The Cryptographic Imagination

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Introduction

All longing converges on this mystery: revelation, unraveling secret spaces, the suggestion that the world's valence lies just behind a scrambled facade, where only the limits of ingenuity stand between him and sunken gardens. Cryptography alone slips beneath the cheat of surfaces.

Richard Powers, *The Gold Bug Variations*

But this is, now,—you may depend upon it—
Stable, opaque, immortal—all by dint
Of the dear names that lie concealed within't.

Edgar Allan Poe, "An Enigma"

The origin of this book might be described as an attempt to answer a presumably straightforward question: what is the source of the worldwide popularity of detective fiction? As I was hazarding an answer, however, my study accreted to itself a series of apparently unrelated questions: what is the relation of science fiction to the prosthetic body? How was the American defeat of Japan in World War II influenced by the work of Sir Francis Bacon? Why does communication on the Internet so frequently invite flame wars? And, most frivolous-sounding of all, how can we know who wrote Shakespeare's plays? It is my contention that all these questions can be illuminated by the writing of Edgar Allan Poe, and more specifically, by that subset of his work that makes direct or oblique use of codes and ciphers. From 1839 to his death a decade later, Poe expressed his growing passion for cryptography in a variety of genres. Besides "The Gold-Bug"—which, as a stimulus to future cryptographers, might be said to be one of the few literary texts with military value—Poe's cryptographic writing includes the Dupin trilogy, his science fiction, the "Marginalia," and *Eureka*. Although this secret writing includes some of Poe's best-known work, its importance is greater than the literary value of the individual texts; as an *oeuvre*, these texts amount to one of the deepest instances of what I call the cryptographic
imagination—an approach to literature that, in the century and a half since Poe’s death, has become increasingly influential.

My ambition in what follows is to explain contemporary culture (or at least one important version of that culture) as a set of variations on the cryptographic imagination as it yokes together literature, technology, and society. As used in this book, the term “cryptographic imagination” does not only refer to the relatively few stories that, like “The Gold-Bug” or Robert Louis Stevenson’s *Treasure Island*, explicitly include ciphers or codes. Instead, it refers to a constellation of literary techniques concerning secrecy in writing. These include private ciphers, acrostics, allusions, hidden signatures, chiasmal framing, etymological reference, and plagiarism; purloined writing and disappearing inks; and the thematic consequences—anonymity, doubling, identification, and the like—that follow from cryptographic texts.

I am equally concerned with the ways writers have incorporated aspects of “real” cryptography into their texts, either by directly employing ciphers or by generating fictions that respond to cryptographic institutions such as the National Security Agency (NSA). Poe, for example, was from adolescence interested in crypts, writing, and the relation between the two, but his sense of the scope and implications of that relation greatly expanded after December 1839, when he began submitting a series of unsigned pieces on cryptography and conundrums to a short-lived Philadelphia newspaper, *Alexander’s Weekly Messenger*. In the first of these pieces, “Enigmatical and Conundrumical,” Poe promised “that if any reader submitted an example of secret writing in which arbitrary symbols were substituted for letters of the alphabet, no such cipher could be propounded which he would be unable to solve.” For the next five months, Poe published solutions to what he maintained were all the ciphers that had been submitted to him, along with some explanations of the nature of cryptography. In May 1840, Poe’s association with the newspaper ceased, but he returned to the subject a year later, publishing a long signed article in *Graham’s Magazine* entitled “A Few Words on Secret Writing” (July 1841). Here Poe gives his account of the articles from *Alexander’s*:

In one of the weekly papers of this city, about eighteen months ago, the writer of this article had occasion to speak 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—and thus, subsequently, of the solution of cipher. He even ventured to assert that no cipher, of the character above specified, could be sent to the address of the paper, which he would not be able to resolve. This challenge excited, most unexpectedly, a very lively interest among the numerous readers of the journal. Letters were poured in upon the editor from all parts of the country; and many of the writers of these epistles were so convinced of the impenetrability of their mysteries, as to be
at great pains to draw him into wagers on the subject. . . . Out of, perhaps, one hundred ciphers altogether received, there was only one which we did not immediately succeed in solving. This one we demonstrated to be an imposition—that is to say, we fully proved it a jargon of random characters, having no meaning whatsoever.\(^2\)

Poe followed this article with three addenda, in which he again claimed to have solved all the ciphers sent to him that had met his conditions, and many that had not.

Until lately, these essays have attracted little attention; most critics have been content to take them as evidence of Poe’s “adolescent” interest in matters such as the ciphered treasure map of “The Gold-Bug.”\(^3\) In what follows, however, I hope to show the centrality of the cryptographic imagination to Poe’s work, in part by showing how the recovery of Poe’s cryptographic experiments recontextualizes the recent treatment of his works in France. Although poststructural thought has stimulated the best recent work on Poe, critics have often acted as if Poe’s texts were merely pretexts for validating claims advanced by Jacques Derrida, Jacques Lacan, \textit{et cie}. But \textit{The Cryptographic Imagination} argues that Poe’s postmodern relevance has a concrete historical source—that a primary reason Poe’s writings seem theoretically contemporary is that Poe used his cryptographic writing to conduct a systematic investigation into the nature of language. Consequently, observations about the arbitrariness of signification or the itinerary of the signifier in “The Purloined Letter” often merely repeat Poe’s own insights.

This is because Poe’s cryptographic theory serves as a template for his late fiction: the language, the themes, and even the plots of some of Poe’s most popular writings, including the Dupin stories and “The Gold-Bug,” emerge from Poe’s essays on cryptography. One corollary to cryptography is the intense consciousness of textuality that these stories encourage: in “The Gold-Bug,” for example, the solution of codes within the tale mirrors the reader’s own act of interpretation. Similarly, the form of the detective story—invented single-handedly by Poe—is predicated on the application of a cryptographic technique to the opaque materiality of the world. These twin effects—the concentration on “information,” and the sense that the manipulation of language-as-code confers a power over the world—shape the trajectory of Poe’s generic innovations. Detective fiction and science fiction are among the most popular literary forms of the last three centuries; by tracing their origins back to the cryptographic values encoded in their formation, we discover specific links among cryptography, Poe’s innovations in genre, and the effects of technology on literature.

Indeed, Poe’s writing illustrates a much larger cryptographic impulse shared by Poe’s poststructural critics, especially those interested in psychoanalytic reading. The direction of explanation need not flow from analyst to
literary text: as I show in chapter 2, one can make a plausible case that some of Lacan’s central theoretical notions are directly indebted to Poe’s writing. Reversing the typical exegetical pattern, one can thus use Poe’s writing to frame an inquiry into the lust for signs that has characterized literature and literary criticism for most of this century. The passion for exactitude that characterizes Lacanian readers is evidence of a sea change in our relation to literature, toward a sense of language as a form of semantic encryption.

This does not mean that the cryptographic text has a special ontological stance, or that it has a single thematic salience. Indeed, cryptographic writing stands as an affront to all master theories of the text, simultaneously producing a fantasy of reading as decipherment and undermining this promise with the possibility of further levels of encrypted significance. Secret writing cannot, therefore, be viewed adequately from the vantage point of any single theory. My method is correspondingly eclectic, drawing as much on old-fashioned rhetorical analysis as it does on psychoanalysis, deconstruction, or historicism. Some readers will doubtless be bothered by this promiscuity, but as I understand it, the desire for critical uniformity and coherence—for, say, a literary or psychic algebra—is itself the rather desperate expression of the cryptographic imagination in search of a final key.

The cryptographic imagination represents a way of enacting possibilities always possessed by language. As long ago as the fifth century B.C., Plato had Socrates warn of the attenuation of experience produced by writing and reading, and the danger of trusting the written word. But if language always harbors such tendencies, they are exacerbated by a period in which the success of the sciences has made it seem as if data ("text") might, indeed, be all there is. In such a world, it is not surprising that cryptography has become a topos for such writers as Thomas Pynchon, Don DeLillo, Michael Crichton, and William Gibson.

Perhaps the most telling of these recent cipher-fictions is Richard Powers’s *Gold Bug Variations*. Hailed as “the most lavishly ambitious American novel since *Gravity’s Rainbow,*” the book reached the *New York Times* bestseller list in 1992. It tells the intertwined stories of Dr. Stuart Ressler, a young molecular biologist who in 1957 seeks to crack the genetic code, only to find himself enmeshed in an impossible love affair; and of Franklin Todd and Jan O’Deigh, who a generation later begin an affair based on their shared fascination with Ressler. Around that plot *The Gold Bug Variations* weaves an intricate network of reference, as the trio struggle to understand the relation of their private lives to the disorientingly rapid scientific, technological, and social changes of the day. Although *The Gold Bug Variations* was, perhaps, more frequently bought than read, its commercial success testifies to the attractions of cryptography, as Powers traces the origins of life back to its original code: “The first link in the chain from Word to flesh,
philosopher’s stone, talisman, elixir, incantation, the old myth of knowledge incorporated in things” (93).

Powers’s novel is particularly smart about the self-reflexive force of the cryptograph: we see, in his account, how the act of deciphering becomes a parable for the birth of self-consciousness. As Jan O'Deigh observes in The Gold Bug Variations, there is a “curiously self-referential” quality to many enciphered messages. On discovering that Beadle, winner of the 1958 Nobel Prize for “an elegant experiment equating one gene with one synthesized enzyme” (218-19), received a telegram from Max Delbruck beginning “ADBACBBDBADACDCBBA . . .,” which decrypted to “Break this code or give back Nobel Prize,” she remarks: “Break this code. I am the riddle; know me. What ‘me’ could possibly proclaim itself the riddle? The cipher? The plaintext? The coding algorithm? The riddleness in the coder himself? . . . Know me and you will know yourself. I spend the afternoon playing with messages, and on no proof but my pleasure, feel as if I’m closing in on my discovery, me.”

This resembles the effect of Poe’s writing more generally, and may be a key to why it has flourished in the hothouse environment of postwar theory. Indeed, as the title of Powers’s novel reveals, his fiction takes its cue from “The Gold-Bug” by way of Bach. Both Poe and Bach are crucial for The Gold Bug Variations, providing Powers with thematic material and analogical structures for his novel. The triple-coding of Bach’s variations, for instance, offers Ressler a model for the codons of amino acids that, stuck together in triplets, form the base of DNA. Yet The Gold Bug Variations is even more profoundly a variation on Poe’s 1844 adventure. For Powers, Poe’s simple substitution cipher suggests that almost any scientific problem—the nature of genetics, the process of evolution, even the origin of life itself—can be approached as a problem of coding. The Gold Bug Variations offers a contemporary version of the Frankenstein story, as Ressler seeks to penetrate the process by which strings of inert amino acids encode themselves into living, symbol-making organisms.

Powers is explicit about the importance of Poe’s writing to his novel. The earliest scenes in The Gold Bug Variations take place in 1957, as the young Ressler, fresh from graduate school, heads to Illinois to work on a genetics research team named “Cyfer.” Stymied by the team’s commitment to experimentation, Ressler’s break comes when a coworker slips him a coded message that, when deciphered, immediately sends Ressler to the library:

He looks up her clue in the card catalog: Poe’s “The Gold Bug.” Mystery, suspense: a story in a thousand anthologies . . . . Squatting between two metal shelves, Ressler loses himself in the adventure. Discovery—a piece of heated parchment reveals secret writing. Pictograph of baby goat identifies author as Captain Kidd, language of cipher as English. Simple letter frequency and
word-pattern tricks lead scholars to pirate’s treasure. But directions to treasure are themselves a coded algorithm for unburying. Two men and blackfella servant, applying human ingenuity, measured paces, and plumb line, crack third-level mystery and uncover wealth beyond their wildest dreams. Only at story’s end does he emerge to shake off the fictional spell. “Gold Bug” is the ticket all right; he has come to the right place. . . . The heart of the code must lie hidden in its grammar. The catch they are after is not what a particular string of DNA says, but how it says it. . . . The treasure in Poe’s tale is not the buried gold but the cryptographer’s flicker of insight, the linguistic key to unlocking not just the map at hand but any secret writing. . . . Not the limited game of translation but the game rules themselves. (76-77)

As a work explicitly about the attractions of ciphers, “The Gold-Bug” represents something new in literary history. By its very nature, “literature” is built on the occult force of inscribed marks, and so written stories (as opposed to oral narratives) are necessarily cryptographic. But for millennia, cryptography existed in a kind of Masonic silence, in which knowledge of the art was confined to a tiny class of governmental practitioners or to those few who employed it for amusement. With the spread of the telegraph in the 1840s, however, this pattern began to change, as cryptography worked its way into not only the hardware of civilization but into our imaginations as well. Cryptography has subsequently been intimately bound to developments in telecommunications and science, including the invention of the digital computer and the discovery of information theory. The development of telecommunications is essentially a history of advances in the coding and transmission of signals. Although in its classical incarnation cryptography is almost an automatic metaphor for literature (the text as code, cryptanalysis as hermeneutic model) and for its telos (the preservation of human experience through these codes), through its role in telecommunications, cryptography has also transformed and undermined the print culture of the last three centuries.

Hence, it would be misleading to rest with some invariant account of the “theme of secret writing,” for the ties between literature and cryptography shift with the changing historical construction of each term. Although the desire for secrecy and privacy is always a literary possibility, certain recent literary genres (detective fiction, science fiction, cryptographic adventure) and certain forms of literary inheritance (generic repetition, spiritual “possession” and channeling, the reproduction of literary effects in real-world practices) have cryptographic assumptions programmatically encoded into them. If I am right in contending that these quintessentially modern genres share a cryptographic basis, then to read literature in this century is perforce to encounter the problem of secret writing. Indeed, cryptography names a point of continual friction between the forms of the literary imagination
and the conditions of literary production. As a subject belonging at once to literature and to science, technology, and the police practices of the state, cryptography helps set the terms by which the literary is produced.

**The Greatest of All Literary Problems**

Consider the claim that Francis Bacon wrote Shakespeare’s plays, as it is argued by James Phinney Baxter, who in 1915 published his monumental book *The Greatest of All Literary Problems: The Authorship of the Shakespeare Works*. For seven hundred pages, Baxter uses his considerable sophistication and scholarship to examine the case against Shakespeare’s authorship of the established canon (looking at evidence chiefly having to do with education, class, and some anomalies in the biographical record), before proposing someone whom he considers a far more plausible author of those works: Francis Bacon. Bacon is not the only person who has been advanced as the author of the Shakespearean canon, but for more than a century he has been chief pretender to the throne, his claim resting on the combination of his social status, his erudition, and his knowledge of secret writing.

Unquestionably, Bacon knew enough about the fundamental rules of cryptographic exchange to have designed a hidden cipher. His list of the three virtues to be “preferred” in composing a cipher is identical to contemporary demands: “that they be not laborious to write and reade; that they be impossible to decypher; and in some cases, that they be without suspicion.” And it is also true that in *De augmentis scientiarum* Bacon revealed his design for a simple cipher that Baconians keep discovering, in different variations, within the text of Shakespeare. Bacon’s cipher consists of two typefaces used to create a binary metacode, in which each five-letter group in the enciphered text represents a single decoded letter. The actual pattern of a- and b-alphabets can vary at will, so long as both sender and receiver have the same information. The twenty-four-letter alphabet Bacon provides is given in table 1. To use Bacon’s cipher, one first writes out the message *en clair.* Then, underneath it, one places the Baconian five-letter group appropriate for the letter: *art,* for instance, would be *aaaaa baaaa baaba.* When one has done this for the complete message, one takes any ordinary text—a recipe, a letter, an excerpt from the Bible—and writes the Baconian transliteration under it, underlining every *b.* Now one prints out the encoded text, using a different alphabet for all the letters that match up with *b,* and one has an enciphered text whose presence is hidden in the pattern of typefaces alone. To translate the code back, the receiver of the message divides the missive into five-letter groups and deciphers the pattern of alphabets to obtain the original text.

As an instance of this cipher, consider this passage from *De augmentis scientiarum* in regular and italic type, in which Bacon discusses the biliteral cipher:
Table 1. Francis Bacon’s biliteral cipher.

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
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<tr>
<td>aaaaa</td>
<td>aaaab</td>
<td>aaaba</td>
<td>aaabb</td>
<td>aabaa</td>
<td>aabab</td>
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<tr>
<td>aabba</td>
<td>aabbb</td>
<td>abaaa</td>
<td>abaab</td>
<td>ababa</td>
<td>ababb</td>
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<th>Q</th>
<th>R</th>
<th>S</th>
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<tbody>
<tr>
<td>abbaa</td>
<td>abbab</td>
<td>abbbba</td>
<td>abbbbb</td>
<td>baaaa</td>
<td>baaab</td>
</tr>
</tbody>
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<tr>
<th>T</th>
<th>V</th>
<th>W</th>
<th>X</th>
<th>Y</th>
<th>Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>baaba</td>
<td>baabb</td>
<td>babaa</td>
<td>babab</td>
<td>babba</td>
<td>babbb</td>
</tr>
</tbody>
</table>

For it has the perfection of a cipher, which is to make anything signify anything; subject however to this condition, that the infolding writing shall contain at least five times as many letters as the writing infolded.\(^\text{12}\)

Deciphering the pattern of typefaces according to Bacon’s alphabet, we discover that “Bacon wrote fine ciphers, but not fine plays”—a refutation of the Bacon-Shakespeare thesis fully as convincing as many of the book-length arguments advanced in its favor.

Bacon’s cipher is a tool of some subtlety. This was especially true in the sixteenth century, when the unevenness of presses and the haphazard mix of available typefaces made it plausible to find the frequent use of mixed fonts in a single text. But even today, the use of closely related typefaces can render the presence of Bacon’s cipher almost invisible. Figure 1, for instance, provides an excerpt from *The Advancement of Learning* printed in Garamond and Imprint, which contains a message that I leave for curious readers to decipher. Bacon’s cipher satisfies all three of his own cryptographic principles. Not only can the cipher be mastered and translated quickly (given accurate printing) but, best of all, as a steganographic cipher, it disguises that it is a code. Because it relies only on the systematic contrast between two different elements, Bacon’s cipher need not be restricted to contrasting typefaces. Instead, it can squirrel itself into a literally infinite range of patterns and images. The rather crude castle in figure 2, for in-
In all duty or rather piety towards you I satisfy everybody except myself. Myself I never satisfy. For so great are the services which you have rendered me, that seeing you did not rest in your endeavours on my behalf till the thing was done, I feel as if life had lost all its sweetness, because I cannot do as much in this cause of yours. The occasions are these: Ammonius the King's ambassador openly besieges us with money: the business is carried on through the same creditors who were employed in it when you were here, &c.

Figure 1. Francis Bacon's biliteral cipher. From Friedman, “Six Lectures on Cryptology,” 49.

Figure 2. Biliteral cipher contained in a drawing of a castle. From Friedman, “Six Lectures on Cryptology,” 48.

stance, is actually a biliteral cipher of empty and shaded stones. Drawn by a doctor fascinated by Baconianism, the deciphered text reads as follows:

My business is to write prescriptions
And then to see my doses taken;
But now I find I spend my time
Endeavoring to out-Bacon Bacon.13

Such games of literary hide-and-seek matter more than one might suspect. Given Shakespeare's status as a touchstone for literary value, the question of who wrote his plays (of how we connect them to history and to other literary texts) is conceivably “the greatest of all literary problems,” because it
serves as a synecdoche for fundamental issues of textual provenance and hermeneutics. Ciphered readings of Shakespeare aim to disrupt the authority of canons, the construction of authors, and the relation between authors and the works they produce—in part by mimicking the protocol of the literary history they resist. By 1947, when Professor Joseph Galland “compiled his bibliography of the controversy, entitled Digesta Anti-Shakespeareana, no one could afford to publish the 1500-page manuscript.” By 1960, four thousand books and monographs attacking Shakespeare’s authorship had been published, and the flood of publications continues to this day. As Marjorie Garber has observed, such challenges are “greeted by orthodox Stratfordians with umbrage, derision, and contemptuous dismissal of so intense an order as to inevitably raise another question: what is at stake here? Why . . . has the doubt about Shakespeare’s authorship persisted so tenaciously, and why has it been so equally tenaciously dismissed?”

As Garber shows, the cryptographic appropriation of Shakespeare is in part a response to such moments within the plays as that in Twelfth Night when Malvolio tortures Maria’s forged letter into sense (“And the end—what should that alphabetical position portend? If I should make that resemble something in me! Softly! M, O, A, I” [2.5.129–32]), or of the intercepted and decrypted plans to kill the king in Henry V. Shakespeare’s references to signatures, codes, and “character,” his obsessive punning and wordplay, and the sheer density of his writing all solicit pseudocryptographic interpretations. Recalling the tradition that Shakespeare himself played the Ghost in Hamlet, Garber speculates that the apparition’s repeated invocation “Remember me!” is directed both to Hamlet and to Hamlet’s audience. On this account, the success of Shakespeare’s textual ghost-effects is evident both in his obsessive citation by later writers (the canonical response) and in the search for a secret author: “Cryptographers,” Garber explains, “set out to uncover ghostlier demarcations, to show that the text itself is haunted by signs of rival ownership.”

What Garber never suspects, however, is the degree to which Poe is involved in this search for “signs of rival ownership.” Indeed, although it seems mad to say it, the combined effects of Poe’s fictionalization of cryptography and his invention of the detective story are so great that it would only just overstate things to say that the cryptographic fascination with Shakespeare is a function of Poe’s own writing. To begin with, Baconianism is primarily a feature of American, rather than British, literary history. Although doubts about Shakespeare’s authorship were raised in England as early as 1728, it was only in mid-nineteenth century America that the question came to seem pressing, when Delia Bacon published “Shakespeare and His Plays: An Inquiry Concerning Them” in an 1856 issue of Putnam’s Monthly (F&F, 3). (Poe knew Delia Bacon all too well: it was she who had taken first place in the Philadelphia Saturday Courier contest of June
1831, beating out Poe’s “Metzengerstein,” which was published in the subsequent issue.) The next year, Bacon's essay became the 543-page book *The Philosophy of the Plays of Shakespeare Unfolded*, with a preface by Nathaniel Hawthorne. Bacon's book “opened a giant valve: the books, the articles, the journals now appeared in a gathering spate: some ‘for,’ but most ‘against’ Shakespeare” (F&F, 4).

My claim is not that Poe had anything to do with Bacon’s authorship of "Shakespeare and His Plays," but that the Baconian’s mode of hermeneutic suspicion, interest in hidden signatures, and, above all, willingness to play the part of the literary detective, poring over texts in search of secrets, is wholly consonant with the project of Poe’s cryptographic writing—a form of writing that quickly became ubiquitous over much of the globe. In consequence, it can be startling to notice how discussions of such apparently unrelated questions as the authorship of the Shakespearean canon lead back to discussions of Poe. Garber, for example, draws virtually all of her evidence for *Shakespeare’s Ghost Writers* from a book by a pair of cryptographers: *The Shakespearean Ciphers Examined: An Analysis of Cryptographic Systems Used as Evidence that Some Author Other than William Shakespeare Wrote the Plays Commonly Attributed to Him*. Although now little remembered, *The Shakespearean Ciphers Examined* won the 1955 Folger Shakespeare Library competition for the best manuscript on Elizabethan literature, and was published in 1957 by Cambridge University Press. Its authors—William Friedman and Elizebeth Friedman—were most unlikely prizewinners. Neither was a professional critic, nor even a particularly good reader of Shakespeare. Originally trained as a geneticist, Friedman was hired to assist Elizabeth Wells Gallup, a high school English teacher who in 1899 published *The Biliteral Cypher of Sir Francis Bacon Discovered in His Works and Deciphered by Mrs. Elizabeth Wells Gallup*. 19 Led by Gallup, Friedman and his wife Elizebeth began a study of codes that eventually led to his cracking of the Japanese cipher Purple during World War II—an achievement of the same magnitude as the Polish and British solution of Enigma. Yet although Friedman’s pioneering work in military cryptography won him an appointment as an army colonel, he was never able to forget that his career originated with a set of literary questions, a fact to which tribute is paid in *The Shakespearean Ciphers Examined*.

It was, however, Poe, not Shakespeare, who introduced Friedman to the exalted possibilities of ciphers. As a child, Friedman “would talk with excitement about a world he had discovered through Edgar Allan Poe’s ‘The Gold-Bug,’” 20 an encounter that so shaped Friedman’s character that for the rest of his life “he was still prepared to waste time on the most unlikely of ‘buried treasure’ messages sent to him for decipherment.” 21 Throughout his life, Friedman returned to the subject of Poe’s cryptography, in essays published not only in scholarly venues such as *American Literature*, but also
in such arcane locations as the Bulletin of the Signal Intelligence Service, the house organ for War Department cryptographers. It was in one of these essays that Friedman observed that “the fame of Poe rests not a little on his activities with cipher, and much of the esteem in which this American genius is held today rests in part on the legend of Poe the Cryptographer.”

Friedman’s opinion is echoed by Joseph Wood Krutch, who maintains that “nothing contributed to a greater extent than did Poe’s connection with cryptography to the growth of the legend which pictured him as a man at once below and above ordinary human nature.”

So many of the pioneers of American cryptanalysis discuss Poe that it seems impossible to argue that literary uses of cryptography are merely anterior appropriations of genuine cryptographic models, as if fiction only echoes larger social and political practices. Even cryptographers wishing to dismiss Poe apparently need to reckon with him first. Such was the case with Herbert Yardley, who headed M18, the “American Black Chamber,” from 1917 until 1929, when it was dissolved by Henry Stimson, the new secretary of state. Desperate to provide for his family, Yardley hastily wrote The American Black Chamber, a best-selling account of his adventures in governmental decryption, and the model for dozens of novels and films. Although Yardley disparages Poe’s expertise, he repeatedly couches his discussion of cryptography in terms of Poe’s writing. Describing his self-education, Yardley remembers “quickly devouring” all the books on cryptography to be found in the Library of Congress. Next “I searched Edgar Allan Poe’s letters for a glimpse of the scientific treatment of cryptography. These were full of vague boasts of his skill—nothing more. Today, looking at cryptography from a scientific point of view, for the American Black Chamber has never had an equal, I know that Poe merely floundered around in the dark and did not understand the great underlying principles.”

Later, in his choice of lodgings for the Black Chamber, Yardley followed Poe’s logic of hiding in plain sight: “Following the reasoning in Poe’s ‘Purloined Letter’ I selected as a home for the Black Chamber a four-story brownstone front in the East Thirties, just a few steps from Fifth Avenue—the very heart of New York City.”

The structure of Yardley’s tale serves as one way of imagining Poe’s continued presence in the development of cryptography. Overtly following Poe’s logic, Yardley set up a secret agency in the middle of Manhattan, operating under cover of a legitimate business (the Code Compilation Company), which, to perfect its dissimulation, actually produced and sold a trade cipher known as the Universal Trade Code. For the seven years that it operated in New York, Yardley’s Black Chamber intermingled literary, commercial, and covert purposes in such a way that one cannot single out any one aspect as the only “real” level of operations. Although the politi-
cal purposes of the Black Chamber were obviously paramount in its design, this does not mean that the Universal Trade Code was any less effective for its customers, or that Poe's advice about hiding in plain sight was any less useful for having appeared in a fiction. The real power of cryptography—its social and political utility—depends on the way it affiliates feigned truths with telling fictions, overt with hidden purposes. Mingled in all of this, hidden in sight so plain that it has remained largely undetected, we shall find the traces of Poe's words.

Cryptographic Replication

The Cryptographic Imagination is divided into two sections, the first primarily concerned with genre and the second with the nature and effects of Poe's literary influence. Belying this distinction, however, this entire study worries the devious logic of literary replication and identification. Genre and epigone are the reverse and obverse of the same coin of influence: both are mechanisms for textual reproduction. Hence, after an opening chapter devoted to Poe's magazine pieces on the history, uses, and techniques of cryptography, I consider the three main types of cryptographic fiction: the cipher adventure, detective fiction, and science fiction. Each chapter focuses its analysis through readings of representative texts: "The Gold-Bug" for cipher-adventure fiction, "The Murders in the Rue Morgue" for detective fiction, and "The Man that Was Used Up" and some ancillary pieces for science fiction.

At the same time, each chapter renegotiates Poe's relation to literary history. Chapter 2 explores how Poe's understanding of the cryptograph grew out of his peculiarly absorptive reading of Daniel Defoe. Poe's use of cryptography in "The Gold-Bug" represents his adaptation of certain self-consciously textual moments in what otherwise seems to be the transparent realist prose of Robinson Crusoe. Poe's use of the cryptograph as a two-dimensional key to a three-dimensional crypt manifests with particular clarity a literary pattern found in works from the Bible to The Gold Bug Variations. Next, I locate Poe's creation (and eventual destruction) of the analytic sublime against its parallel presence within the tradition of psychoanalytic criticism. The cryptograph exacerbates Poe's proclivity to think of the self as a linguistic construct; although the detective's ability to gloss the world as if it were a text promises the reader unheard-of powers of interpretation, the reader's somatic participation in the crimes that the detective uncovers in the Rue Morgue exposes the impossibility of realizing the desire for a purely ciphered existence. In chapter 4 I read Poe's science fiction in light of the contemporary invention of the telegraph. With its suggestion that communication is a combination of coded signal and an "electrical" principle of sociality, the telegraph bears deep affinities to Poe's understand-
ing of cryptography, and it reinforces his tendency to polarize distinctions between signifier and signified, body and mind. Long interested in automata as models for human organization, Poe eventually came to imagine the soul as a form of electricity, thus completing the transformation of man into machine begun in texts such as “Maelzel’s Chess-Player.”

But Poe’s generic influence also requires one to consider how particular writers have learned from Poe’s fictional practices. This is peculiarly true of cryptographic writing, which always forces one to confront the essential, shocking anonymity of language. And since cryptographic texts lead to a linguistic doubling of reader and writer contained within the imaginative space of the cryptograph, secret writing naturally encourages imitation and plagiarism. Because of the powerful transferential effects of Poe’s secret writing, a disproportionate number of his readers have come to think of themselves as Poe’s “secret readers,” who reproduce his cryptographic paradigm either in their writing or in their lives.

Literary cryptography turns out to be, in part, a set of mechanisms for producing these transference effects, and so part 2 of *The Cryptographic Imagination* examines the effects of Poe’s secret writing on his later readers. These include writers and critics such as T. S. Eliot and Jacques Lacan; cryptographers such as William Friedman; and the Boston spiritualist Lizzie Doten, who believed she served as a spiritual telegraph through whom Poe posthumously dictated poems. Chapter 5 treats Poe’s literary influence as an effect of his cryptographic enterprise, identifying Doten as a reader who embodied one pole of the contradictory impulses in Poe’s work between absence and presence, arcane erudition and mass-cultural commodity. As a “spirit-poet,” Doten found in reading Poe a model of an invisible, mesmeric communication that translates thought directly from mind to mind, free from the hindrance of any signifying medium; as I show, she gradually came to identify Poe’s spirit with an emerging ideology of mass communications. Reading thematically, Doten identified Poe with a “cinematic” experience of self-dispersal, and a simultaneous and total identification with a certain biographical fantasy. Although in Doten’s mind all writing proved cryptographic to one degree or other (because the process by which words communicate remains a mystery), Poe’s verse exerted an influence that Doten found indistinguishable from possession.

William Friedman’s relation to Poe could not seem more different. As America’s foremost cryptologist, Friedman rigorously applied mathematical principles to the creation and solution of ciphers. Yet the closer one looks, the more one sees continuities between Doten’s spiritualization of cryptography and its twentieth-century practice by Friedman and others. This is important, because as chapter 6 demonstrates, the explosive growth of cryptography during World War II offers an overlooked matrix for the
formation of a paranoid Cold War consciousness. By reading Poe’s presence in Friedman’s life and work, I offer what might be called a literary history of the NSA, which reveals the dense interpenetration of cryptographic fiction, espionage, and diplomacy throughout the past half-century.

Friedman and Doten prove especially attractive for my purposes because of their anomalous critical status, partly inside literature and partly outside it. Through their twinned careers we can see something of the extraordinary fertility of Poe’s literary influence, as well as how this influence disseminates itself into quasi- or nonliterary areas, which may, in turn, provide new material for literature. Significantly, both Doten and Friedman have a profound desire to flee the literary, albeit for opposite reasons. For Doten, insofar as it is linked to language, materiality, occlusion, and separateness, literature is what remains when spiritual inspiration fails. Friedman fears literature for inverse reasons: his life was spent in large part rendering cryptography a discipline, abstract and eternal, and subject to an algorithmic precision. Yet he, too, found literature an unavoidable component of his work, never escaping the literary themes that surrounded the practice of cryptography at its most elevated levels.

The development of telecommunications has led to a cultural mythos that associates cryptographic culture with the disembodiment, self-transcendence, and fetishization of communication, and so my study next takes up the ways in which electronic communications on the Internet reproduce features of cryptographic identity familiar from Poe’s writings. In chapter 7 I explore the unstable contemporary relations between literature and technology, reading the behavior of Internet cypherpunks against Pynchon’s Crying of Lot 49 in relation to issues of anonymity, psychic projection, and enciphered community. The book concludes with a look at such exotic future developments as computerized steganography and quantum cryptography—this last a possible road to the transformation of matter into codes (a dream that lurks at the heart of the cryptographic imagination).

As should be clear, the Poe invoked in part 2 is only incompletely bound to the biographical subject. When I claim that Poe helped end World War II, the “Poe” in that sentence represents both a particular author and the literary genre he helped create and for which he serves as a synecdoche. This follows from cryptography offering a strategy for intensifying the reader’s authorial cathexis. Paradoxically, Poe’s emphasis on ciphers intensifies his ability to create an intimate image of himself. Such ciphers act as the literary equivalent of Yale secret societies, whose Cyclopean masonry, iron gates, and apotropaic figures all serve to enhance the intimacy (and the outsider’s imagination of the intimacy) of what takes place within those walls. Poe’s cryptography is both a way of dissimulating responsibility for what he wrote and a means of intensifying ownership, of gathering his dis-
persed identity into a figure for future readers, who seek entry to his writing by striving to make themselves one with him as he is encrypted within their minds. Poe's reputation today testifies to his success: contemporary critical interest in Poe is itself a cryptographic phenomenon, the result of a secret writing only now being deciphered.