De Rerum Natura Esq': Lucretius, Poe and John Mason Good," *Edgar Allan Poe Review* 17, no. 1 (2016) 6-40.

27. The Preface recalls Cervantes's jibes with Don Quixote, and has influenced twentieth-century "metafictions" of, for example, Jorge Luis Borges, Julio Cortazar, and Paul Auster.

28. Page citations are to the Penguin Classics edition of *Pym* cited in note 2.

29. See Kopley's introduction to the Penguin Classics edition of *Pym*.

"calls it *gasteropeda pulmonifera*" (177).[30] These tokens of factuality, offered "for the information of those readers who have paid little attention to the progress of discovery" (150), help secure an impression of reality—even as the book takes on a more distinctly *supernatural* cast in its second half.[31] Yet this deception was quickly, and at times irritably, detected. One of the first reviews, by Poe's future employer George Burton, excoriated it as an offensive hoax, using the very terms offered by Poe's preface: "A more impudent attempt at humbugging the public has never been exercised."[32]

The book's first chapter began modestly enough: "My name is Arthur Gordon Pym. My father was a respectable trader in sea-stores at Nantucket, where I was born." A first small adventure provides a microcosm for what follows: Arthur, aged seventeen, sets out one night after a party with his close friend Augustus for a "spree" in a tiny sailboat, the Ariel; they are nearly crushed by a large brig, the Penguin, which fortunately returns to save them.

Far from daunted, Pym soon lets Augustus talk him into another voyage, forming the main body of the narrative. On Augustus's father's whaler, the Grampus, Pym stows away below deck; after setting sail, he nearly suffocates in the "dismal and disgusting labyrinths of the hold." Above board, there has been a mutiny. With the help of the half-Indian, half-European Dirk Peters, and a crew member, Richard Parker, Arthur and Augustus overtake the mutineers, playing on their superstitions by dressing Pym up as the corpse of one of their victims. No sooner do Pym and his companions seize the ship than it is nearly destroyed by a storm; they drift, starving, and resort to cannibalism, drawing lots in a "fearsome speculation" in which Parker is the unhappy victim. Augustus later dies from a mortified wound, and only Pym and Peters remain.

Rescued by a passing schooner from Liverpool, the Jane Guy, they sail farther south than any previous Europeans had ever sailed and arrive at the island of Tsalal, populated by natives who are entirely black—their clothing, skin, hair, and teeth—and who are both fascinated and horrified by the white skins and sails of the Europeans, at which they cry out, "Tekeli-li!" Seeing an opportunity for "profitable speculation," Captain Guy sets up a market, trading European trinkets for the edible mollusks, *biche-de-mer,* which abound on the island. All goes well for the would-be colonizers until the Tsalalians lure the sailors into a trap, burying them in a deadly avalanche.

Pym and Peters again survive, hiding in the hills. Hunger forces them down through the black-granite chasms of the island, which trace a strange path, like letters, which Pym records (figures 1–3 in Figure 4). On one wall of the cavern they also find engraved "indentures" that resemble a pointing human (at left) and other marks (figures 4–5). They escape the island in a small canoe, taking

30. On the relation of the rhetoric of facts and literary realism, see Mary Poovey, *A History of the Modern Fact: Problems of Knowledge in the Sciences of Wealth and Society* (Chicago: University of Chicago Press, 1998).

31. In 1846, in a discussion of Defoe, he calls this "the potent magic of verisimilitude," "Marginalia (Part IV)," in *The Works of Edgar Allan Poe*, ed. E. C. Stedman and G. E. Woodberry (New York: Stone and Kimball, 1895), VII, 301.

32. William Burton in *Burton's Gentleman's Magazine* (Philadelphia), September 1838, *Poe Log*, 254.

a Tsalalian with them. As they paddle furiously away, the vessel is pulled "still farther south."

The air grows surprisingly warm and the sea turns milky; white birds fill the sky, crying "Tekeli-li!" The current increases, and white ash gently falls on their boat. Before them appears a great white waterfall. As they approach with "hideous velocity," their hostage dies of fear, and the darkness of the sky "materially increased, relieved only by the glare of the water thrown back from the white curtain before us." Rushing toward the waterfall, "a chasm threw itself open to receive us. But there arose in our pathway a shrouded human figure, very far larger in its proportions than any dweller among men. And the hue of the skin of the figure was of the perfect whiteness of the snow." There—suddenly, bewilderingly—Pym's narrative ends.

Yet a few pages remain: a mischievous "Note" closes the book, just as the "Preface" opened it. It mentions Pym's unexplained return to the US, and his recent, unexplained death. A few more chapters were rumored to remain, but they have been lost; Mr. Poe, alluded to in the third person, "has declined the task" of reconstructing them. The author of the "Note"—whom we now realize is neither "Pym" (dead) nor "Poe" (declining)—goes on to offer an incomplete explanation of the strange markings Pym found carved into the landscape on Tsalal, with reference to "minute philological science." In Egyptian, Arabic, and Ethiopian letters they appear to spell out "shady"; "white"; and "the region of the South." The "Note" (and the book) concludes with a mysterious, quasi-biblical, apocalyptic utterance: "*I have graven it within the hills, and my vengeance upon the dust within the rock*."

*Pym*'s ending—the "hieroglyphs" in the black chasms of Tslalal, the mysterious white figure in the "chasm" of spray and mist, the sudden break in the action, and the note, with Pym's mysterious return to the US, and his death—provides more questions than answers.

### "WRITTEN IN THEIR WINDINGS"

Most literally, what would the narrative have us believe actually happened to Pym and Peters? Given natural history's parallels to a detective story (a genre Poe would invent three years later with "The Murders of the Rue Morgue"), readers may seek out naturalistic causes for the "white-out" of the ending: the sailors may have been funneled into the hole predicted by Symmes's "hollow earth" theory, then drawn back up to the northern hemisphere. Or else the "white figure" was an optical illusion, the distorted image of an approaching ship—perhaps, as certain clues suggest, the very same ship, the Penguin, which saved Pym and Augustus at the book's beginning.[33] Or, reading according to conventions of biblical interpretation, perhaps we are meant to see the white figure as the outward representation—for the characters, or for us—of the unrepresentable: a mystical experience,

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33. Richard Kopley offers this  theory, backed with considerable historical documentation for both biographical and providential readings of the work in "The 'Very Profound Under-Current' of Arthur Gordon Pym," *Studies in the American Renaissance* (1987), 143-175, and his his introduction to the Penguin Classics edition of *Pym*.

Figure 1    Figure 2.
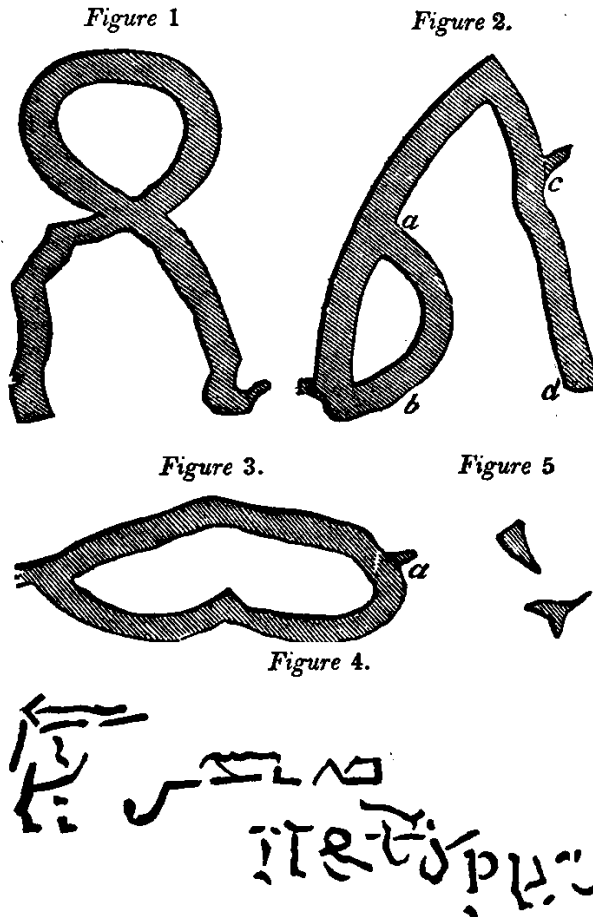
Figure 3.    Figure 5

Figure 4.

Figure 4. Engravings from Tsalal in *Pym* (1838 edition, 182-185).

or an encounter with divine truth, as in the Book of Revelations' "vision of the seven candle-sticks" with its figure with "hair of white wool." Or else we should look to the book's political context for a guide: the extreme and annihilating polarization of black and white in "the region of the South" may be an allegory of slavery and the ideology of white supremacy.[34]

34. These are just a few of the many often contradictory readings the book has inspired. To expand on just a few exegetic landmarks, Pym's frequent references to giving himself over to God, his miraculous rescues, and the book's various allusions to biblical and sacramental imagery reinforce the providential reading. Curtis Fukuchi links Pym to providential narratives such as Bunyan's *Pilgrim's Progress* ("Poe's Providential Narrative of Arthur Gordon Pym," *ESQ, A Journal of The American Renaissance* 27, no. 3 (1981), 147-156), while Kopley notes the providential structure of Defoe's *Robinson Crusoe*, in which a lost soul begins his salvation at a text's central point; David Ketterer places the narrative's conclusion within a tradition of apocalyptic writing (*New Worlds for Old: The Apocalyptic Imagination, Science Fiction, and American Literature* (Bloomington: Indiana University Press, 1974); *Pym*'s providential imagery is read as satire by David Vance in "Poe/Defoe—Pym/Crusoe: Providential Indeterminacy in 'Arthur Gordon Pym of Nan-tucket,'" *Edgar Allan Poe Review* 12, no. 2 (2011), 64-78. As a complement and alternative to the providential reading, Pym's trials throughout the book—his burials and revivals—have been seen as a mythical initiation, echoing the Arthur legend's "reunion with the white goddess" (Carol Peirce and Alexander G. Rose III, "Poe's

The book's final paragraph, decoding the chasms, invites such a range of interpretations: "Conclusions such as these open a wide field for speculation and exciting conjecture." It points out various thematic connections, in particular the clustering of white and black imagery, and warns that any solution must attend to words' physical shapes, make-up, and origins: "It is not impossible that 'Tsalal,' the appellation of the island of the chasms, may be found, upon minute philological scrutiny, to betray either some alliance with the chasms themselves, or some reference to the Ethiopian characters so mysteriously written in their windings."[35] This invitation to "minute philological scrutiny" presumably applies not just to the word "Tsalal," but to the whole book, including its final, prophetic phrase: "*I have graven it within the hills, and my vengeance upon the dust within the rock*." The sentence is typographically marked, by its quotes and italics, as coming from yet another speaker than "Pym," "Poe," or the unnamed author of the Note. Its mock-prophetic language suggests a divine source, while its reference to a "graven" message of vengeance yet again highlights the act of writing, the relationship between intention and material inscription.

This allusion to the intentions of the creator resonates with earlier hints that Pym's journey south has been a voyage into the past, toward an origin. During the wreck of the Grampus, the sailors retreated to a childish, irrational state, just as the Tsalalians appeared according to clichés about the infancy of the human race. The markings formed by the black chasms on Tsalal in ancient African languages suggest a divine imprint—a literal writing of "the book of nature"—while the "vapoury white curtain" may be a primordial "blank sheet." As Jean Ricardou put it, Pym follows a "journey to the bottom of the page."[36]

The last page's implied return to origins, and its questions about the form and arrangement of words, may also point us toward a return to the book's beginning: the title page. Although the title and subtitle list facts, the final page's invitation to "minute philological scrutiny" leads us to suspect that the black and white spaces on this first page have a meaning of their own. What is "graven" in these shapes, what is the message of the "characters so mysteriously written in their

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Reading of Myth: The White Vision of Arthur Gordon Pym," in Kopley, ed. *Poe's Pym: Critical Exploration*s, 57-74) or myths of a race of southern giants (Kent Ljungquist, "Descent of the Titans: The Sublime Riddle of" Arthur Gordon Pym," *Southern Literary Journal* 10, no. 2 [1978], 75-92); such interpretations resonate with psychoanalytic readings of a "primal return to an amniotic paradise" or a "sublime self-nullification" (Frederick S. Frank, "The Gothic at Absolute Zero: Poe's Narrative of Arthur Gordon Pym," *Extrapolation* 21, no. 1 [1980], 21-30). The figures carved into the chasms on Tslalal might be read as an obscure confirmation of the Providential hand guiding and preserving the hero, a final Divine commandment to Pym to push onward to his final purification, or as a Biblical curse on the Tslalians (and, some have argued, as a racist allegory, with Poe voicing a southerner's damnation of the African race); see Shaindy Rudoff, "'Written in Stone': Slavery and Authority in The Narrative of Arthur Gordon Pym," *ATQ (The American Transcendental Quarterly)* 14, no. 1 (2000). See Toni Morrison, P*laying in the Dark: Whiteness and the Literary Imaginatio*n (New York: Vintage, 1992); *Romancing the Shadow: Poe and Race*, ed. J. Gerald Kennedy and Liliane Weissberg (Oxford: Oxford University Press, 2001); and the satirical inversions of Poe's racial imagery in Mat Jonson's novel, *Pym* (New York: Spiegel and Grau, 2011).

35. While completing the book, Poe consulted with Columbia University's professor of classics Charles Anthon about philological questions related to Stephens's *Voyage in the Holy Land,* which he was reviewing. See Rudoff, "Written in Stone."

36. Jean Ricardou, "'The Singular Character of the Water'," *Poe Studies* 9, no. 1 (1976), 1-6.
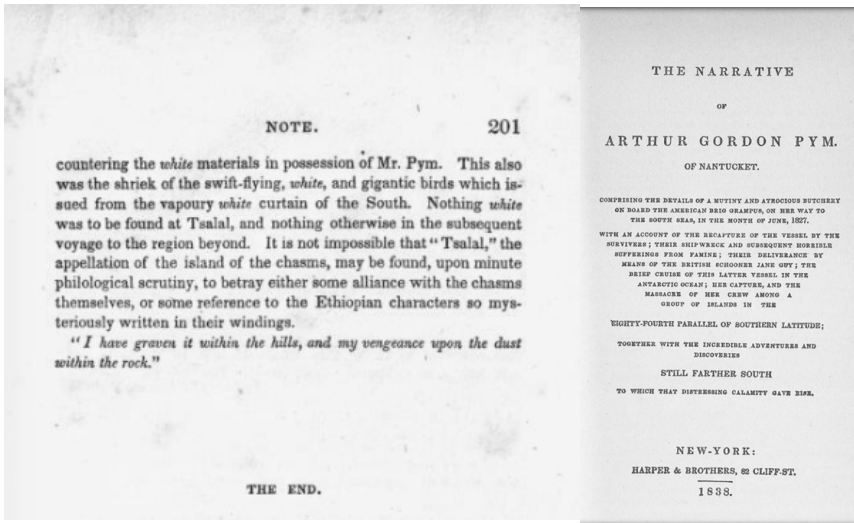
Figure 5. Last and first: final page (201) and title page of *Pym* (1838 edition)

windings?" After reading the book, we are encouraged by the unnamed author of the "Note" to go back and reread the title page—*typographically* this time, paying attention to the journey it traces on the page.

On the first page, the eight words of the title float above the denser, smaller type of the subtitle. If you look with eyes slightly unfocused, the title blocks out a half-circle, mirrored by the tapering, slightly rounded cluster of text below.[37] Under this aspect, the title and the first part of the subtitle can be seen to form the two hemispheres of a globe: the upper mostly white, the lower mostly black. Heading toward the lower extremity, the eye is pulled downward, "STILL FARTHER SOUTH" (in a larger type), funneling with some bumps and plateaus to the bottom, the publisher and date—the record of the book's birth. This brief visual voyage anticipates the route the story will trace toward the bottom of the earth, and, perhaps, to a receding point of origin, and beyond—right off the page.

Now erase that image and look again. Can you see the four lines of the title forming two rows of sails, with the subtitle clustered below as the hull of a boat? Imagine a straight line drawn *parallel* to the line formed by the words "EIGHTY-FOURTH PARALLEL OF SOUTHERN LATITUDE": you can then see the next clusters of words repeat, on a smaller scale, and upside down, the shape of the blocks of text above. Under this aspect we see a boat and its reflection, along with its sails, as if from a distance across a shimmering sea: an apt illustration for the maritime adventures about to unfold, as well as their many doublings and inversions.

The typographical arrangement of the title page thus allows at least three readings. We could just take the words as we find them, and thus as the title of a straightforward, factual account, as the page's typographical similarity to scientific

37. On Poe's constant referencing of indirect vision or looking askance, see note 23 in Laura Saltz, "'Eyes which Behold': Poe's 'Domain of Arnheim' and the Science of Vision," *Edgar Allan Poe Review* 7, no. 1 (2006), 4-30, taken from  David Brewster's lectures on optics: David Brewster, *Treatise on Optics*, ed. Alexander Dallas Bache (Philadelphia: Blanchard and Lea, 1833).

periodicals and pamphlets would suggest. But we might instead see their form trac-
ing a movement in depth and time, toward a revelation of an origin (Figure 5, a). If
we allow our eye to be captured by the forms highlighted in (Figure 5, b), we might
instead—or in addition—seek some underlying symmetry above and below, in the
surface text and its "profound undercurrent of meaning," or perhaps in the story's
first and second halves. Symmetry is strongly hinted by both the bisected globe of
(a) and the mirrored ships of (b).

   This hint bears rewards. Although some critics have bewailed *Pym* for an appar-
ent lack of narrative coherence, it possesses a remarkably consistent formal struc-
ture.[38] As in chiasmus and the "compositor's reversal," in *The Narrative of Arthur
Gordon Pym*, elements of the first half are repeated in reverse order in the second
half. The book has twenty-five chapters, with the Preface and Note forming sym-
metrical bookends: at its center is chapter thirteen, with twelve chapters before it
and twelve after. The broad clusters of action and the vessels on which Pym travels
also match up between the first and second halves. In the first chapter, Pym sails
on a small boat, crashes, and is saved; in the last chapter, he is again on a small
boat that charges into the white curtain, yet he lives. In chapters 2 through 7 Pym
is onboard the large boat, the Grampus, where he hides below deck, and must team
up with Peters to rout the mutineers; in the parallel chapters of the second half, 19
to 24, he sails on another large boat, the Jane Guy, he is buried, and he and Peters
contend with the deadly conspiracy of the inhabitants of Tslalal.

   In chapters 8 through 12, Pym and Peters drift aimlessly *north* of the Equator,
culminating in a cannibalistic feast, a grotesque Last Supper. In the middle
paragraph of chapter 13—the center of the book's central chapter—the Grampus
crosses the Equator, and Pym's friend and second self, Augustus, dies. The ship
then flips over, as if to herald the reversal of the direction of the plot: Pym and
Peters feast on its barnacles until they are rescued by the Jane Guy. A figurative
rebirth occurs in chapter 14 with the ship's departure from Christmas Harbor
(paralleling the horrific parody of the cannibalistic Easter feast in chapter 12).
They now drift *south* of the Equator, among islands whose plentiful food is the
inverse of their former deprivations—until they arrive at "Tsalal" at "last" (the
reversed word hidden in the island's name) in chapter 18. As in the compositor's
reversal, the story literally folds back on itself.

   But although the symmetrical structure of *Pym* has been noted for some time,
no one to my knowledge has yet considered what we can see as the outermost
layer of the onion: the relationship between the 120 words on the title page and

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38. Joseph V. Ridgely and Iola S. Haverstick. "Chartless Voyage: The Many Narratives of Arthur
Gordon Pym," *Texas Studies in Literature and Language* 8, no. 1 (1966), 63-80; *Poe's Pym: Critical
Explorations*, ed. Richard Kopley (Durham, NC: Duke University Press, 1992). *Pym*'s combination
of interpretive multiplicity with a rigorous hidden structure is what has made it both so frustrating
and so appealing to critics. G. R. Thompson writes, in an essay tracing Poe's debts to Schlegel's
"arabesque": "Despite the astonishing range of readings, what emerges from all the critical atten-
tion is that there is in *Pym* a coherent and symmetrical structure of events that generates a haunting
ambiguity. Once regarded as an unfinished or hastily finished mistake, the arabesque romance of
*Arthur Gordon Pym* exemplifies Poe's method of resonant indeterminateness and his affinities both
with modernism and postmodernism." "Poe and the Writers of the Old South," in *Columbia Literary
History of the United State*s, ed. Emory Elliott (New York: Columbia University Press, 1988), 274,
in Kopley, ed., *Poe's Pym*.

Figures 6 and 7. *What do you see? (a) A bisected globe, with a journey tapering down-
ward; (b) A ship sailing above its ghostly double.*
(*Pym* 1838 title page, modified by author)

the 110 words of the final page.[39] Reading backwards, the final page urges readers
to apply "minute philological scrutiny" to Tslalal and the shapes in its chasms—
*images of a journey* that may form *words*. If we go back and apply this scrutiny
to the title page, we discover a chiastic counterpart: *words* that may form *images
of a journey* (B:A::A:B).[40]

Retracing the book's journey forward—once we realize that it is also a journey
backward—reveals more parallels between matching chapters, far more than we
can examine here. Yet a distinct pattern becomes visible. Just as the final note can
be read as giving a partial commentary on the markings of the title page, so are
images or notions from the first half repeated in the second half—though modi-
fied, enlarged, or reversed. In chapter 1, for instance, Pym speaks of the perverse
wishes that drove him to sea: "For the bright side of the painting I had a limited
sympathy. My visions were of shipwreck and famine; of death or captivity among
barbarian hordes." In the parallel chapter at the end, the 24th, Pym hangs from a

39. *Pym*'s mirror-structure is elaborated with increasing detail in Charles O'Donnell, "From Earth
to Ether: Poe's Flight into Space," *Publications of the Modern Language Association of America* 77,
no. 1 (1962), 85-91; David Ketterer, "Devious Voyage: The Singular Narrative of A. Gordon Pym,"
*ATQ*, 37 (1978), 21-33; Kopley, "The 'Very Profound Under-Current' of Arthur Gordon Pym."

40. See John T. Irwin, *American Hieroglyphics: The Symbol of the Egyptian Hieroglyphics in
the American Renaissance* (New Haven: Yale University Press, 1980) and Irwin, *The Mystery to a
Solution: Poe, Borges, and the Analytic Detective Story* (Baltimore: Johns Hopkins University Press,
1994), which both see Poe's works as allegories of writing, and the play between white and black in
*Pym* as addressing the material fact of blank pages and printed type.

| First Half (chapters 1-12)<br>Moving *to* midpoint (ch. 13)<br>↓↓↓ | Second Half (chapters 14-25)<br>Away *from* midpoint (ch. 13)<br>↑↑↑ |
|---|---|
| Title Page: *Ambiguous typography, calligram: words form image of a journey* | Final Page: *Ambiguous earth-hieroglyphics: images of a journey form words* |
| PREFACE: Pym takes over writing from Poe. | NOTE: Pym returns, dies. Poe abandons book; unnamed author takes over. |
| CHAPTER 1. *ARIEL*: Small boat (spirit). Crushed and saved by Penguin. | CHAPTER 25. *CANOE*: Small boat (earth). Annihilating white figure/curtain. |
| 2-7 *GRAMPUS*: Large boat (animal).<br>Pym plots to overthrow mutineers; he is hidden on board and released.<br>2: "visions of shipwreck & famine"<br>3: Augustus's note | 19-24 *JANE GUY* Large boat (human)<br>Tsalal's inhabitants plot against sailors; Pym is buried beneath earth and released<br>24: "fancies create realities"<br>23: letters in the chasms |
| 8-12. Drifting and prospecting above equator<br>8: Confronts mutineers.<br>12: Starvation, infantilization, cannibalism—*Easter*. | 14-18. Drifting and prospecting below equator<br>18: Meets Tsalalians.<br>14: Rebirth, return to rational faculties—*Christmas*. |
| **Chapter 13: Midpoint/ Fold/ Reversal**<br>Grampus crosses equator, Aug. 1; at noon, middle paragraph, Augustus dies.<br>Boat flips. Pym and Peters leave Grampus/ enter Jane Guy.<br>"so strictly comparative is either good or ill" ||

Figure 8. The mirrored structure of Pym. Table by author.

ledge and imagines himself falling to his death: "I found these fancies creating their own realities, and all imagined horrors crowding upon me in fact." By that point, most of his gloomy visions have come true, his "fancies" really have created "their own realities," as though his thought and expectations were realized in matter. A cryptographic theme is explicit in chapter 3 when Pym struggles to decode a note Augustus sends him below deck, saving him from "the jaws of the tomb"; symmetrically, in chapter 23, he struggles to make sense of the "singular looking indentures" (jaws) which form in the chasms of Tsalal—inscribed this time not by humans but, perhaps, by the incisions of a supernatural agent.

It is as if in the second half of the book, Pym is walking through the shadow—or the blurred imprint—of the events of the first half. He encounters his previous thoughts and fantasies, but transmuted, magnified, distorted, turned upside down, fused with the landscape. As Poe would later write of a consummately designed landscape garden, "The thought of Nature still remained, but her character seemed to have undergone modification: — there was a weird symmetry, a thrilling uniformity, a wizard propriety."[41]To speak in terms of the technologies of the popular science of his day (with which Poe was intimately familiar), it is as though the earlier events have been passed through a distorting mirror, a magic lantern, a *camera obscura*—or a metaphysical printing press.[42] Material reality is engraved, imprinted, and distorted with traces of mind.

41. "The Domain of Arnheim," *Columbian Magazine* 7, no. 3 (March 1847), 123-129 (eap-oe.org).
42. On Poe's optical technologies, see Saltz, "'Eyes Which Behold,'"; Roberta Sharp, "Poe's Chapters on 'Natural Magic,'" in *Poe and His Times: The Artist and His Milieu*, ed. Benjamin

Yet whose mind do we come to know by studying these altered realities? Pym's? Poe's? Our own? Or the creator of all?

WRITING BACKWARDS

*The Narrative of Arthur Gordon Pym* received positive reviews but was not the critical or financial success Poe hoped. In his subsequent tales—the basis for his reputation today—he repeated *Pym's* techniques and themes but in a more condensed, concentrated form. For example, "The Fall of the House of Usher," the prototype of the late-gothic tale of horror, written a year after *Pym,* employed a mirrored, chiastic structure, as well as noting the presence in Usher's library of the "Subterranean Voyage of Nicholas Klim" by Ludvig Holberg.[43] The narrator approaches the title's house and sees it reflected in the lake; he encounters Roderick Usher and describes his illness; he meets Roderick's sister, Madeline; a poem is read aloud, likening a diseased mind to a haunted manor. At the center and pivot of the tale, Madeline Usher dies and is buried. The tale then retraces the earlier scenes in reverse: another text is read aloud (a chivalric adventure); Madeline returns, wrapped in her winding sheet; Roderick's illness reaches its crisis and he collapses; the narrator flees the house, which he sees sinking into its own image, reflected in the lake.

More than just a structural principle, the mirroring of objects and mental states is an explicit theme of "Usher." In the opening paragraph, the narrator notes that with "the first glimpse of the building, a sense of insufferable gloom pervaded my spirit," yet observes that "a mere different arrangement of the particulars of the scene, of the details of the picture, would be sufficient to modify, or perhaps to annihilate its capacity for sorrowful impression." The emotional *impression* on the narrator (and on the reader) is an *imprint* of the specific *composition* of physical elements (bricks, or letters). The poem-in-the-tale, "The Haunted Mansion," figures a disordered mind as a haunted house, just as "Usher" is at once the mansion, the character, and the family lineage. Most pointedly, while Madeline Usher is a double of her brother, her very name suggests the transfer and uneasy mirroring between a living person and written or "engraved" letters: the Lady Madeline is a *"lady made line,"* a woman transformed into print, entombed then reanimated through the process of reading, laid to rest again when the pages turn.

Poe's pioneering detective stories, "The Murders in the Rue Morgue" (1841) and "The Purloined Letter" (1844), also follow a chiastic structure, as Kopley has demonstrated. Not only were they written backwards—Poe had to know the

Franklin Fisher, IV (Baltimore: The Edgar Allan Poe Society, 1990), 154-166; William J. Scheick, "An Intrinsic Luminosity: Poe's Use of Platonic and Newtonian Optics," in *American Literature and Science*, ed. Robert J. Scholnick (Lexington: University Press of Kentucky, 1992), 77-93; John Tresch, "Estrangement of Vision: Edgar Allan Poe's Optics," in *Observing Nature—Representing Experience: The Osmotic Dynamics of Romanticism*, ed. Erna Fiorenti (Berlin: Dietrich Reimer Verlag GmbH, 2009).

43. See the illuminating discussion of Holberg's fantastic voyage, *A Journey to the World Under-ground*, and its influence on Frankenstein, in Patricia Fara, "Educating Mary: Women and Scientific Literature in the Early Nineteenth Century," in *Frankenstein's Science: Experimentation and Discovery in Romantic Culture, 1780-1830*, ed. Christa Knellwolf King and Jane R. Goodall (London: Ashgate, 2008), 17-32.

solution before he could plant the clues—but they repeated imagery and phrasing from their start at their ending, and pivoted on an image at their formal center: the nail on the window of the locked room, the exchange between Dupin and the Prefect of a check for the stolen letter.[44] Both also required Dupin to decode a text by considering not only the laws of language, but its setting and the obstructions to its legibility: he found the purloined letter by realizing that its hiding place (in plain sight) followed reflection on ordinary habits of thought; he identified the simian murderer in the Rue Morgue because its "language" was misunderstood by speakers of several tongues. In "A Tale of the Ragged Mountains" (1844), another tale with a "Pym-esque" mirrored structure, the compositor's reversal became a plot point. The narrator's friend Bedloe appeared to take on the soul and consciousness of an English soldier who had died years earlier, with events of his life replaying those of this predecessor; when the narrator saw their names in print, he realized that the name Bedloe was the reverse, the near-palindrome of the soldier's name, Oldeb. "A mere typographical error!" scoffed the narrator, clued in to a deeper identity between the two men.[45]

After *Pym's* publication, Poe also wrote a series on cryptography, in which he challenged readers to send coded texts for him to decipher.[46] Deciphering an encrypted message involves applying knowledge of linguistic regularities—the frequency of letters and combinations, repeated short words—to read a message that is designed to be misunderstood by all but the intended reader. Encryption, conversely, requires systematically substituting one set of material signs (standard letters, numbers, and punctuation) for another arbitrarily defined set (the code). Poe was painfully aware that substitutions of one letter for another could happen by accident, creating the same effect of mystery as an encrypted message. In a comic tale, "X-ing a Paragrab," set in the printing office of a western periodical, the replacement of one letter for another—x's for o's—transformed an impassioned editorial into a "mystical and cabalistical article." To the publisher of the first version of "The Domain of Arnheim"—ironically, a paean to a visionary artist's holistic sensibility and absolute aesthetic control—he wrote: "but, oh Jupiter! the typographical blunders. Have you been sick, or what is the matter?"[47] Desperate for money, he sold the same hapless editor his most formless tale of detection, "The Mystery of Marie Rogêt," with a plea: "for God's sake contrive to send me the proofs; or, at all events read them yourself. Such errors as occur in

44. See Richard Kopley, *Edgar Allan Poe and the Dupin Mysteries* (Berlin: Springer, 2008), 94; the central image of "The Purloined Letter" was earlier observed by Ross Chambers in "Narratorial Authority and 'The Purloined Letter,'" in *Story and Situation: Narrative Seduction and the Power of Fiction* (Minneapolis: University of Minnesota Press, 1984). "The Tell-Tale Heart" also follows a chiastic structure.

45. Richard Kopley, "Poe's Pym-esque 'A Tale of the Ragged Mountains'," in *Poe and His Times: The Artist and His Milieu* (Baltimore: The Edgar Allan Poe Society, 1990), 167-177; the tale is related to wider issues of popular belief and deception in Emily Ogden, *Credulity: A Cultural History of US Mesmerism* (Chicago: University of Chicago Press, 2018).

46. See Terence Whalen, "The Code for Gold" in *Edgar Allan Poe and the Masses*, 195-244; Shawn Rosenheim, *The Cryptographic Imagination: Secret Writings From Edgar Allen Poe to the Internet* (Baltimore: Johns Hopkins University Press, 1997).

47. Poe to Robert Hamilton, October 3, 1842, *Poe Log*, 382-383.

the 'Landscape- Garden' would completely ruin a tale such as 'Marie Rogêt.'"[48] As detection tales depended on tracing exact facts backward to an original crime, typographical fidelity was of utmost importance.

If cracking the code of the Rosetta Stone brought eternal glory to Champollion, dramatizing cryptography briefly saved Poe from bankruptcy. His 1843 tale "The Gold-Bug" featured the decipherment of a coded message written in invisible ink, with directions to a buried treasure—and won him a $100 prize. To create the coded message, a location in a physical landscape was translated into a map and a verbal description, then translated into a series of letters, numbers, and typographical symbols. To reach the "pot of gold," Legrand had to retrace this chain of material and symbolic transformations backwards. In these tales and articles, Poe reworked and concentrated the strategies and themes of *Pym:* structural mirroring, writing backwards, encoded and ambiguous print, and the use of scientific language and facts to heighten mystification.

In his 1845 essay "The Philosophy of Composition," Poe elevated backwards writing to a manifesto of literary creation. Poe purported to reveal the "rigorous method" through which he composed his hit poem, "The Raven": "It is my design to render it manifest that no one point in its composition is referable either to accident or intuition."[49] He started with the end—"It is only with the *dénouement* constantly in view that we can give a plot its indispensable air of consequence, or causation"—and showed how each aspect of "The Raven"—rhythm, music, word-choice, imagery, structure—worked together to produce "the vastly important artistic element, totality, or unity, of effect." With a title echoing the popular lecturer Andrew Ure's *The Philosophy of Manufactures,* the essay's confident, precise, and technical language carried out Poe's earlier proposed demonstration of the "application of a rigorous *method* in all forms of thought—of its advantages—of the extension of its use even to what is considered the operation of pure fancy."[50]

Yet the title also played on the doubled meaning of "composition"—both the poet's imaginative design *and* the typographical assembly of words. The essay thus lifted the compositor's reversal to the level of poetic form: composing from the beginning with "the *dénouement* constantly in view," or writing plots backward—employing chiastic, mirrored structures, carefully plotting the route back from a final revelation through the clues that led to it—were all forms of lining up elements in the reverse order to that in which they were realized. His explanation of how he accomplished the poem's effect introduced another mirroring: his explanation would have to reflect both the plan and the realized work in an analytic, scientific idiom.

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48. "Chapter 05," in *The Collected Letters of Edgar Allan Poe—Vol. I: 1824-1845*, ed. J. W. Ostrom, B. R. Pollin, and J. A. Savoye (Staten Island, NY: Gordian Press, 2008), 365.

49. Edgar Allan Poe, "The Philosophy of Composition" [Text-02], *Graham's Magazine* 28, no. 4 (April 1846), 163-167, eapoe.org.

50. Edgar Allan Poe, "A Few Words on Secret Writing," *Graham's Magazine* 19 (July 1841), 33-38. eapoe.org; Andrew Ure, *The Philosophy of Manufactures, Or an Exposition of the Scientific, Moral and Commercial Economy of the Factory System of Great Britain*, 2nd ed. (London: Charles Knight, 1836).

With perfect knowledge or tools, the match between the mirror and the thing it reflects—between a chiastic work's two halves, between the design and its realization, or between an observed contrivance and the explanation of how it was made—would be exact. But the compositor's reversal also brought transcription errors: letters were dropped, misplaced or flipped. Just as *Pym's* two halves formed a "weird symmetry" rather than a perfect reflection, the mirror "The Philosophy of Composition" held up to "The Raven" was distorted by the weight of its implausibility. Could Poe have really written this extravaganza by following a pre-established plan and *a priori* rules, knowing, before setting pen to paper, how it would conclude?

As he acknowledged, a claim of method could itself be a form of mystification; he said of his tales of ratiocination, "people think them more ingenious than they are—on account of their method and *air* of method."[51] "The Raven," first published under a pseudonym, prompted giddy speculation about its author; this wonder was followed, in "The Philosophy of Composition," by an equally miraculous claim that it had been assembled, not by inspiration, nor by trial and error, but "with the precision and rigid consequence of a mathematical problem." Yet if Poe's claim of absolute literary control is false, in another sense it is true: "The Philosophy of Composition" is itself a highly controlled, artfully designed literary stunt, written with its effect "constantly in view."

A reader wrote Poe asking for the secret to his success at code-breaking: "Come, be a philanthropist, and dispel the mystery that shrouds your magic wand, and don't ''stonish the natives' any longer."[52] Like *Pym's* credulous Tslalalians, or its even more credulous European sailors—or again, like the *Bridgewater Treatises'* natural theologians who traced "the Power, Wisdom, and Goodness of God, as manifested in the Creation"—Poe's readers were first astonished by his contrivances, then awed by the foresight of their creator, as pointed out by his authorized interpreter (in this case, Poe himself). They might then be drawn to marvel at the mockery Poe seemed to make of the entire procedure of reducing miraculous productions to material and mechanical designs. Poe's signature effect was an exclamation point followed by a question mark: a striking literary performance, followed by the question, "How did he do it?" His equally astounding explanations raised a next round of uncertainties—clouds of smoke pointing always back to the mystery of Poe himself.

CRACKING THE CREATOR'S CODE

Poe's last book, *Eureka: An Essay on the Spiritual and Material Universe* (1848), declared that symmetry "is the poetical essence of the Universe—*of the Universe* which, in the supremeness of its symmetry, is but the most sublime of poems." As if to draw attention to the excruciating complications of any attempt to summarize the cosmos, he insisted that unlike human artworks, "The plots of God are perfect. The Universe is a plot of God." The universe was a plot written

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51. Poe to Phillip P. Cooke, August 9, 1846, *Poe Log*, 661.
52. Poe, "Our Puzzles—Again!" A*lexander's Weekly Messenger*, February 19, 1840, eapoe.org.

backwards, with "the end of all things metaphysically involved in the thought of a beginning."[53]

To return to our starting point, we might close by considering some of the natural theological twists of the *Narrative of Arthur Gordon Pym* and their grounding in the imagination of engraving and typography. The novel delighted in showing the superstitious wonder with which both Europeans and South Sea Islanders greeted strange phenomena. On the Grampus, Poe dressed up as a corpse to take advantage of the superstitions of the mutineers; seeing himself in a mirror, he fainted, taken in by his own illusion. The scene was paralleled later when the chief of Tsalal appeared ready to "expire upon the spot" on seeing himself repeated to infinity between two mirrors on board the Jane Guy. Though Pym called his experiences on Tsalal a "chain of apparent miracles," his experiences of wonder were accompanied by the natural theologian's insistence on finding "design" at every turn. Strange phenomena were closely examined, with the question always hovering as to their actual causes: nature, artful human deception, or supernatural intervention. After the avalanche, the ground was "strewn with huge tumuli, apparently the wreck of some gigantic structures of art; although, in detail, no semblance of art could be detected"; the granite pit on Tsalal was so strange and singular that "we could scarcely bring ourselves to believe it altogether the work of nature"; looking at the final set of "indentures," Peters was convinced they were intentionally carved, whereas Pym believed them "the work of nature." The closing "Note" concluded that the characters graven in the chasms did indeed have meaning, yet it did not offer their source or cause.

The same doubt may be applied to my own "discovery" of patterns in the layout of *Pym*'s title page: although a reading of the title and subtitle as either a globe or a reflected ship may be plausible, there is no way of knowing for certain that Poe actually guided the compositor to realize these meanings. More generally, Poe's interpreters often must wonder whether the apparent meaning and connections they discover are really intended, or mere byproducts of the paranoid sense of a superabundance of significance that Poe's writings induce.[54]

There is no doubt, however, that Poe planned to create doubts: *Pym* was firmly set in a key of ambiguity, reversibility, and relativity. In the pivotal thirteenth chapter, Pym calmly reflected on the horrors he underwent in the book's first half: "the infinitely more terrible distresses and dangers from which we had so lately and so providentially been delivered caused us to regard what we now endured as but little more than an ordinary evil—so strictly comparative is either good or ill." The movement of the book repeatedly drew attention to the "comparative" (or, "relative," in twentieth-century terms) character of benefit and harm, reason and ignorance, light and darkness.[55] This theme of the pairing, potential equivalence,

53. Edgar Allan Poe, *Eureka* (1848), edited by Stuart Levine and Susan F. Levine (Urbana: University of Illinois Press, 2004), 96, 86, 99; see Barbara Cantalupo, "Preludes to *Eureka*: Poe's 'Absolute Reciprocity of Adaptation' in 'Shadow' and 'The Power of Words,'" *Poe Studies/Dark Romanticism* 29, no. 1 (1996), 17-21.

54. For an epitome of the delirious pleasures of over-interpreting Poe, see David Ketterer, "'Shudder': A Signature Crypt-ogram in 'The Fall of the House of Usher,'" *Resources for American Literary Study* 25, no. 2 (1999), 192-205.

55. Christopher Herbert, *Victorian Relativity: Radical Thought and Scientific Discovery* (Chicago: University of Chicago Press, 2001). This emphasis on reversibility and "comparative" values is largely

and interchangeability of opposites was echoed in the book's many doublings—between Pym and Poe, between Pym and Augustus, between the book's two halves. The mirroring between the Jane Guy's sailors and the Tslalalians further makes the book's possible racial allegory one of equal damnability: Pym and his fellow Christians are cannibals, and the black natives turn out to be neither more nor less savage or credulous than the insatiable white speculators.

Just as the ambiguous word-images of the title page mirrored the ambiguous hieroglyphs carved into the earth on Tslalal, *Pym*'s final line, "*I have graven it in the hills, and my vengeance on the dust within the rock*," may announce, like an encoded treasure map, that a "close philological scrutiny," which unearths meanings buried in the novel's events, will be rewarded. Perhaps one can find in Pym's many sufferings evidence that God created not out of generosity and benevolence but out of "vengeance." Poe raised the possibility that creation was a cruel joke upon the creature in his "Rationale of Verse," as part of an explanation of the difference between "natural" and "artificial" meter:

> Can it be fancied that Deity ever vindictively
> Made in his image a mannikin merely to madden it?[56]

Perhaps, even crueler, the "vengeance" of the creator may be that the "semblances of art" strewn throughout the landscape are clues with no solution.

Poe's vision in *Eureka* of a perfectly symmetrical cosmos contrasted with the chaos he saw around him. In the early US, with its roaring flood of publications and reprints, its slavery and simmering violence, its unregulated speculations, and its unsettled claims for truth—scriptural, empirical, prophetic, manifest—the alignment between the world and statements about it was far from complete. While holding up a distant ideal of perfect and providential symmetry, Poe's writing opened between the mirrored image and the thing being reflected a space of error, mystification, and imaginative elaboration. We have seen him borrowing strategies of deception and public controversy from P. T. Barnum, while at the same time advancing plans for a national framework for independent, technical literary criticism that echoed the schemes of the scientific reformer Alexander Bache and his friends. The two strategies seem contradictory: Was he a champion of austere, civic-minded rationality, or a flimflam artist? Yet we can also see them as complementary. Just as every good hoax summoned a rational debunker, science could only advance with the aid of imagination, the arts of persuasion, and the unreliable media of the senses and the press.

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in agreement with Dana Nelson, "Ethnocentrism Decentered: Colonialist Motives in *The Narrative of Arthur Gordon Pym*": "while on one level *Pym* is a racist text, on another the text provides a reading that counters racist colonial ideology and the racialist, scientific knowledge structure" (92); "The narrative emphasizes the material effects of colonial ideology while it undermines the pretensions of colonial knowledge to disinterested objectivity" (107). In Dana Nelson, *The Word in Black and White: Reading "Race" in American Literature, 1638–1867* (Oxford: Oxford University Press, 1992).

56. In "The Rationale of Verse," *The Works of Edgar Allan Poe*, ed. John H. Ingram (Edinburgh: Adam and Charles Black, 1875), III, 234; Jerome McGann calls Poe's couplet a "piece of doggerel verse so impishly suggestive that it attains real poetic force. We can, indeed we do, imagine that a divinity might act so vindictively. At the same time, we can imagine otherwise" (McGann, *The Poet Edgar Allan Poe: Alien Angel* [Cambridge, MA: Harvard University Press, 2014], 88).

Using the technologies, rhetorical conventions, and established facts of his time, Poe hoisted up a set of questions that could not be answered with certainty. *Pym's* meaning was a definite mystery. Its precise ambiguity was made possible by the unsettled print capitalism and settler colonialism of the antebellum US—a nation whose contradictions were on the verge of eruption. Poe's doubts about the benevolence of the creation, the knowability of the creator, and the inevitability of progress could manifest with exquisite sharpness thanks to both the fixity and the mutability of type.

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