THE PLAY THAT SOLVES THE SHAKESPEARE AUTHORSHIP MYSTERY

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The Allegory of Francis Bacon's Natural Philosophy in *The Tempest*

Donald Elfenbein

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The play that solves the Shakespeare authorship mystery : the allegory of Francis Bacon's natural philosophy in *The Tempest* / Donald Elfenbein

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Contents

Preface vii

1 Summary of the Argument 1

2 Allegorical Interpretations and the Assessment of Their Validity 5
A Mysterious and Baffling Play 5
Bacon's Criterion for Detecting Allegories 7
Allegorical Readings of *The Tempest* 10
Bacon's Criterion for Assessing the Validity of Allegorical Interpretations 13

3 The Allegory of Bacon's Natural Philosophy in *The Tempest* 21
Discoverers of the Baconian Allegory 21
Evidence of the Baconian Allegory 24
The Conquest of Nature and Methods of Achieving It 27
The Conquest of Nature as a Goal Attained or Attainable 27
The Role of Art in the Conquest of Nature 30
The Role of Magic in the Conquest of Nature 32
Spirits and Their Role in the Conquest of Nature 41
Spirits and Their Role in the Natural World 41
The Invisibility of Spirits 44
The Imprisonment of Spirits 45
The Desire of Spirits to Escape Imprisonment 47
The Airiness and Fieriness of Spirits 49
Spirits More Airy Than Fiery 51
Harnessing the Energies of Spirits and Its Role in the Conquest of Nature 53
Impediments to the Conquest of Nature 59

Contents

A Bewitching Entity as an Impediment to Harnessing the Energies of Spirits 59
A Bewitching Entity as Circularity or the Cause of Circular Movement That Impedes Scientific Progress 65
The Role of Books and Knowledge in the Conquest of Nature 68
The Conquest of Nature and Methods of Achieving It Summarized 75

4 The Baconian Allegory Summarized 83

5 *The Tempest* and the Question of Authorship 93
Did a New Conception Cause Shakespeare and Bacon to Hold Similar Ideas?...................... 93
Did Bacon Borrow Ideas from Shakespeare?........... 96
Did Shakespeare Borrow Ideas from Bacon?......... 100
Why Did the Author of *The Tempest* Allegorize Bacon's Philosophy? 101
The Allegory and Its Purpose as Evidence of Authorship 104

6 Conclusion 107

Works Cited 111

Preface

I undertook this investigation in the expectation that it might help to rectify an ironic and troubling turn of events in the recent history of the Shakespeare authorship controversy. As a longtime student of that subject, I had weighed much of the available evidence impartially and concluded that the case for Francis Bacon was far stronger than those presented on behalf of other candidates. Moreover, I had learned that it was more than convincing enough to win open-minded skeptics over. I had therefore expected popular support for the Baconian theory to grow as time went by. Instead of increasing, however, its popularity had waned. Concurrently, books and Web sites claiming that Edward de Vere, 17th Earl of Oxford, was the man behind the name had proliferated, their authors undeterred by a paucity of unambiguous proof. In addition, other dark-horse contenders had found champions. In my view, these were discouraging backward steps in the quest for truth.

One factor I believed to be partly responsible for the decline in the Baconian theory's fortunes was the use of deceptive tactics by unscrupulous Stratfordians and Oxfordians, some of whom were prominent academics, to create the illusion that their arguments were more cogent than in fact they were. Their most audacious ploy was to deny the existence of well-documented facts that cast doubt upon the Stratfordian orthodoxy. Another was to distract attention from inconvenient evidence by mounting ad hominem attacks upon the Baconian researchers who had discovered it. A third such trick was to count general authorial character-

istics that manifest themselves in Shakespeare's works as proof of Oxford's authorship when in fact they point just as clearly or even more clearly to Bacon. This devolution of the authorship controversy into win-at-all-costs warfare was, for me, an additional source of dismay.

As a Baconian and a proponent of scholarly objectivity, I was eager to take arms against this sea of troubles. When the quatercentenary of the First Folio's publication in 1623 first appeared on the horizon, I decided to enter the fray. The best way to help authorship studies get back on track, I thought, was to collect more and better evidence that the Baconian theory is valid and to restate the previously discovered evidence more effectively. With those goals in mind, I directed my attention to *The Tempest* because it appeared to contain more numerous and more persuasive indicia of its author's true identity than any other Shakespearean play or poem. I began with clues that had been brought to light earlier and later found others that, as far as I knew, had not been noticed before. My hope was that a comprehensive compilation and analysis of the evidence, old and new, contained in this play would engender more fruitful discussions of the authorship question and help students of it to perceive more clearly where the truth of the matter lies.

In defending the thesis that *The Tempest* presents us with a Baconian allegory, I touch upon a variety of subjects: the internal evidence that supports this reading; the history of allegorical interpretations of the play and critical responses to them; the content and origins of Bacon's natural philosophy; the history of Renaissance conceptions of art, magic, and allegory; and others. Because most essays on

subjects like these are written by scholars who specialize in them, and I do not fit that mold, I should mention briefly the qualifications I did and did not bring to this study.

Prior to starting out, I had gained some experience in research and scholarship. I had published scholarly writing of my own, edited books and articles by academics, and done unpublished research on a number of subjects. In several general ways, that work had prepared me to conduct an inquiry like the present one. But most of it was done in subject areas unrelated to those I explore here.

At the outset, I knew almost nothing about those subjects, and my first step, therefore, was to research them. In addition to *The Tempest,* I studied criticism of the play by Shakespeare scholars, and in addition to Bacon's natural-philosophical writings, I read interpretations of them by Bacon specialists. For information on the other subjects relevant to my investigation, I turned to books and articles by authors with expertise in those areas. Thus what I brought to this study was not the knowledge of a specialist but that of a generalist seeking to synthesize the research of specialists and to draw from it some of the inferences it can reasonably be understood to support.

Research of this kind can yield valuable discoveries. Despite being generalists, for example, the most capable researchers in the Baconian camp, who have followed the evidence wherever it has led them, have made important contributions to authorship studies. Their amateur status, moreover, has been an asset in that it has kept them from falling prey to the dogmatism that closes the minds and chills the expression of many professional scholars. My own

goal has been to emulate those perceptive and unbiased amateurs.

In order to facilitate the verification of my factual claims, I provide numerous quotations from Shakespeare, Bacon, and the scholars whose knowledge informs my discussion. References to *The Tempest* other than the first are in the text; citations to Bacon's works and secondary sources are in the footnotes. Readers may judge for themselves whether my sources and interpretations of them are credible. If so, what I learned from my research may allow me to show that there is a Baconian allegory in the play.

The arguments that take me from that allegory to the conclusion that Bacon wrote the play are my own. Their value depends, of course, upon whether my reasoning is sound. If I have made errors of any kind, I hope that they will be pointed out to me so that I can correct them.

Susan McIlroy, chair of the Francis Bacon Society, and John Torbert, editor of *Baconiana,* read an earlier draft of the piece and made useful suggestions, for which I am grateful. Peter Dawkins, whose work on Bacon and *The Tempest* I admire, gave me wise advice. Lawrence Gerald, whose Web site (https://sirbacon.org) is an indispensable repository of information about Bacon and the authorship controversy, directed my attention to an author whose relevant research I had overlooked. Christina G. Waldman generously furnished me with extensive commentary on the essay. As always, my largest debt is to Anna Shannon Elfenbein, whose many insightful observations helped me to improve my presentation, both in form and in content.

1. Summary of the Argument

MORE than a century ago, a series of pioneering researchers published the provocative contention that *The Tempest* contains an allegory of Francis Bacon's natural philosophy. Their common thesis was that the fantastic traits and actions assigned to Prospero, Ariel, and Sycorax resemble and represent ideas set forth in the works that had earned for Bacon his reputation as one of the guiding lights of modern science and technology.[1] Writing between 1872 and 1914, H. N. Hudson, Constance M. Pott, Theron S. E. Dixon, Gustavus Holzer, Edwin Reed, and Edward George Harman defended different versions of this reading. In his more recent book on Shakespeare's wisdom in *The Tempest,* Peter Dawkins reaffirms their interpretation.

Because many different allegories have been found in the play, all of which are supported to some extent by its text, it has been difficult to determine whether the Baconian interpretation truly captures one of Shakespeare's intended meanings. Its early advocates identified several intriguing parallels between *The Tempest* and Bacon's philosophy, but their discussions were brief, fragmentary, and scattered across a number of books. Collectively, they presented an impressive set of clues, but none of them tried to assemble in one place all the evidence that supports this reading. At least partly for these reasons, its validity has remained in doubt.

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[1] For a brief and lucid summary of Bacon's natural philosophy, see Zagorin, chs. 2–3.

Systematizing and extending those investigations in this essay, I aim to present the full complement of Baconian ideas contained within *The Tempest.* I show that the drama's improbable elements figure not only the general methodological prescriptions for which Bacon is famous but also several of his specific speculations about the inner workings of nature, unproven assumptions that are peculiar to him and of little consequence.[2] I demonstrate that the points of correspondence are even more numerous and striking than earlier commentators believed them to be. And I argue that, in the aggregate, they constitute strong proof that a Baconian allegory was intentionally incorporated into the play, and that Bacon was its author.

I begin, in chapter two, by discussing allegorical interpretations of *The Tempest* and the question of how to assess their validity. I show that many literary critics understand this mysterious play to be allegorical, whereas some others reject that view. And among those who find concealed meanings in it, there is dissensus as to what they are. From Bacon's discussion of the interpretation of myths and fables in *Of the Wisdom of the Ancients* (1609), I borrow the general criteria he used to resolve such issues. After showing that those criteria are well grounded in facts and reasoning, I

[2] Bacon's natural philosophy, as Graham Rees explains, has two parts. One is "a set of methodological recommendations" for "constructing a body of scientific knowledge that would yield practical benefits." The other is "a strange corpus of theory" that takes a "speculative guess" at the facts that might be discovered by adopting Bacon's methods of investigating the natural world (Introduction, *Philosophical Studies* xxxvi).

conclude that applying them to *The Tempest* can shed light on the questions of whether it should be regarded as allegorical and, if so, whether it allegorizes Bacon's philosophy.

In chapter three, the heart of my discussion, I first summarize the conclusions reached by the early proponents of the Baconian reading and then present the evidence that supports them. I demonstrate that when their work is synthesized and carried forward, it can be seen that fourteen elements of Shakespeare's portrayal of Prospero, Ariel, and Sycorax align closely with fourteen of Bacon's philosophical recommendations and speculations. Taking the parallels one at a time, I first locate each Shakespearean element in *The Tempest* and then identify, with reference to Bacon's natural-philosophical writings, the Baconian element it figures. The play resembles the philosophy in so many respects, I argue, that the Baconian interpretation of it plainly satisfies the conformity criterion Bacon uses to assess the validity of allegoresis in general.

Chapter four contains a tabular recapitulation of the evidence, which allows the point-for-point correspondence between Shakespeare's ideas and those of Bacon to be seen at a glance.

I turn in the fifth chapter to a discussion of whether the Baconian allegory in the play reveals its author's identity. There I first examine the hypothesis that the parallels were produced by the rise of a new conception that had influenced both Bacon and Shakespeare, and I find this explanation to be untenable. I then consider the possibility that the philosopher borrowed his ideas from Shakespeare and conclude that this explanation is neither plausible, reconcilable

with the relevant chronology, nor consistent with the manner in which Bacon constructed his natural philosophy. The evidence indicates, I claim, that the play's author deliberately brought many of its strange elements into conformity with the preexisting elements of the Baconian philosophy for the purpose of allegorizing it.

My final topic is whether we can discover the dramatist's identity by inquiring into the evident purpose of the allegory. I suggest that, in accordance with the practice of other Renaissance authors, he probably wrote the play with the intention of revealing what he deemed to be sacred teachings to the worthy elite capable of understanding the allegory. At the same time, he evidently sought to conceal those truths from the unworthy masses, who could be expected to profane them, by placing them behind an allegorical veil. Inasmuch as some of the ideas the author believed to be sacred were speculations unique to Bacon and seemingly insignificant technical details rather than central themes of his philosophy, the only inference that can reasonably be drawn, I argue, is that Francis Bacon wrote *The Tempest* under the nom de plume of "William Shakespeare."

2. Allegorical Interpretations and the Assessment of Their Validity

A Mysterious and Baffling Play

THE meaning of *The Tempest* is and always has been mysterious. Widely acclaimed as one of Shakespeare's greatest achievements,[3] it is also described by many commentators as an enigma.[4] Almost all sensitive readers believe, as Harold C. Goddard observes, that the drama "contains a secret meaning," and "[e]ven those who make no attempt to search it out retain the feeling that it is there."[5] But there is no certainty and little agreement as to what that

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[3] See, e.g., Hazlitt 89 ("one of the most original and perfect of Shakespeare's productions"); H. James ix ("one of the supreme works of all literature"); Wilson 131–32 (judged on the basis of artistry, "the most consummate of all Shakespeare's masterpieces"); Kermode, Introduction lxxxi ("the play has always been held in high esteem"); D. James 1 ("one of the profoundest and most majestic of Shakespeare's creations").

[4] See, e.g., Srigley, "Francis Bacon" 41 (the play is a "dramatic enigma"); Still, *Timeless Theme* 133 ("an enigma which demands interpretation"); Mendes 126–27 ("one of the most bottomless, unfathomable, and profoundly mysterious plays ever written in the English language").

[5] Goddard 666. See also Phillips 147 ("Most students of *The Tempest* are agreed that there is more to Shakespeare's . . . play than charms the eye and delights the ear," that it has a "deeper meaning"); H. Smith 9–10 ("many critics feel that in this play more is meant than meets the ear").

meaning is.[6] In the words of Edward Dowden, *The Tempest* possesses the "quality of soliciting men to attempt the explanation of it . . . and, at the same time, of baffling their inquiry."[7]

The bafflement obviously stems from what Henry James calls the play's "fathomless strangeness."[8] Instead of portraying realistic characters whose actions and motives are recognizably human, like those we meet in *Hamlet* and *Othello, The Tempest* gives us a magus who uses art to compel a spirit to alter the processes of nature after releasing him from a tree in which he was imprisoned by a hoop-shaped witch. Because of their strangeness, the "imagined beings" who inhabit the drama mystify us to a far greater extent than Hamlet and Othello do.[9]

Many literary critics presume that by incorporating characters and actions with little verisimilitude into *The Tempest,* Shakespeare invites us not to take those elements literally but to regard them as the components of an allegory. On that ground, for example, Colin Still asserts that the play "must be regarded primarily as a figurative representa-

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[6] See H. Smith 1 ("Though there is unanimity about the play's quality, there is the greatest diversity of opinion as to what the play means").

[7] Dowden 378. See also Lucy 30 ("This play, perhaps more than most of Shakespeare's, possesses the gift of baffling all enquiry. Its meaning is there, but what?").

[8] H. James xiii.

[9] Chambers 304.

tion of abstract things."[10] Others defend the contrary position, however, insisting that the author's purpose is not to convey any secret meaning allegorically but merely to create an entertaining fantasy of extraordinary beauty. Thus Elmer Edgar Stoll tells us that he "cannot believe that there is any allegory . . . or symbolism" in *The Tempest;* in his view, the play is nothing but "a romantic fantasy, precious . . . because of the characters, the poetry, and the rich and dreamy spirit which informs it."[11] This division of critical opinion raises the question of whether there is any criterion that can help us decide which interpretation is correct.

Bacon's Criterion for Detecting Allegories

Whether he wrote *The Tempest* or not, Francis Bacon provides us with wise advice on how to tell the difference between a story that means what it says and one that says

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[10] *Timeless Theme* 134. See also, e.g., Knight, "Symbolism" 306 (an "obviously symbolic drama"); D. James 162 ("I do not think we can deny the presence of allegory in *The Tempest*"); Hart 23 ("allegorical interpretation may be unavoidable in regard to *The Tempest*"); Beck 93 ("Characters and events . . . are . . . so 'unrealistic' that they lend themselves to symbolic interpretations").

[11] Stoll 281. See also Chambers 306 (the play cannot be "reasonably interpreted as a deliberate and consistent allegory"); Grant 10 ("I do not think *The Tempest* is allegorical"); Nuttall 159 ("The simplified characters . . . are not *ipso facto* allegorical"); Bloom 673 ("Allegory was not a Shakespearean mode, and I find little in *The Tempest*").

one thing and means another.[12] The myths and fables that "contain a hidden and involved meaning," he writes in *Of the Wisdom of the Ancients,*

> are so absurd and stupid upon the face of the narrative taken by itself, that they may be said to give notice from afar and cry out that there is a parable below. For a fable that is probable may be thought to have been composed merely for pleasure, in imitation of history. But when a story is told which could never have entered any man's head either to conceive or relate on its own account, we must presume that it had some further reach.[13]

As an example of an absurd tale that must have a parable below, Bacon cites the myth in which Jupiter devours his pregnant wife Metis, becomes pregnant himself, and brings forth from his own head his armor-clad daughter, called Minerva by the Romans and Pallas by the Greeks and Bacon.

Several of the modern critics who take *The Tempest* to be allegorical arrive at this general interpretation by implicitly applying to the play the same criterion Bacon recommends

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[12] The author of *The Art of English Poesy* (1589) says that in an allegorical story, "we speak one thing and think another, and . . . our words and our meanings meet not" (270; Bk. 3, ch. 18). This book was published anonymously and later attributed to George Puttenham. According to Walter Begley, Parker Woodward, and William T. Smedley, however, it was in fact written by Francis Bacon (see Begley, *Bacon's Nova Resuscitatio* 1–108; Woodward, *Sir Francis Bacon* 30, 35; Woodward, *Tudor Problems* 193–200; Smedley 60–61).

[13] *Of the Wisdom* 697 (Preface).

in *Of the Wisdom of the Ancients.* Colin Still clearly has that standard in mind, for example, when he makes the following argument. *The Tempest* “contains a very large number of strange and suggestive features” that are, “in their outward appearance, . . . strained and unconvincing, inconsequent and even ridiculous”; those features are “of the kind that can generally be observed in . . . allegorical works”; therefore, we must regard the play as an allegory and “look behind its peculiar outward forms for some intelligible and paramount idea that unites and explains them all.”[14] Similarly, in her discussion of *The Tempest,* Margaret Lucy writes, “[N]one can credit that the inspired mind was actuated only to create a child’s fairy tale of enchantment, unless in that fairy tale were to be found enshrined the highest of truths.”[15] The plain implication of these passages is that the story of Prospero, Ariel, and Sycorax is too fanciful to be conceived and related on its own account and must therefore be allegorical. By inferring from the play’s improbable elements

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[14] *Timeless Theme* 238, 132. See also Still, *Shakespeare’s Mystery Play* 6–7, 236–37.

[15] Lucy 28. A similar contention is made by Still:

> No one who has . . . any real insight into the workings of authentic genius, can be satisfied to think that Shakespeare, at the zenith of his creative power, produced a poetic drama which, though a lovely work of art, is nevertheless a meaningless fantasy written in the sheer caprice of unordered invention. . . . (*Timeless Theme* 137)

See also Still, *Shakespeare’s Mystery Play* 6–7, 236–37.

that its true meaning lies beneath its surface, these commentators implicitly affirm the validity of Bacon's absurdity criterion.

Bacon's brief but persuasive comments on the interpretation of fables, supplemented by those of like-minded critics like Still and Lucy, give us a good reason to regard *The Tempest* as an allegory. For the story it tells, like the myth of Jupiter and Metis, is too absurd to be regarded as one that its author wanted to compose and disseminate for its own sake. Following Bacon's lead, we should infer from the play's improbabilities, as Still and Lucy do, that it has a deeper meaning.

In order to solve fully the mystery that surrounds it, however, we must discover the specific meaning or meanings its author expected us to derive from its strange elements, and this task is fraught with formidable difficulties.

Allegorical Readings of *The Tempest*

Taking up the challenge, many commentators proffer specific allegorical readings of the play. For some time, the predominant view among literary critics has been that it is an allegory of early-modern European colonialism or imperialism.[16] Eric Cheyfitz, for example, says that the drama

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[16] See, e.g., Garber 852 ("*The Tempest* has been addressed by modern critics . . . as a colonialist allegory"); Albanese 71 ("what we talk about when we talk about *The Tempest* these days, is colonialism"). Readings in which the interpreters regard Ariel and Caliban as representations of indigenous populations oppressed by colo-

figures, among other things, the "imperialist rationale for the colonization of the New World and the subjugation . . . of its native inhabitants"; in his reading, Prospero represents the colonial or imperial "master" and Ariel the "slave."[17] Another widely accepted interpretation takes it to be a fable of art and creation in which Prospero stands for the artist as creator.[18] Many readers find autobiographical allegory in the play;[19] they regard the famous speech in which Prospero abjures his magic and vows to break his staff and drown his book as Shakespeare's farewell to his art.[20] Grace R. W. Hall argues that *The Tempest* is a Shakespearean mystery or

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nialism and also identify with them are often designated "postcolonial." See, e.g., Beck 88–94.

[17] Cheyfitz 158, 159. See also, e.g., Brown 60, 61 (emphasizing the "power relation" between Prospero and Ariel and, in particular, Ariel's "subjugation" by Prospero, which Paul Brown calls his "bondage"); Albanese 73 ("Arguably, Ariel is as deeply enslaved by the discourse of domination as is Caliban . . .").

[18] See, e.g., Garber 852; Dowden 379 ("I should describe Prospero as the man of genius, the great artist," who "finds his enchanted island, where he may achieve his works of wonder").

[19] See, e.g., Knight, *Crown* 224 (*"The Tempest* can be considered as Shakespeare's artistic autobiography").

[20] See *Tempest* 5.1.55–62. Quotations from the play are taken from the Royal Shakespeare Company edition, which was edited by Jonathan Bate and Eric Rasmussen and published by the Modern Library in 2008. Subsequent references to it are provided in the text.

Corpus Christi play that allegorically retells the biblical story of humanity; in her account Prospero figures Moses, and Ariel is the spirit of the law.[21] Emma Brockway Wagner understands it to be an allegory of the history of Christianity and, in particular, the protest movement that culminated in the Reformation; in her view, Prospero stands for "intelligent and spiritual Christianity," and Ariel figures the "spiritual imagination" through which humanity "perceives ethical and spiritual values and truths."[22] In *The Timeless Theme* (1936) and *Shakespeare's Mystery Play* (1921), Colin Still defends the thesis that *The Tempest* allegorizes the universal story of "the upward struggle of the human spirit . . . out of the darkness of sin and error into the light of wisdom and truth," a story that "is true to the spiritual experience of all mankind" and also finds expression in ancient myths and mysteries and other works of literature.[23] Many other allegorical interpretations have also been proposed.

Some of the proponents of specific readings like these believe that they capture the meaning or one of the meanings Shakespeare intended to convey by writing *The Tempest.* One of them is Emma Wagner, who supposes that her interpretation elucidates the author's "real thoughts" and

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[21] See Hall 22, 66.

[22] Wagner 2, 23, 51.

[23] *Timeless Theme* 237, 134 (emphasis omitted). See also Still, *Shakespeare's Mystery Play* 234–35.

"convictions" regarding ecclesiasticism.[24] Other commentators dismiss such readings, however, on the ground that they originate, not in the author's mind, but in the minds of his interpreters. Anne Barton, for instance, maintains that allegorical readings of the play tend to constitute unacknowledged departures from and elaborations of its text. After summarizing several of them, she writes, "Obviously, *The Tempest* cannot be about all these things. Probably, in fact, it is about none of them." According to Barton, commentators who find allegorical meaning in the play "feel that the heart of its mystery can be plucked out by means of some superimposed system of ideas."[25] She believes, in short, that such interpretations are arbitrary.[26]

Bacon's Criterion for Assessing the Validity of Allegorical Interpretations

In this case also, the dispute among commentators sends us in search of a criterion that can help us to adjudicate it, and

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[24] Wagner 5.

[25] Introduction 21–22.

[26] See also, e.g., Stoll 281 (allegorical readings of the play cannot be adopted "unless the intention of the author be of no primary importance, and meanings be not derived from the text but imparted to it"); Still, *Timeless Theme* 132 (*The Tempest* is often "treated as an allegory," but many such readings are "arbitrary"). In his edition of the play, Stephen Orgel takes the even more extreme position that "all interpretations are essentially arbitrary" (Introduction 12).

Bacon provides us with one in his discussion of ancient fables. Two statements he makes in *Of the Wisdom of the Ancients* are pertinent to the question of how we can determine whether any particular reading of an allegorical drama like *The Tempest* is arbitrary or valid. In the first passage, Bacon acknowledges that interpretations unrelated to authorial intentions can be superimposed upon allegories. "I know very well what pliant stuff fable is made of," he writes, "how freely it will follow any way you please to draw it, and how easily with a little dexterity and discourse of wit meanings which it was never meant to bear may be plausibly put upon it."[27] At the same time, by drawing a distinction here between the meanings that a fable was "meant to bear" and those that have been "put upon it," Bacon clearly implies that some allegorical interpretations are valid, and that it is a mistake to brush all of them aside, as Barton appears to do, in the belief that they are arbitrary superimpositions.

In the same essay, Bacon also describes the criterion he himself uses to determine whether any particular allegorical reading is valid:

> [B]eneath no small number of the fables of the ancient poets there lay from the very beginning . . . an allegory. . . . [I]n some of these fables, . . . I find a conformity and connexion with the thing signified, so close and so evident, that one cannot help believing such a signification to have

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[27] *Of the Wisdom* 695 (Preface).

> been designed and meditated from the first, and purposely shadowed out.[28]

When Bacon speaks of finding a conformity that is close and evident, he almost certainly has in mind the discovery that many improbable elements of the fable resemble and are explained by elements of the thing they are thought to signify. If many such parallels exist, he suggests, we must reject the hypothesis that the reading has been superimposed and presume instead that it correctly expresses at least one of the author's intended meanings.

Although Bacon presents the quoted statements in the form of unsupported conclusions, perhaps because he believes them to be self-evident truths, they are undergirded by verifiable facts and sound reasoning. The various allegorical readings that commentators on *The Tempest* put forward, some of which we have touched upon, constitute readily available concrete examples of the pliancy Bacon ascribes to fables.[29] Moreover, if we reflect upon what those interpretations have in common and why they differ, we can see at once why he says that it is easy to superimpose various meanings upon any allegorical story. The characteristic the readings share is that they conform with the play in some respects but not others. Interpreters who view *The*

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[28] *Of the Wisdom* 696 (Preface).

[29] After referring to some of these readings, Anne Barton observes that the play "will lend itself to almost any interpretation, any set of meanings imposed upon it: it will even make them shine" (Introduction 22).

Tempest as an allegory of colonialism, for example, single out and attach importance to the obvious parallel between the master-servant aspect of the Prospero-Ariel relationship and the subjugation to which colonizers often subject indigenous peoples. At the same time, they disregard other traits and actions that Shakespeare attributes to those characters, such as Ariel's spirituosity and Prospero's use of art or magic to harness his energies, presumably because they bear no discernible resemblance to colonialism. Although "there are . . . many literal differences between *The Tempest* and colonialist fictions and practice," as Meredith Anne Skura writes, "the similarities are taken to be so compelling" by the critics who understand the play to be about colonialism "that the differences are ignored." Such critics assume "that the similarities matter but the differences do not."[30]

What makes a fable pliant is the fact that, by chance alone, its elements are certain to resemble many things its author did not intend to allegorize by writing it, and each of those similarities has the potential to lend support to a different allegorical reading. By arbitrarily selecting and emphasizing different coincidental parallels, interpreters can superimpose upon a story like *The Tempest,* as Bacon points out, any number of different meanings it was never meant to bear. Thus interpreters who seize upon Prospero's domination of Ariel and Caliban may read *The Tempest* as an allegory of colonialism, whereas those who focus instead upon Prospero's abjuration of his magic may argue that it is

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[30] Skura 48, 49.

about the end of Shakespeare's literary career. And if plausibility is understood to require only a few points of correspondence, all such readings will sound plausible.[31]

Bacon's complementary statement that a fable sometimes conforms with the "thing signified" so closely that we must presume the signification to be intentional can also be defended, as we would expect, on the basis of facts and reasoning. Although the number of things that resemble such a story in one or two respects by chance is likely to be large, the number that happen to conform with it in ten or fifteen respects is certain to be much smaller. This makes it far more difficult to concoct out of coincidental parallels a credible and coherent reading that fits many of a fable's strange elements than it is to conceive of one that tallies with a few of them. If we try to think of things that resemble Prospero's domination of Ariel, for example, several institutions and practices suggest themselves immediately: colonialism, imperialism, slavery, the exploitation of workers by employers, and so forth. But if we try to imagine something that parallels not only that element of *The Tempest* but also Prospero's use of art or magic to harness the energies of a spirit imprisoned by a hoop-shaped witch to the task of wielding power over nature, nothing comes to mind. Indeed, in this case and others like it, superimposing upon the fable

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[31] See Van Doren 322 ("One interpretation of 'The Tempest' does not agree with another," and "there is deeper trouble in the truth that any interpretation, even the wildest, is more or less plausible").

a reading that fits its text in many respects may prove to be impossible.

Bacon's conformity criterion gains support from other facts as well. The subject matter an author chooses to present in the form of an allegory is likely to be a single thing deemed to be important, a unified philosophy, institution, practice, or set of beliefs. And an author with allegorical intentions is more likely to write a story that conforms with the "thing signified" in many respects than one that does so only slightly. In addition, if a fable containing many unrealistic elements is written, it is unlikely that some of them are expected to function as components of an allegory, whereas others are meant to be taken literally; it is far more probable that all such elements are designed to carry symbolic meanings.

From these reasonable assumptions, it follows that if numerous elements of a fable conform with the elements of a coherent philosophy, and for this reason chance and the interpreter's "dexterity" can be ruled out as explanations of the parallels, the likeliest and perhaps the only possible explanation is, as Bacon suggests, that the author deliberately devised the story in such a way that it would allegorize that philosophy.

Considerations like these may explain not only why Bacon has confidence in his conformity criterion but also why some modern critics reject any allegorical interpretation of *The Tempest* that fits and explains a few of its elements but is inconsistent with others. One such critic is Burton Raffel, who describes the widely accepted notion that the play is about colonialism as "a singularly far-fetched reading of *The*

Tempest as a whole." Inasmuch as Prospero did not "choose to land on the island" but was forced by exigent circumstances to go ashore anywhere he could, Raffel argues, he "is neither a colonizer nor an imperialist."[32] Raffel thus presupposes that if Shakespeare had intended to write a play about colonialism, he would have brought its text into conformity with that institution, not in one or two respects, but in many.

Writing in the same vein, Colin Still maintains that a valid interpretation of *The Tempest* "must explain all the peculiarities of the text."[33] Like Raffel, Still assumes that the author who writes an allegory typically devises many story elements that correspond to elements of the thing signified. In addition, Still asserts that his own allegorical reading of the play "rests upon . . . a vast amount of internal evidence,"

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[32] Raffel xxii, xxi. Another story element Raffel finds to be inconsistent with the colonialist interpretation is the fact that until Caliban assaults Miranda, "Prospero is reasonably gracious and kind." See also Lindley, Introduction 39 ("[I]f it is a play about colonialism, Prospero is a very odd colonist indeed. He did not choose to voyage to his island, has no interest in founding an outpost of Milan, and no desire to turn the riches of the island . . . into tradeable commodities. . . ."); Beck 92 (inasmuch as the postcolonial reading of *The Tempest* does not fit its text in certain respects, it has "obvious limits"); Kermode, Introduction xxv ("there is nothing in *The Tempest* fundamental to its structure of ideas which could not have existed had America remained undiscovered").

[33] *Timeless Theme* 133. See also Still, *Shakespeare's Mystery Play* 7. Still also believes that *The Tempest* is probably "the expression of a definite and coherent philosophy" (*Timeless Theme* 238; see also Still, *Shakespeare's Mystery Play* 237–38).

which rules out the possibility that he merely "picked out a few convenient passages and exploited a few unimportant coincidences."[34] Thus he takes the position, as does Raffel, that a few parallels, which may exist by chance and not by design, do not a valid interpretation make. Both critics evidently agree with Bacon that every fable lends itself to multiple interpretations, some of which are invalid, and that the hallmark of a valid one is a close connection between the story and the reading.

Because Bacon's conformity criterion is well supported by facts and reasoning and finds favor among modern critics, it is appropriate, in my view, to adopt it as a standard by which to assess the validity of allegorical readings in general. If fourteen elements of *The Tempest* resemble fourteen elements of Bacon's natural philosophy, we must perforce infer from that close conformity, as Bacon does in his interpretation of fables, that Shakespeare meant to allegorize that philosophy in the play.

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[34] *Timeless Theme* 236.

3. The Allegory of Bacon's Natural Philosophy in *The Tempest*

Discoverers of the Baconian Allegory

IN 1872, H. N. Hudson observed that in Shakespeare's depiction of the vast power Prospero wields over the physical world, "we seem to have a kind of prophecy" that humanity will attain two of the principal objectives of Bacon's natural philosophy, namely, "taming the great forces of Nature to man's hand, and harnessing them up into his service." According to Hudson, we may "regard Prospero as prognosticating in a poetical form those vast triumphs of man's rational spirit which the philosopher [Bacon] foresaw and prepared."[35]

Later in the nineteenth century, other researchers contended that *The Tempest* figures some of Bacon's speculations concerning the rarefied spirits that, in his philosophy, inhabit and energize living and inanimate bodies. Constance M. Pott noted that his theory of spirits, which she called his "lovely ideas of all-pervading life," is in evidence "throughout his writings, and pre-eminently in . . . *The Tempest*."[36] Theron S. E. Dixon proposed the same reading of the play,

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[35] Hudson 430, 429. Because the characters in the play "affect us as persons, not as propositions," however, Hudson was unwilling to describe it as an allegory rather than a drama; to do so, he thought, would "misrepresent[] its quality."

[36] *Francis Bacon* 218.

describing Ariel as a "perfect embodiment" of the Baconian conception of spirits.[37]

Gustavus Holzer, a German scholar, held in 1904 that *The Tempest* represents in allegorical form several elements of Bacon's natural philosophy. In *Shakespeare's* Tempest *in Baconian Light,* he described the play as "a dramatization of Bacon's *Magna Instauratio."* Bacon composed it, Holzer wrote, in order "to give a dramatic relief or foil to . . . the great object of his thought and aspirations," which was "the final victory of [his own] Natural Philosophy over Scholastic Learning."[38] Holzer also pointed out, as I show in other parts of the discussion, that Prospero's dominion over nature, his magic, his books, and the witch Sycorax stand for specific tenets and speculations set forth in Bacon's essays on the conquest of nature.

Adopting a similar interpretation, Edwin Reed asserted in the brief introduction to his 1909 edition of *The Tempest* that "[i]ts method is precisely the one laid down . . . in Francis Bacon's system of philosophy; in other words, the regeneration of the world through such a knowledge of arts and sciences as that philosophy, when full developed, was expected by its author to reveal." According to Reed, the play afforded its author, Bacon, "the opportunity to illustrate, on a scene of action remote from the inhabited world, . . . that command over Nature" that he believed natural philosophy would eventually confer upon mankind. In Reed's view, as in

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[37] Dixon 414.

[38] *Shakespeare's* Tempest 104, VI (emphasis omitted).

Hudson's, Bacon's expectation that scientific and technological progress would improve the quality of human life is fulfilled in the drama, where "[m]an's empire over nature . . . is complete."[39]

A few years later, Edward George Harman proffered another Baconian reading of *The Tempest* in *Edmund Spenser and the Impersonations of Francis Bacon* (1914). Like Holzer, Harman contended that Bacon was the play's author and drew attention to multiple Baconian ideas he deemed to be allegorized in its text.[40] The main purpose of *The Tempest,* Harman wrote, was to allow Bacon "to leave behind him a parable . . . of his scientific theory, and of the results to the human race which he expected from it when it had been applied in practice." Under the figures of Prospero and Ariel, "Bacon . . . represented . . . the cherished dream of his life, namely, the power which man is to obtain over the forces of nature through scientific experiment and discovery." According to Harman, as I also show when examining the specific parallels individually, Ariel and his strange traits stand for "the 'spirit in all tangible bodies'" and the characteristics Bacon attributes to it in the conjectural part of his natural philosophy. And "[t]he liberation of this 'spirit' and its temporary arrest and employment by Prospero is a poetical allegory of what we now term the 'harnessing of the

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[39] Reed, Introduction XXIII, XXVI, XXIV.

[40] See *Edmund Spenser,* ch. 4.

forces of nature.'"[41] Harman also summarized this reading in a later book, *The "Impersonality" of Shakespeare* (1925).[42]

In our own time, Peter Dawkins has written that, among other things, "*The Tempest* . . . appears to be a dramatised portrayal of Bacon's scheme for the advancement and proficience of learning." If the Baconian program were implemented, Dawkins notes, "human beings would, like Prospero, be able to command the very elements of nature" through a practical knowledge of its laws.[43]

Evidence of the Baconian Allegory

In support of their interpretations, these authors cite some elements of the play that parallel elements of the Baconian system. Because a small number of resemblances may exist by chance, however, we should not presume the Baconian reading to be valid unless the drama's text conforms with Bacon's thought very closely. In order to see how much conformity there is, we must compare the following fourteen elements of *The Tempest* with fourteen of the recommendations and speculations that figure in Bacon's natural philosophy:

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[41] *Edmund Spenser* 123. See also Harman, *"Impersonality"* 191–92.

[42] See *"Impersonality,"* ch. 11.

[43] Dawkins 12. For a contrary view, see Chambers 306 ("To prove . . . in detail that it [*The Tempest*] is not a formal exposition of the Baconian philosophy would carry me into regions of controversy which I do not propose . . . to tread").

1. Prospero wields power over nature.

2. The source of Prospero's power over nature is his art.

3. The source of Prospero's power over nature is magic.

4. Ariel is a spirit who alters the ordinary processes of nature.

5. Ariel can make himself invisible and does his work when in that state.

6. Ariel was originally imprisoned in a tree.

7. Ariel wanted to escape from his imprisonment.

8. Ariel is an airy spirit who also flames.

9. Ariel's airiness predominates over his fieriness.

10. Only by using art to harness the energies of Ariel and other spirits can Prospero wield power over nature.

11. A witch, Sycorax, imprisoned Ariel because she could not exact obedience from him and was powerless to release him and to harness him to the task of transforming nature.

12. The witch Sycorax took on the shape of a hoop.

13. Unless Prospero has access to the books he treasures, which evidently contain the art he discovered by engaging in study and research, he lacks the power to gain control over spirits and the physical world.

14. By discovering art through study and research and using it to compel Ariel and other spirits to alter the course of natural and human events, Prospero increases his power over the physical world and attains his goals.

I discuss each Shakespearean element and its Baconian counterpart under a separate heading or subheading that describes in the abstract the subject matter common to each pair. Elements 1–3 conform with three of the ideas Bacon sets forth in the methodological portion of his system; those parallels are examined under the heading "The Conquest of Nature and Methods of Achieving It." Elements 4–10 correspond to seven of the ideas that comprise Bacon's speculative theory of spirits and are considered under the heading "Spirits and Their Role in the Conquest of Nature." Elements 11–12 represent ideas that belong to Bacon's critique of the Aristotelian natural philosophy, which he believes to be inimical to advancement in the arts and sciences; those comparisons are made under the heading "Impediments to the Conquest of Nature." Element 13 stands for Bacon's conception of the vital contribution he thinks natural history will make to scientific progress and is considered under the heading "The Role of Books and Knowledge in the Conquest of Nature." Element 14 encapsulates Bacon's natural philosophy as a whole and is discussed under the heading "The Conquest of Nature and Methods of Achieving It Summarized." In each case, I begin by juxtaposing a brief summary of the Shakespearean element with a similar encapsulation of the Baconian one so that the parallels are readily apparent. I then describe the Shakespearean element more fully

and locate it in the play. This is followed by documentation and explication of the corresponding Baconian element. In each of these sections, I demonstrate that the element extracted from the play conforms with and figures a distinctive idea or set of ideas taken from one or more of Bacon's philosophical writings.

The Conquest of Nature and Methods of Achieving It

The Conquest of Nature as a Goal
Attained or Attainable

Shakespeare	**Bacon**
1. Prospero wields power over nature.	1. Humanity has the potential to gain dominion over nature.

Shakespeare

Throughout the play, Prospero's awesome power over the physical world is on display. Early on we learn, for example, that he has "raised" the eponymous tempest, which is raging when the drama begins (5.1.7). In its final scene, Prospero announces that he has performed several other stupendous feats of the same kind:

> I have bedimmed
> The noontide sun, called forth the mutinous winds,
> And 'twixt the green sea and the azured vault
> Set roaring war: to the dread rattling thunder
> Have I given fire, and rifted Jove's stout oak

> With his own bolt: the strong-based promontory
> Have I made shake and by the spurs plucked up
> The pine and cedar. (5.1.46–53)

As the story told in the play unfolds, we see that Prospero's power to alter the usual course of nature makes it possible for him to solve his problems and attain his goals.

Bacon

The "main intention" of his natural philosophy, Bacon writes, "is that nature serve human affairs and interests."[44] If humanity follows his advice, he argues, it can unravel nature's secrets, gain dominion over the physical world, and improve its lot. In the preface to *The New Organon* (1620), Bacon summarizes his vision of scientific and technological progress and exhorts his readers to embrace it:

> [I]f it be dear to the heart of any mortal men not to stick only with existing discoveries but to penetrate further, and . . . to conquer nature in operation, and . . . to acquire certain . . . knowledge, let such people . . . join hands with me as true sons of the sciences to leave behind nature's entrance halls (trodden by countless feet), and at last throw open the doors to her inner sanctum.[45]

Shifting metaphors, Bacon holds that the first steps in this process are "to slice into nature" and discover its laws so

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[44] *New Organon* [Rees] 301 (Bk. 2, aphorism 31).

[45] *New Organon* [Rees] 59 (Preface).

that "science may emerge . . . from the very nature of things."[46] Investigation of the physical world will reveal how it can be "forced from its own condition"[47] and "made as it were new by . . . the hand of man."[48] Once people have gained dominion over nature, they will be able to produce "a line of discoveries which may to some degree subdue and mitigate their needs and miseries."[49]

By forcing nature from its own condition and making it new again and again, Prospero provides us with a concrete representation of the scientifically sophisticated generations of the future, those that will realize the Baconian vision in which mankind conquers nature and thereby betters its own condition. Prospero's amazing feats "anticipate[]," as Holzer puts it, what humanity will be able to achieve once it has gained "full . . . command over Nature."[50]

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[46] *New Organon* [Rees] 443 (Bk. 2, aphorism 52).

[47] *Plan* 39.

[48] *Of the Dignity* 294 (Bk. 2, ch. 2).

[49] *Plan* 37. See also, e.g., Zagorin 30 (in Bacon's view, "the proper object of philosophy in seeking truth must be *scientia operativa* or a science productive of works for the relief and improvement of human life").

[50] *Shakespeare's* Tempest 2 (emphasis omitted).

The Role of Art in the Conquest of Nature

Shakespeare	**Bacon**
2. The source of Prospero's power over nature is his art.	2. The means by which humanity can increase its power over the physical world is to discover art and use it to force nature to deviate from its usual course.

Shakespeare

In Act 1, scene 2, Prospero's daughter Miranda conjectures that the origins of the tempest lie in her father's art: "If by your art, my dearest father, you have / Put the wild waters in this roar, allay them" (1.2.1–2). And her surmise soon proves to be correct. Prospero's art has enabled him not only to raise the tempest but also to prevent it from causing the death and destruction that Miranda believes she witnessed. When she tells him that she has "suffered" (1.2.5) along with the injured passengers, he reassures her that, thanks to his art, they were not actually harmed:

> Wipe thou thine eyes, have comfort.
> The direful spectacle of the wreck, which touched
> The very virtue of compassion in thee,
> I have with such provision in mine art
> So safely ordered that there is no soul—
> No, not so much perdition as an hair
> Betid to any creature in the vessel

> Which thou heard'st cry, which thou saw'st sink.
> (1.2.30–37)

And when Prospero enumerates his nature-altering accomplishments in Act 5, scene 1, he attributes all of them to his "so potent art" (5.1.55).

Bacon

Bacon refers to the modification and renewal of nature by humanity and the methods by which changes in its condition are brought about as "art." He writes, for example, that "nature, like Proteus, is forced by art to do what would not have been done without it,"[51] and that art is "nature with man to help."[52] He also holds that art empowers mankind not only to "transmute . . . nature"[53] but to "alter it radically and shake it to its depths."[54] In an illuminating analysis of Bacon's natural philosophy, Sophie Weeks explains that in his program "art refers to the shifting of the current system [of nature] out of its habitual course in order to actualise hidden facets of nature,"[55] the process he calls "binding" or "vexing" nature. For Bacon, according to Antonio Pérez-

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[51] *Description* 101 (ch. 2; emphasis omitted).

[52] *Of the Dignity* 295 (Bk. 2, ch. 2).

[53] *Of the Dignity* 294 (Bk. 2, ch. 2).

[54] *Description* 103 (ch. 2).

[55] Weeks 132.

Ramos, art is "a guided form of utilizing Nature's own processes," and as examples of what the philosopher means by art, Pérez-Ramos cites "[a]gricultural techniques, chemical synthesis, and, in our age, genetic engineering."[56]

Prospero's use of his art to raise the tempest and bedim the noontide sun, as H. N. Hudson and other researchers concluded long ago, figures the Baconian idea that by developing new and improved arts and sciences, humanity can take control of the physical world.

The Role of Magic in the Conquest of Nature

Shakespeare	**Bacon**
3. The source of Prospero's power over nature is magic.	3. The means by which humanity can discover the hidden laws of nature and gain the power to manipulate its processes is the science of magic.

Shakespeare

A moment after he tells us that he derives his extraordinary power over nature from his "so potent art," Prospero refers to that power or its source as "this rough magic" (5.1.55). Similarly, when he sets his cloak aside in Act 1, scene 2, he says, "Lie there, my art" (1.2.30), but when he asks Miranda

[56] Pérez-Ramos 148.

to help him take it off, he calls it his "magic garment" (1.2.29). Although Prospero generally attributes his power to art, he shifts on these occasions to the word *magic,* which evidently carries a similar meaning.

The play strongly suggests that Prospero acquired his art or magic by doing research and gaining knowledge. He informs Miranda that, when he was the Duke of Milan, he was "transported / And rapt in secret studies" (1.2.90–91), and that some of the books he took with him into exile are more valuable to him than his dukedom (1.2.193–95). We are also told that "without them [his books] / He's but a sot . . . nor hath not / One spirit to command . . ." (3.2.87–89). Taken together, these passages imply that Prospero's books contain precious knowledge he obtained by researching esoteric subjects, and that this knowledge is the source of the art or magic he uses to redirect the energies of spirits. Although Shakespeare does not spell out all the details, the inference that "Prospero's power does come from his knowledge, and specifically from his books," is a reasonable one drawn by many readers of *The Tempest.*[57]

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[57] Garber 870. See also Holzer, *Shakespeare's* Tempest 4 ("Prospero . . . produces all his magic feats with the help of his books"; emphasis omitted); Curry 165 ("Prospero's power . . . is derived from the judicious employment of certain arcane mysteries found in his books of magic"); Spiller 36 ("The book and the kind of knowledge that it represents give Prospero the ability to control nature . . .").

The magic of Prospero is not black or "demonic" magic, which conjures evil spirits for the purpose of doing harm,[58] but rather white or "natural" magic, which seeks "to understand and control hidden causes of natural phenomena" and is used for good.[59] As Frances A. Yates puts it, Prospero's

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[58] See, e.g., Cobb 175 ("Prospero . . . rejects 'black' magic, that is, magic performed to aggrandise the ego, gain power over others and do harm"); Curry 165 ("Prospero's enchantments . . . are in no sense the products of Black Magic, nor are the ministers whom he employs the demons and devils of superstition . . ."); Kermode, Introduction xli, xlviii (Prospero's power "is the antithesis of the black magic of Sycorax," which serves "evil purposes").

[59] Kiernan 228. See also, e.g., Dobrée 18 ("[H]ere in Prospero is one dealing in white magic, as did in actual life . . . Dr. John Dee. Prospero was, in the manner of . . . Dee . . . controlling certain forces of nature"); D. James 64 ("the magic of Prospero is wholly good, and belongs to a learned, noble, and spiritual life"); Kernan 155–56 ("Shakespeare was careful, as many studies of *The Tempest* have shown, to associate his magician with the most . . . intellectually respectable tradition of magic, the Hermetic or Neoplatonic system of white magic . . ."). On the distinction between natural and demonic magic generally, see Cassirer 151–52 ("the latter is based on the acceptance of supernatural forces whereas the former wants to remain completely within the framework of nature . . . , claiming for itself no method other than inductive observation and the comparison of phenomena"); Holt 92 (the former "often received the label 'experiment'" and was known for its "manipulation of natural but occult causes," whereas the latter was labeled "'conjuring'" and was known for its "manipulation of demons"). For the history of these different types of magic and complexities omitted from the simplified summary offered here, see, e.g., Copenhaver.

magic is not “low and filthy witchcraft and sorcery” but “the high intellectual and virtuous magic of the true magus.”[60] In stark contrast to the magic of the “damned witch Sycorax,” who was guilty of “mischiefs manifold, and sorceries terrible” (1.2.311, 312), the natural magic practiced by the magus is, in the words of its leading sixteenth-century exponent, Heinrich Cornelius Agrippa von Nettesheim (1486–1535), “the pinnacle of natural philosophy.”[61] “Observing the powers of all things natural,” Agrippa writes, “it brings into the open powers stored away and lying hidden in nature” so that “astonishing wonders often result.”[62] As several commentators point out, the magic of Prospero is akin to natural magic in that it is grounded in knowledge and allows him to perform amazing and beneficial feats (like protecting the ship’s passengers from harm during the tempest) by shifting

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[60] *Shakespeare’s Last Plays* 94. See also Yates, *Occult Philosophy* 187.

[61] Qtd. in Copenhaver 285. See also Rossi, *Francis Bacon* 19 (for the natural magician Giambattista della Porta, “magic was the climax of natural philosophy”).

[62] Qtd. in Copenhaver 285–86. See also Debus 13 (“natural magic was far removed from the taint of necromancy” and derived its power from “the observational study of the unexplained or occult forces of nature”); Nauert 229 (for Agrippa and other natural magicians, “[m]agic . . . was not a series of diabolical rites and incantations, but a high and holy philosophy” that “allowed man to make use of natural forces”).

nature out of its usual course.[63] In these respects, Prospero's magic and Agrippan natural magic obviously resemble what is now called applied science.[64] Prospero is, in short, "the magus as scientist."[65]

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[63] See Holzer, *Shakespeare's* Tempest 3 ("Prospero must be supposed to have acquired . . . books of Natural Magic"; emphasis omitted); Kermode, Introduction xlvii–xlviii ("as a mage," Prospero engages in the "exercise of virtuous knowledge" and "controls nature" in the manner described by Agrippa); Kermode, "Ariel" 143 ("With . . . demons Prospero has no direct communication, and in this respect he exactly resembles white magicians like Agrippa"); Yates, *Shakespeare's Last Plays* 93 ("Prospero, as a magus, appears to work on the lines indicated in . . . the *De occulta philosophia* [1533] of . . . Agrippa"); Copenhaver 287 ("the book that . . . Prospero vows to drown is either Agrippa's or one very like it"). In the following passage from Agrippa, the close connection between the effects produced by Prospero's magic and those that Agrippan natural magic seeks to bring about is apparent:

> [M]agicians are like careful explorers of nature only directing what nature has formerly prepared, . . . as if someone made roses flower in March . . . or even more remarkable things such as clouds, rain, thunder . . . . (Qtd. in Rossi, *Francis Bacon* 19)

[64] See, e.g., Copenhaver 22 ("magic resembles science: both theorize about nature, and both underwrite practices that aim to change nature"); Copenhaver 315 (natural magicians like Agrippa "treat what we would call technology as practical magic"); Gaukroger 19 (like scientific works in our own time, Giambattista della Porta's book on natural magic discusses "practical questions in metallurgy and optics").

[65] Yates, *Shakespeare's Last Plays* 96, 97. See also, e.g., H. Smith 5 ("The forces he [Prospero] commands are those of nature; he

Bacon

Bacon defines magic as "the science which applies the knowledge of hidden forms," by which he means the laws governing physical matter, "to the production of wonderful operations; and . . . displays the wonderful works of nature."[66]As Paolo Rossi points out, his definition of magic closely resembles Agrippa's definition of *natural* magic.[67] Like Agrippa and other natural magicians, Bacon holds that "[t]he highest kind of natural-philosophical knowledge . . . yields magic, the most powerful form of operative knowledge available to human beings."[68]

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would be regarded by a Jacobean audience in much the way a modern audience views a scientist").

[66] *Of the Dignity* 366–67 (Bk. 3, ch. 5). Bacon defines the word *forms* as follows: "[N]othing really exists in nature besides individual bodies, carrying out pure, individual acts according to law. . . . It is this law . . . that I understand by the name of forms. . . ." (*New Organon* [Rees] 203 [Bk. 2, aphorism 2; emphasis omitted]; see also, e.g., Anderson, *Philosophy* 290 ["The form is the law of nature's operation"]).

[67] See *Francis Bacon* 18–19, 21. One obscure phrase common to Agrippa's definition and that of Bacon, "uniting actives to passives," is omitted from the latter as quoted here but is included in the passages excerpted from the writings of both authors by Rossi (see *Francis Bacon* 18–19, 21; Bacon, *Of the Dignity* 367 [Bk. 3, ch. 5]).

[68] Rees, Introduction, Instauratio magna: *Last Writings* xxxvi–xxxvii.

Bacon thought that natural magic was one of the "sciences" the objectives of which were "noble."[69] Accordingly, he allowed that tradition to exert a great deal of influence upon his approach to the investigation of nature.[70] From natural magic, he borrowed his natural philosophy's most basic tenet, the idea that by discovering its inner workings, humanity can gain dominion over the physical world.[71] Although Bacon criticizes magic on ethical grounds and advocates its reformation, he describes his writing of the *Sylva sylvarum* (1626) as "a high kind of natural magic"[72] and includes in that essay several experiments he borrowed from a treatise by the Neapolitan magus Giambattista della

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[69] *Advancement* 143 (Bk. 1).

[70] See Serjeantson 690 ("the tradition of natural magic" was "of vital importance in shaping Bacon's own approach to the study of nature"); Rossi, *Francis Bacon* 32 ("According to Bacon, magic endeavours to dominate and to improve nature; and for this it should be imitated"); Zagorin 41 ("That the influence of natural magic was an important factor in leading Bacon . . . to base his natural philosophy on the necessity of works seems quite probable").

[71] See, e.g., Rossi, "Bacon's Idea" 31 (Bacon "borrows from the magico-alchemical tradition the idea that man can attempt to make himself the master of nature"); Nauert 237–38 (Bacon's "emphasis on the power and practical benefits which man can derive from knowledge" and his "trust that man can master nature" are "strikingly similar" to the ideas held by the natural magicians).

[72] *Sylva* 378 (Century 1, sec. 93).

Porta (1535–1615).[73] Following in the footsteps of Agrippa, who cites the artificial production of clouds, rain, and thunder as an example of natural magic, Bacon includes the “raising of tempests” in his list of useful technologies scientists should strive to invent.[74] Thus, for Bacon, as for many other Renaissance thinkers, magic is not black magic but a legitimate method of increasing humanity’s power to manipulate natural phenomena.[75] In summarizing what Bacon means by magic, Pérez-Ramos says that it is roughly equivalent to what is known today as applied science.[76]

In Bacon’s philosophy, both *art* and *magic* evidently refer to the process of wielding power over nature but at different levels of generality.[77] Whereas he appears to count as art any specific method of shifting nature out of its habitual course, he designates the general and systematic proce-

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[73] See Serjeantson 690.

[74] *Magnalia* 489. As Stephen Orgel points out, the opening scene of *The Tempest,* in the context of Bacon’s promise that his natural philosophy will enable humanity to raise storms at will, “constitute[s] a scientific fantasy, marvellous, but not at all inconsistent with reason” (Introduction 20).

[75] See Rees, “Francis Bacon (1561–1626)” 66.

[76] See Pérez-Ramos 112 (“For Bacon *magia* [magic] was probably the nearest equivalent to our ‘applied science’ . . .”).

[77] See Rossi, *Francis Bacon* 19 (“this definition of natural magic is akin to Bacon’s concept of an art following faithfully in the footsteps of nature”).

dures whereby humanity discovers art and uses it to bind nature "the science of magic."[78]

The conception of magic Prospero embodies thus conforms in several respects with the one we find in Bacon's writings. Both types of magic are derived from investigations that yield knowledge; both alter the ordinary processes of nature; both resemble the natural magic of Agrippa; both are similar to what is now called applied science; and both are used for the benefit of humanity. In Bacon's vision of the future, humanity masters natural magic, and Prospero's use of magic in *The Tempest* concretizes the attainment of such mastery. As Holzer puts it, "the magical exploits and feats of Prospero . . . are as it were, anticipated by the Poet for future generations, when men would know true Natural Magic, i.e. have full . . . command over Nature."[79] In addition, when Prospero refers to the source of his own power to alter the processes of nature, he uses the word *magic* as well as the word *art,* just as Bacon does when he describes the means by which humanity can take control of the physical world. In all these ways, the magic of Prospero figures the magic of Bacon.

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[78] Weeks 143.

[79] *Shakespeare's* Tempest 2 (emphasis omitted).

Spirits and Their Role in the Conquest of Nature

Spirits and Their Role in the Natural World

Shakespeare	**Bacon**
4. Ariel is a spirit who alters the ordinary processes of nature.	4. Spirits, which are rarefied bodies that inhabit and energize all tangible matter, bring about most of the effects of nature.

Shakespeare

Ariel's most prominent characteristic is his spirituosity. Readers of *The Tempest* learn from the "Names of the Actors," which were first appended to its text in the Folio of 1623, that he is a spirit. Prospero addresses him as "spirit" many times (1.2.224, 238, 249, 486; 4.1.180; 5.1.7, 22, 91, 258, 285), and Ariel, in his turn, assures his master that he will do his "spiriting gently" (1.2.349).

Ariel also possesses an amazing power to alter the physical world and its processes. Throughout the play and in various ways, he produces spectacular effects in nature and changes the course of natural and human events. In Act 1, scene 2, for example, we learn that the spirit has "[p]erformed . . . the tempest" (1.2.225), causing, among other things, "fire and cracks / Of sulphurous roaring" (1.2.234–35) and forcing the passengers on the king's ship to "quit the vessel" (1.2.244).

Bacon

Bacon expounds his speculative theory of spirits in several of his natural-philosophical essays. In *An Inquiry concerning the Ways of Death* (after circa 1611), he says that "every inanimate and . . . living being" "has and holds . . . a spirit . . . within itself," and he describes this spirit as "a tenuous body distributed and invested in the grosser parts of the thing."[80] He also presents this doctrine in *The History of Life and Death* (1623): "In every tangible substance there exists a spirit hidden and invested in the grosser body. . . ."[81] Bacon elaborates upon the nature of spirit in his posthumously published *Sylva sylvarum,* where he says that it is "a natural body, rarified to a proportion, and included in the tangible parts of bodies" and is "never (almost) at rest."[82]

Bacon's conception of spirits is grounded in his distinctive theory of matter, according to which "matter exists in two states: tangible and pneumatic."[83] Whereas the former is dense, heavy, and passive, the latter is rarefied, weightless,

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[80] *Inquiry* 319.

[81] *History of Life* 347 (Rule 2).

[82] *Sylva* 381 (Century 1, sec. 98). See also, e.g., Rossi, *Francis Bacon* 13 ("Bacon declares that a spirit or spiritual (pneumatic) body is contained in all substances").

[83] Rees, "Matter Theory" 110.

and active. "Pneumaticals" or "spirits" are composed of matter of the latter kind, which is "a sort of thin vapour."[84]

The spirits Bacon posits "rule over and work upon the parts" of the things that contain them and play a creative role in the physical world.[85] "[F]rom them and their motions," he writes, "principally proceed . . . most of the effects of nature."[86] Among the effects Bacon mentions are maturation, dissolution, and putrefaction.[87] Lynn Thorndike provides several other examples, including this one: "Quicksilver is the coldest of metals because it is the fullest of spirit."[88]

Thus, as a spirit who produces effects in nature, Ariel represents two of the peculiar ideas we find in the speculative part of Bacon's natural philosophy. As E. G. Harman puts it, "'Ariel and all his quality' are the 'spirits' in all tangible

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[84] Rees, "Francis Bacon and *spiritus"* 268. See also, e.g., Rees, "Matter Theory" 110; Rees, "Francis Bacon's Semi-Paracelsian Cosmology" 85; Rees, Introduction, Instauratio magna *Part Two* lxxxiv.

[85] Bacon, *Inquiry* 309. See also Rees, "Matter Theory" 110.

[86] *Sylva* 381 (Century 1, sec. 98). See also Rees, "Matter Theory" 110 ("spirits . . . produce most of the processes observable in the terrestrial world"); Rees, "Francis Bacon and *spiritus"* 268 (spirit is "the source of activity in the universe").

[87] See, e.g., *History of Life* 159 (Major Observations, sec. 1); *History of Life* 347 (Rule 2); *Sylva* 381 (Century 1, sec. 98).

[88] Thorndike 452.

bodies, described by Bacon . . . as the most potent things in nature."[89]

The Invisibility of Spirits

Shakespeare	**Bacon**
5. Ariel can make himself invisible and does his work when in that state.	5. Spirits and their activities are invisible.

Shakespeare

Prior to sending Ariel forth to perform a task in Act 1, scene 2, Prospero commands him to make himself invisible: "Be subject to no sight but thine and mine: invisible / To every eyeball else. Go take this shape / And hither come in't . . ." (1.2.355–57). Later, when Ariel plays upon a pipe and tabor and lures Caliban, Stephano, and Trinculo, who are plotting to murder Prospero, to a "filthy-mantled pool," the spirit is invisible to the conspirators, as we learn from Stephano: "I would I could see this taborer: he lays it on" (4.1.196; 3.2.146–47). When Ariel reports the episode to his master, Prospero commands him not to alter his status: "Thy shape invisible retain thou still" (4.1.200).

[89] *"Impersonality"* 192.

Bacon

In *The History of Life and Death,* Bacon tells us that the spirit he posits, albeit it "something real with place, and extension," is "a body thin, and invisible."[90] Referring to spirits, he also says, in the *Sylva sylvarum,* that "the motions of the minute parts of bodies, which do so great effects, . . . have not been observed at all; because they are invisible, and incur not to the eye."[91] Because of their invisibility, spirits can be mistaken for air or thought not to exist, and their activities can remain undiscovered because "whatsoever is invisible . . . is little inquired."[92]

Ariel's invisibility figures this element of Bacon's theory of spirits.

The Imprisonment of Spirits

Shakespeare	Bacon
6. Ariel was originally imprisoned in a tree.	6. Spirits are imprisoned within all tangible matter.

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[90] *History of Life* 349, 347 (Rule 2, Explanation).

[91] *Sylva* 381 (Century 1, sec. 98). See also, e.g., Rees, "Matter Theory" 110 (in Bacon's theory "[t]here are many kinds of 'pneumaticals' or 'spirits' but all are invisible").

[92] *Sylva* 380 (Century 1, sec. 98).

Shakespeare

In Act 1, scene 2, Prospero informs us that when he first landed upon the island, Ariel was "[i]mprisoned" in "a cloven pine" (1.2.326, 325).

Bacon

Bacon holds in *The History of Dense and Rare* (1658) that "[e]very tangible body here with us has a pneumatic body or spirit associated with and shut up in it."[93] In *The History of Life and Death,* he explains that in some cases the "[s]pirit is detained . . . by close confinement as if in a prison."[94] Elsewhere he says that one way of "confining and restraining spirit in solid and earthy matter" is by "simple imprisonment."[95]

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[93] *History of Dense* 165. See also *History of Dense* 63 ("attached pneumatics are those which are not found on their own or free but only enclosed in tangible bodies and which they commonly call spirits").

[94] *History of Life* 159 (Major Observations, sec. 2). See also, e.g., Rees, Introduction, *Philosophical Studies* lx (in Bacon's view "all terrestrial bodies contain imprisoned spirits").

[95] *Of the Wisdom* 760 (ch. 29).

"[I]n Ariel is represented," as Harman observes, "the 'spirit in all tangible bodies' which, in Bacon's peculiar theory, has been . . . imprisoned by gross matter."[96]

The Desire of Spirits to Escape Imprisonment

Shakespeare	**Bacon**
7. Ariel wanted to escape from his imprisonment.	7. Inanimate spirits yearn to escape from their imprisonment in tangible bodies.

Shakespeare

In a speech addressed to Ariel, Prospero reveals that the spirit's confinement was a painful experience:

> Thou best know'st
> What torment I did find thee in: thy groans
> Did make wolves howl and penetrate the breasts
> Of ever-angry bears; it was a torment
> To lay upon the damned . . . (1.2.335–39)

Our natural supposition that Ariel must have been eager to escape from that predicament is confirmed when he thanks Prospero for setting him free (1.2.343) and when Prospero's threat to reimprison him in the "knotty entrails" of a tree (1.2.345) cows him into promising to obey his master's

[96] *"Impersonality"* 192.

orders: "Pardon, master: / I will be correspondent to command . . ." (1.2.347–48).

Bacon

In *The History of Life and Death,* Bacon asserts that inanimate substances contain spirits of one kind, which he designates "non-living" or "inanimate," and that living things harbor, in addition to those, spirits of a second kind, which he calls "vital."[97] One of the differences between the two is that whereas the vital spirit "is absolutely terrified of leaving its body," the inanimate spirit is "gripped by" the desire "to escape" or "to go out."[98] Referring exclusively to the inanimate type, he says elsewhere that spirits are "unquiet to get forth"[99] and "in a hurry to escape."[100]

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[97] *History of Life* 351 (Rule 4 ["In all living things there are two kinds of spirits: non-living ones of the kind found in inanimate substances, and the superadded vital spirits"]). See also Rees, Introduction, Instauratio magna *Part Two* lxxxiv (according to Bacon, "vital" spirit "is to be found in living beings alone," whereas "inanimate" spirit "is to be found in all beings, be they living or non-living, at or near the surface of the Earth").

[98] *History of Life* 355 (Rule 7, Explanation). See also Bacon, *Inquiry* 323 (one of "the actual desires" of spirits "is that of . . . going out"; they experience "the urge to escape").

[99] *Sylva* 451 (Century 4, sec. 328).

[100] *Of the Wisdom* 760 (ch. 29). Summarizing Bacon's speculations on this subject, Rees says that whereas vital spirits "are happy to be

"In Ariel's complaints and longing for liberty," as Harman also notes, we find Bacon's idea that "spirits," meaning those that are "inanimate," have a "natural desire . . . to escape from the tangible bodies by which they have been . . . enclosed."

The Airiness and Fieriness of Spirits

Shakespeare	**Bacon**
8. Ariel is an airy spirit who also flames.	8. Spirits are air-fire compounds that exhibit both the characteristics of air and those of fire.

Shakespeare

In the "Names of the Actors," Ariel is described as an "airy spirit." Prospero tells him that he is "but air" (5.1.25) and emphasizes this attribute by calling him "delicate" (1.2.320, 513; 4.1.52), "dainty" (5.1.100), and "fine" (1.2.373, 486, 580). In addition, Ariel's name and invisibility imply airiness.

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confined within tangible bodies," inanimate spirits, which Bacon regards as "inveterate and incorrigible jail breakers," "detest their captivity" and "strive to escape" ("Francis Bacon and *spiritus"* 270; Rees, "Matter Theory" 111; see also Rees, Introduction, *Philosophical Studies* lv).

Paradoxically, Ariel also possesses a fiery aspect, which he mentions more than once when recounting what he accomplished during the tempest:

> I boarded the king's ship: now on the beak,
> Now in the waist, the deck, in every cabin,
> I flamed amazement: sometime I'd divide
> And burn in many places; on the topmast,
> The yards and bowsprit would I flame distinctly,
> Then meet and join. (1.2.227–32)

Bacon

The spirit enclosed within every tangible body is, in Bacon's theory, "a thin body related to air but very different from it."[101] One important difference is that "the spirit . . . is . . . compounded of" both "an airy . . . substance" and "a flamy" one.[102] And because spirit is "made up as it were of air and flame,"[103] it "partakes of both natures, the flamy one and the airy."[104] According to Bacon, "we find in the spirit a certain balance between its two components." Some spirits "are

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[101] *History of Life* 349 (Rule 2, Explanation).

[102] *Inquiry* 321.

[103] *History of Dense* 63.

[104] *History of Life* 377 (Rule 32, Explanation).

more like the substance of air"; others are "more like that of flame."[105]

Ariel also represents this element of Bacon's conception of spirits. As Theron S. E. Dixon points out, "Ariel is a perfect embodiment" of Bacon's peculiar notion that spirits mysteriously combine an airy nature with a fiery one.[106]

Spirits More Airy Than Fiery

Shakespeare	**Bacon**
9. Ariel's airiness predominates over his fieriness.	9. The airiness of inanimate spirits predominates over their fieriness.

Shakespeare

Although fieriness is one of Ariel's attributes, airiness defines his essential nature. Thus he is described in the "Names of the Actors" as an "airy spirit" but not as a fiery one, and Prospero says that he is "but air" without mentioning his fieriness at all. In addition, the textual references and allusions to Ariel's airiness are both more numerous and more prominent than is the one passage in which he speaks

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[105] *Inquiry* 321. See also, e.g., Rees, Introduction, *Philosophical Studies* lxi ("spirits are air-fire compounds which vary in their airiness and fieriness").

[106] Dixon 414.

of flaming and burning on the king's ship. All these clues suggest that the spirit is more airy than fiery.

Bacon

As we have seen, vital and inanimate spirits are said by Bacon to be air-fire compounds that partake of both natures, the airy and the flamy. In each case, it is necessary to determine, however, "whether the spirit . . . is . . . more airy or fiery."[107] Whereas "the vital spirits come closer to the substance of flame," Bacon writes, "[t]he non-living spirits are nearly consubstantial to air."[108] Consequently, in the latter, "air is the dominant partner."[109]

Shakespeare's portrayal of Ariel conforms with Bacon's theory of spirits in this peculiar respect also. In Ariel, as in the inanimate spirits Bacon posits, both airiness and fieriness manifest themselves, but airiness is the predominant trait.

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[107] *New Organon* [Rees] 213 (Bk. 2, aphorism 7).

[108] *History of Life* 355 (Rule 6).

[109] Rees, "Francis Bacon and *spiritus*" 269. See also, e.g., Rees, "Matter Theory" 111 ("The inanimate and animate (vital) spirits are both airy and flamy in nature but . . . the airy has the upper hand in the former"); Rees, Introduction, *Philosophical Studies* lv ("in all varieties of inanimate spirit the airy component predominated").

Harnessing the Energies of Spirits and Its Role in the Conquest of Nature

Shakespeare	Bacon
10. Only by using art to harness the energies of Ariel and other spirits can Prospero wield power over nature.	10. Using art or magic to redirect the energies of the spirits enclosed within tangible bodies, which energize and control the processes of nature, is the only means by which humanity can gain dominion over the natural world.

Shakespeare

Prospero's art gives him the power both to release spirits from their imprisonment in matter and to compel them to transform the physical world. Ariel's liberation was brought about by his master's art, as Prospero informs us when he reminds the forgetful spirit of this fact: "It was mine art, / When I arrived and heard thee, that made gape / The pine and let thee out" (1.2.340–42). When asked by Ferdinand whether Iris, Juno, and Ceres are spirits, Prospero replies, "Spirits, which by mine art / I have from their confines called to enact / My present fancies" (4.1.130–32). And when Antonio is conspiring with Sebastian to murder Alonso, the King of Naples, and the elderly courtier Gonzalo, and the intended victims are slumbering, Ariel tells Gonzalo that Prospero's art is what enables him to assign to his

spirituous servant the task of preventing the crime from taking place: "My master through his art foresees the danger / That you, his friend, are in, and sends me forth / . . . to keep them living" (2.1.326–28).

Prospero directed Ariel to concoct both the tempest and its consequences. In the aftermath of the storm, Prospero asks him, "Hast thou, spirit, / Performed to point the tempest that I bade thee?" (1.2.224–25). Ariel replies that he has done so "[t]o every article" (1.2.226) and describes the specific actions he has taken. They include creating "fire and cracks / Of sulphurous roaring" (1.2.234–35); causing the passengers on the king's ship to "quit the vessel" in fear (1.2.244); "dispers[ing] them 'bout the isle" in "troops" (1.2.256); concealing the ship "[s]afely in harbour" (1.2.264) with its crew asleep and "under hatches stowed" (1.2.268); and planting in the minds of the mariners who sailed back to Naples the erroneous belief "that they saw the king's ship wrecked / And his great person perish" (1.2.274–75). Throughout the play, as G. Wilson Knight writes, Ariel is "shown as the agent of Prospero's purpose," his "instrument in controlling and developing the action."[110] In the past, Ariel carried out several other tasks on his master's behalf, as we learn when Prospero tells him:

> Thou . . . think'st it much to tread the ooze
> Of the salt deep,
> To run upon the sharp wind of the north,

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[110] *Crown* 210. Knight also provides a list of the specific tasks Ariel performs for his master.

> To do me business in the veins o'th'earth
> When it is baked with frost. (1.2.297–301)

In all cases, the source of Prospero’s power to compel Ariel to alter the course of natural and human events is his art.

In Act 2, scene 1, Ariel reveals that spirits are not merely assistants who facilitate the enactment of Prospero’s fancies; rather they serve as the only available means by which he can exercise his amazing power over the physical world. This information is conveyed to us when Ariel says to Gonzalo, “My master through his art foresees the danger / That you, his friend, are in, and sends me forth— / For else his project dies—to keep them living” (2.1.326–28). Prospero cannot prevent the murders from taking place, in other words, unless he can dispatch Ariel to do the actual work of awakening the men and saving their lives. Assuming that Ariel speaks the truth here, we can infer from his speech that Prospero is, as R. L. Eagle puts it, “powerless to perform ‘magic’ without the service of his trusty spirit” or that of other spirits like him.[111]

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[111] Eagle 46. See also Holzer, *Shakespeare’s* Tempest 4 (“Prospero . . . produces all his magic feats . . . through Ariel and his spirits”).

Bacon

Bacon holds that the "tangible parts in bodies are stupid things; and the spirits do (in effect) all."[112] Although "[t]he spirits or pneumaticals . . . are scarce known,"[113] he writes, they are "the craftsmen and workers who do everything that happens in the body,"[114] "the things that govern nature principally"[115] and "manage everything."[116] They accomplish all this by providing the natural world with a "rich and fruitful supply of active power" that energizes most of its processes.[117] Inanimate spirits in particular are a principal source of activity in nature.[118]

It follows, in Bacon's theory, that the power needed to force nature to deviate from its usual course is principally that of spirit. A human agent cannot alter the processes of nature directly; as Sophie Weeks explains, "an operator can only arrange things so that spirit's transformative power is directed to particular ends." By constraining it and redirect-

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[112] *Sylva* 381 (Century 1, sec. 98).

[113] *Sylva* 380 (Century 1, sec. 98).

[114] *History of Life* 245.

[115] *Sylva* 380 (Century 1, sec. 98).

[116] *Of the Wisdom* 759 (ch. 29).

[117] *Of the Wisdom* 759 (ch. 29).

[118] See Rees, "Commentary" 457.

ing its energies, the researcher "harnesses spirit's binding power" and forces it to impose changes upon the physical world.[119] For Bacon, in short, "art is ultimately control of the controller, that is, control of spirit."[120]

A hypothetical experiment discussed by Bacon in *The History of Dense and Rare* and singled out for analysis by Weeks illustrates this important element of his speculative philosophy.[121] In the procedure Bacon describes, the operator alternates between heating and cooling a sealed iron cube filled with pure water. The comments Bacon makes on some of its possible outcomes are revealing:

> [W]ater is the simplest of bodies, lacking colour, smell, taste, and other qualities. And therefore, if the spirit of the water . . . were not given off but were provoked . . . by heat . . . to turn itself on the grosser parts of the water and could so dispose and change them into a new schematism . . . until it either took on some colour, smell, taste, a kind of oiliness, or some other remarkable alteration . . . , then no doubt an extraordinary thing would be accomplished. . . .[122]

Thus, in order to modify the ordinary properties of water, the operator must discover art that can compel the rarefied inanimate spirit enclosed within the tangible water to shift

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[119] Weeks 139.

[120] Weeks 140.

[121] See Weeks 139–40.

[122] *History of Dense* 103.

nature out of its usual course, causing changes to occur in the denser physical matter. Absent this control over spirit, Bacon believes, humanity is powerless to gain control over the processes of nature.

This Baconian idea, which is crucial to understanding *The Tempest,* is perfectly represented in the play by the manner in which Prospero uses Ariel as the agent of his purpose whenever he wishes to wield power over the natural world. Just as Bacon's hypothetical operator must redirect the energies of an inanimate spirit in order to change the color of the water inside the cube, Prospero must command his spirituous servant to do his bidding in order to put the wild waters in a roar. This close conformity amply justifies Harman's assertion that the scenes in which Prospero tasks Ariel or refers to having tasked him with altering the physical world constitute "a poetical allegory of what we now term the 'harnessing of the forces of nature.'"[123]

[123] *Edmund Spenser* 123. See also Harman, *"Impersonality"* 192.

Impediments to the Conquest of Nature

A Bewitching Entity as an Impediment
to Harnessing the Energies of Spirits

Shakespeare	**Bacon**
11. A witch, Sycorax, imprisoned Ariel because she could not exact obedience from him and was powerless to release him and to harness him to the task of transforming nature.	11. Excessive reverence for Aristotle's natural philosophy, which discourages the investigation of nature, has virtually bewitched humanity and kept it from discovering how to harness the energies of spirits and making scientific and technological progress.

Shakespeare

Sycorax is described by Prospero as a "foul witch" (1.2.304) responsible for "mischiefs manifold" (1.2.312). Because she could not compel Ariel to obey her orders, she imprisoned him in the cloven pine tree. Addressing his "industrious servant" (4.1.35), Prospero says:

> [F]or thou wast a spirit too delicate
> To act her [Sycorax's] earthy and abhorred commands,
> Refusing her grand hests, she did confine thee
> . . . .
> Into a cloven pine, within which rift
> Imprisoned thou didst painfully remain
> A dozen years . . . (1.2.320–27)

One reason for Ariel’s lengthy confinement is that once Sycorax had imprisoned him, she was powerless to release him. In Prospero’s words, the spirit’s incarceration “was a torment / . . . which Sycorax / Could not again undo” (1.2.338–40).

In these passages Shakespeare draws our attention to a significant difference between Prospero and Sycorax. Whereas Prospero’s art gives him the power to release Ariel from his imprisonment and to command him to alter the processes of nature, the witch had no such art and no such power.

Bacon

In Bacon’s view, the natural philosophies of Aristotle and his Scholastic followers “are no good because they are sterile; they have not produced and cannot produce useful results.”[124] The source of the problem, Bacon holds, is that both varieties of Aristotelianism attempt to inquire into the workings of nature, not by investigating them empirically, but by engaging in verbal disputation. He contends in *The New Organon* that Aristotle

> corrupted natural philosophy when he fashioned the world from categories . . . and forced on the nature of things countless other ideas as the whim took him. . . . [H]e . . . did not take experience into due account when he framed his decrees and axioms but, having made up his

[124] Walker 128.

> mind to suit himself, he bends experience to his opinions and drags it about in chains. . . .[125]

In *The Masculine Birth of Time* (circa 1603), he says that by adopting this approach to the study of nature, Aristotle "cast the closest fetters on our understandings" and "made us slaves of words." As for the Scholastic philosophers, who were "bred and nurtured" in the bosom of Aristotle, they "turned themselves away . . . from the light of nature" and transformed "the pliant material provided by his [Aristotle's] precepts" into "the countless quibbles of the Schools."[126] Instead of being concerned with "the inner truth of things," Aristotelianism is preoccupied with "how someone replying to a debate might parry a thrust, and retort with something positive and verbal."[127] It therefore gener-

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[125] *New Organon* [Rees] 99, 101 (Bk. 1, aphorism 63). See also Bacon, *On Principles* 237, 239 (Aristotle wanted to "act as the arbiter of nature" and to "adjust things to suit himself"); Bacon, *Refutation* 112 ("I . . . ask whether, in his [Aristotle's] Physics and his Metaphysics, you do not hear the voice of dialectics more often than the voice of nature").

[126] *Masculine Birth* 63 (ch. 2). See also Bacon, *New Organon* [Rees] 181 (Bk. 1, aphorism 121 [the "subtleties" of the Scholastic philosophers "are wasted on words" instead of being applied to "things or . . . nature"]). Ernst Cassirer's more recent characterization of the Scholastic method echoes Bacon's criticism of it. "[I]nstead of analysing and interpreting phenomena," Cassirer writes, that method "indulges in the analysis of authors" (163).

[127] Bacon, *New Organon* [Rees] 99 (Bk. 1, aphorism 63). See also, e.g., Zagorin 34 (in Bacon's view, "Aristotle . . . tried to provide

ates many "quarrels and barking disputations" but little progress in the arts and sciences.[128] What is needed, Bacon says, is a fertile natural philosophy, one that aims, not "to beat an opponent in debate," but rather "to bend nature to works."[129] In the system he recommends, of course, humanity can reach that goal only by engaging in experimentation and discovering art.

To Bacon's regret, however, mankind's excessive "reverence . . . for the authority of those held to be philosophy's great men" has kept it in thrall to the Aristotelian natural philosophy, despite its sterility, for centuries.[130] As Perez Zagorin writes, Bacon "was convinced . . . that the superstitious veneration of antiquity was a major obstacle to progress," and that unless Aristotle's supremacy was over-

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verbal solutions to every problem without attaining any real knowledge").

[128] Bacon, *Great Instauration* 13 (Preface). In his brief biography of Bacon, William Rawley, his chaplain, says that his master first became aware of the inadequacy of Aristotle's natural philosophy when he was a student at the University of Cambridge:

> Whilst he was commorant in the university, about sixteen years of age . . . , he first fell into the dislike of the philosophy of Aristotle, not for the worthlessness of the author . . . but for the unfruitfulness of the way, being a philosophy . . . only strong for disputations and contentions, but barren of the production of works, for the benefit of the life of man. . . . ("Life" 2–3; spelling modernized)

[129] *Plan* 29.

[130] *New Organon* [Rees] 133 (Bk. 1, aphorism 84).

thrown, "no better philosophy such as his own could make its way into other minds."[131]

The figures of speech Bacon uses to describe the effect that reverence for antiquity has had upon humanity liken it to enchantment and witchcraft. In one passage, he asserts that "men have been kept back as by a kind of enchantment from progress in the sciences."[132] Continuing in the same vein, he states that the "spell" cast upon them by antiquity and Aristotle's authority "has so manacled men's strength, that (as if bewitched) they have become incapable of familiarising themselves with the actual nature of things."[133]

Bacon also holds, as we have seen, that it is impossible for mankind to achieve progress in the sciences unless it learns how to "control the controllers," to force the spirits imprisoned within tangible bodies to shift nature out of its usual course. It follows that when he says that excessive reverence for Aristotelianism has obstructed that progress, he means that it has prevented humanity from discovering, through experimentation, the art that makes such control over spirits possible.

Shakespeare's characterization of Sycorax as a witch who could not exact obedience from Ariel, imprisoned him in tangible matter, where his energies could not be harnessed, and was unable to release him has two distinct and

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[131] Zagorin 34.

[132] *New Organon* [Spedding] 81–82 (Bk. 1, aphorism 84).

[133] *New Organon* [Rees] 133 (Bk. 1, aphorism 84).

peculiar components. One of them describes her as having the power to enchant or bewitch; the other portrays her as having no power to control spirits. As we have seen, the same two ideas figure in Bacon’s critique of Aristotle’s method of studying nature. In alleging that unwarranted devotion to Aristotelianism has manacled humanity’s strength, he explicitly compares it to witchcraft. And in alleging that it has obstructed scientific progress, he implicitly argues that it has kept mankind from redirecting the energies of spirits. These two parallels support the inference that Sycorax represents humanity’s counterproductive veneration of Aristotle’s natural philosophy.

The best interpretation of Ariel’s long period of incarceration, which resulted from the witch’s inability to exact obedience from him and to “undo” his confinement, is that it stands for the many centuries during which, in Bacon’s view, mankind’s fidelity to Aristotelianism rendered it incapable of harnessing the energies of spirits. The stark contrast between Sycorax’s impotence with respect to Ariel and the power Prospero wields over him by making use of art or magic figures the antithesis between the sterility of Aristotle’s natural philosophy and the fertility of the alternative approach recommended by Bacon.

A Bewitching Entity as Circularity or the Cause of Circular Movement That Impedes Scientific Progress

Shakespeare	Bacon
12. The witch Sycorax took on the shape of a hoop.	12. Unwarranted deference to Aristotle's natural philosophy has caused humanity to go around in circles and thereby impeded scientific and technological progress.

Shakespeare

Prospero informs us that Sycorax "with age and envy / Was grown into a hoop" (1.2.304–05). As Marjorie Garber astutely observes, this passage images the witch as "a walking sign of cyclical repetition, endlessly returning upon herself."[134]

Bacon

Unless mankind replaces the old methods of investigating nature with new ones erected upon an altogether different foundation, Bacon argues, it will "go round in circles forever, with progress little or pitiable."[135] Perhaps influenced by

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[134] Garber 862.

[135] *New Organon* [Rees] 77 (Bk. 1, aphorism 31).

Bacon, Mickaël Popelard uses a similar figure of speech to describe the natural philosophies Bacon rejects; those approaches, Popelard writes, "are like closed circles endlessly repeating themselves but leading nowhere near the true understanding of the natural world."[136]

Shakespeare's puzzling description of Sycorax as a "hoop" is an apt metaphor for this flaw in the Aristotelian approach to the study of nature. The parallel between Sycorax's peculiar shape and Bacon's account of what will happen to mankind if it remains devoted to Aristotelianism lends additional support to the Baconian interpretation of this character.[137]

If a plausible alternative construction of the hoop passage were available, it might cast doubt upon the Baconian reading of it. But many editors of *The Tempest* leave it unglossed, arousing the suspicion that they have no idea what it means.[138] Some, perhaps most, of the editors who do provide a gloss take the image to mean that the witch was

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[136] Popelard 176.

[137] Because "Bacon thinks that . . . scholastic Learning goes . . . in a circle" rather than progresses, Holzer infers that the hoop-shaped Sycorax "is the personification of Scholastic Learning" (*Shakespeare's* Tempest 28–29, 25; emphasis omitted). Inasmuch as Scholasticism was rooted in the philosophy of Aristotle, Holzer's interpretation of this character is very similar to the one proposed here.

[138] See, e.g., Barton, *Tempest* 147; Kermode, *Tempest* 27; Hulme and Sherman 15; Mowat and Werstine 30; Orgel, *Tempest* 115; Furness 59.

bent over with age.[139] This reading is implausible, however, because the conceptual difference between being circular and being bent is considerable, and Shakespeare is not known to employ inapposite metaphors or images.[140] The Baconian construction is an attractive alternative to allowing the meaning of the passage to remain mysterious indefinitely.

To recapitulate the interpretation of Sycorax proposed here, Shakespeare assigns to her three distinctive and striking traits: she was a witch, she lacked the power to exact obedience from the spirit Ariel, and she was shaped like a hoop. As we have seen, each of those characteristics conforms with one of the charges Bacon makes in his multicount indictment of unwarranted deference to Aristotelianism: that it has cast a spell over people in a witch-like manner, that it has prevented them from compelling spirits to shift nature out of its usual course, and that it has caused them to go around in circles instead of helping them to achieve scientific and technological progress. Inasmuch as three specific and strange parallels like these are unlikely to be coincidental, they force us to presume that Sycorax represents humanity's excessive reverence for the natural philosophies of the past, and that her peculiar attributes figure

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[139] See, e.g., Bevington et al. 16n260 ("so bent over with age as to resemble a hoop"); Vaughan and Vaughan, *Tempest* 189n259 ("bent over with age"); Bate and Rasmussen 17n305 ("bent posture").

[140] See Clarke and Clarke 699 ("Shakespeare is always apt . . . in his similes").

the various kinds of harm that, according to Bacon, they have caused.

The Role of Books and Knowledge in the Conquest of Nature

Shakespeare	Bacon
13. Unless Prospero has access to the books he treasures, which evidently contain the art he discovered by engaging in study and research, he lacks the power to gain control over spirits and the physical world.	13. Unless humanity records and organizes in natural histories the data, axioms, and art it derives from experimentation, it will be unable to make progress in the development of science and technology.

Shakespeare

In Act 1, scene 2, Prospero tells Miranda that twelve years earlier, when he was the Duke of Milan, he treasured certain books. Thanks to the charity of Gonzalo, the "noble Neapolitan" who prepared the duke and his daughter for their voyage into exile, some of those books accompanied him on his journey and are still in his possession on the island (1.2.188). "Knowing I loved my books," Prospero says, "he [Gonzalo] furnished me / From mine own library with volumes that / I prize above my dukedom" (1.2.193–95). Although we are given no explanation of why the books deserve to be valued so highly, we learn the probable reason

from Caliban, who admonishes his confederates in the plot to murder Prospero:

> Remember
> First to possess his books; for without them
> He's but a sot, as I am, nor hath not
> One spirit to command . . . (3.2.86–89)

Thus, according to Caliban, Prospero's books contain the art or magic that empowers him to harness the energies of spirits. And we know that Caliban's statement is truthful because, as David Lindley points out, it "is borne out by Prospero's later decision to drown his book as a sign of giving up his magic."[141]

Bacon

Bacon holds that "the dominion of man over nature rests only on knowledge."[142] In order to achieve meaningful progress in the sciences, he argues, mankind must replace Aristotelian disputation with rigorous investigation of natural phenomena. In his words, "the discovery of things is to be sought not from the shadows of antiquity but from the

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[141] *Tempest* 167n87. See also Garber 871 ("When at the close of the play Prospero . . . declares, 'I'll drown my book' . . . , he voluntarily renounces the magic powers . . . that have come to him through his 'secret studies' in magical lore").

[142] *Thoughts* 93.

light of nature."[143] Bacon elaborates on the idea in this passage:

> [F]or those who propose not to divine and guess but to discover and know, . . . to examine and, in a way, dissect the nature of the real world itself, everything should be sought from the things themselves. [T]here is no . . . alternative to this hard labour . . . to be had from any . . . reflection, or argumentation. . . .[144]

Accordingly, Bacon argues that "hope of further advancement of the sciences will be well grounded only when we take . . . many experiments. . . ."[145] And because "the nature of things shows itself more openly under the vexations of art than in its natural freedom," the most fruitful experiments are those that bind or vex nature, that is, shift it out of its usual channel.[146]

Furthermore, the results of those experiments, which Bacon calls "natural history," should be compiled in books. "I . . . put together a history of nature," he writes, "when it is

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[143] *New Organon* [Rees] 185 (Bk. 1, aphorism 122).

[144] *Plan* 37. See also, e.g., Bacon, *Great Instauration* 25 (Preface ["I ask that the sciences be sought not arrogantly in the narrow cells of human wit but humbly in the wider world"]).

[145] *New Organon* [Rees] 157 (Bk. 1, aphorism 99). See also Bacon, *Preparative* 453 (mankind "cannot make any headway in philosophy and the sciences worthy of the human race without a natural and experimental history" of the kind Bacon recommends).

[146] *Plan* 39.

forced from its own condition by human agency. . . . I record in detail . . . all the experiments. . . ."[147] In the hypothetical experiment we have considered, the art that might vex nature is the heating and cooling Bacon proposes to apply to the water inside the iron cube. The purpose of such a procedure, as we have seen, is to allow the operator to determine whether art of a particular kind can provoke the spirits enclosed within a particular tangible body to shift nature out of its usual course and alter the body's ordinary properties. Over time, as more and more experimentation takes place, the results of "countless experiments and observations" will be "built up and stockpiled."[148] Bacon evidently expects, as Graham Rees points out, that all those data will eventually be recorded in the many natural histories that will have to be compiled through cooperative effort in order for his program to be fulfilled.[149]

In order for scientific progress to be achieved, Bacon holds, the data yielded by experimentation must also be organized; in his words, the interpretation of nature must "start[] from experience ordered and digested and not at all topsy-turvy or haphazard."[150] From the organized data, scientists can derive general laws of nature; as Bacon puts it, they can "extract[] . . . axioms from experience" if they first

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[147] *Plan* 39.

[148] *New Organon* [Rees] 133 (Bk. 1, aphorism 84).

[149] See Introduction, Instauratio magna *Part Two* lxxxiii.

[150] *New Organon* [Rees] 131 (Bk. 1, aphorism 82).

"prepare a sound and sufficient Natural and Experimental History."[151] Armed with knowledge of such laws, researchers can then invent new technologies that increase mankind's power over nature; as Bacon writes, "axioms properly discovered and established . . . bring floods of works in their wake."[152] As examples of important inventions, he cites "three things which were unknown to the ancients," namely, "the Art of Printing, Gunpowder, and the Mariner's Compass." In his view, nothing "seems to have exerted a greater effect and influence on human affairs than these mechanical innovations."[153]

Thus, in the Baconian program, books containing natural history serve as the bedrock upon which a continually expanding and highly beneficial scientific and technological edifice can and will be erected. As Bacon puts it, organized compilations of data are "the very foundation of our

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[151] *New Organon* [Rees] 215 (Bk. 2, aphorism 10; emphasis omitted). See also *New Organon* [Rees] 163 (Bk. 1, aphorism 105 ["induction must . . . be used . . . to discover axioms"]). In Bacon's program, as Silvia Manzo writes, "natural history provides the individual data," and "[a]xioms of natural philosophy, or general propositions, are to be induced through propositions ascending from the data in order of increasing generality" (46).

[152] *New Organon* [Rees] 113 (Bk. 1, aphorism 70).

[153] *New Organon* [Rees] 195 (Bk. 1, aphorism 129; emphasis omitted). See also, e.g., Rossi, *Francis Bacon* 11 ("Bacon believed that a meticulous and exhaustive compilation of natural and experimental histories would rapidly change the destinies of mankind . . .").

work."[154] "[N]o hope of greater growth or progress can be founded save on a kind of restoration of the sciences," and "for the beginnings of this we must have recourse wholly to natural history."[155]

The *New Atlantis* (1626), the unfinished utopian fable in which Bacon presents "a glowing picture of the benefits" that can be expected to "accrue to a nation dedicated to the scientific investigation of nature," further illustrates the important role natural history plays in his program.[156] Speaking through one of the Fathers of "Salomon's House," the research institute he describes in the story, Bacon informs us that its scientists spend much of their time on conducting experiments; recording, compiling, and organizing the data they produce; and deriving general laws of nature and new technologies from those data:

> We have three [fellows] that collect the experiments which are in all books. . . .
>
> We have three that try new experiments, such as themselves think good. . . .
>
> We have three that draw the experiments . . . into titles and tables, to give the better light for the drawing of observations and axioms out of them. . . .

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[154] *New Organon* [Rees] 215 (Bk. 2, aphorism 10).

[155] *Plan* 37.

[156] Sargent 161. See also Yates, *Occult Philosophy* 204 ("The programme of learning and research set out . . . in the *New Atlantis* is really the Baconian programme for the advancement of learning . . .").

> We have three that bend themselves, looking into the experiments of their fellows, and cast about how to draw out of them things of use and practice for man's life. . . .
>
> Lastly, we have three that raise the former discoveries by experiments into greater observations, axioms, and aphorisms.[157]

This account concretizes Bacon's idea that the quest for general scientific knowledge ("greater observations, axioms, and aphorisms") and for technological breakthroughs ("things of use and practice for man's life") will be crowned with success only if researchers can study and draw inferences from natural history. The *New Atlantis* is undoubtedly one of the texts Rees has in mind when he states that Bacon's program "rests on natural history or scrupulous data collection on a colossal scale."[158]

As Holzer points out, Prospero's treasured books, which evidently contain his art and were acquired when he was "rapt in secret studies," appear to resemble those the Baconian scientists of Salomon's House compile and rely upon in that they provide him with "a superior knowledge of Nature."[159] Accordingly, the best interpretation of those books is that they represent the natural history upon which the sciences depend, in Bacon's view, for their advancement. Caliban's statement that depriving Prospero of his books

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[157] *New Atlantis* 486–87.

[158] Introduction, Instauratio magna *Part Two* xli.

[159] *Shakespeare's* Tempest 3.

would negate his power to control spirits figures the Baconian idea that having access to the data, axioms, and art that flow from scientific investigation is a prerequisite for the invention of new technologies.

The Conquest of Nature and Methods of Achieving It Summarized

Shakespeare	**Bacon**
14. By discovering art through study and research and using it to compel Ariel and other spirits to alter the course of natural and human events, Prospero increases his power over the physical world and attains his goals.	14. By discovering art through the experimental investigation of nature and using it to compel spirits to shift nature out of its usual course, humanity can make scientific progress, invent new works, expand its power over the physical world, and improve its lot.

Shakespeare

When Prospero learns in the play's final scene that his enemies have begun to show signs of repentance, he tells Ariel that this has been his principal goal all along: "They being penitent, / The sole drift of my purpose doth extend / Not a frown further" (5.1.32–34). In order to reach that goal, however, Prospero has had to avail himself of Ariel's assistance.

In Act 3, scene 3, for example, we learn that Prospero has instructed Ariel to pose as a minister of fate so that he can try to induce the men who usurped his master's dukedom to repent their treachery. Disguised as a harpy, the spirit tells the conspirators, Alonso, Antonio, and Sebastian, that "[t]he powers" have visited suffering and bereavement upon them because of their wrongdoing (3.3.84). Ariel also warns them that "[l]ing'ring perdition" will attend them unless they experience "heart's sorrow" and mend their ways (3.3.88, 92). His speech has a noticeable psychological effect upon Prospero's enemies, prompting Gonzalo to observe, "All three of them are desperate: their great guilt, / Like poison given to work a great time after, / Now 'gins to bite the spirits" (3.3.118–20). Thus, if Gonzalo's report can be trusted, dispatching Ariel to confront the usurpers enables Prospero to arouse feelings of guilt in all of them. Moreover, it allows him to plant in them the seeds of moral growth. By assigning this task and others to his spirituous assistant, Prospero increases his power, as he acknowledges when he says:

> My high charms work,
> And these, mine enemies, are all knit up
> In their distractions: they now are in my power,
> And in these fits I leave them . . . (3.3.99–102)

Later Ariel provides additional impetus to the reformation of Prospero's enemies by "charm[ing]" and "[c]onfin[ing]" them, leaving them "distracted," and arousing "sorrow and dismay" in their loyal followers (4.1.192; 5.1.9, 14, 16). Once again, Prospero rejoices in Ariel's success: "Now does my

project gather to a head. / My charms crack not, my spirits obey . . ." (5.1.1–2). Ariel's crowning achievement is to engender so much remorse in Alonso that in the play's final scene, he renounces his claim on Prospero's dukedom and begs for forgiveness: "Thy dukedom I resign, and do entreat / Thou pardon me my wrongs" (5.1.125–26).

These passages epitomize the essential nature of Prospero's relationship with Ariel and the benefits that flow from it. By making use of his art, Prospero forces the spirit to alter the physical world on his behalf, and that process increases Prospero's power and enables him to reach his goals.

Bacon

The ultimate objective of natural philosophy and the arts and sciences, in Bacon's view, is to alleviate the suffering and ease the burdens of mankind by increasing its power over the physical world. In *The Advancement of Learning* (1605), he recommends the adoption of "such natural philosophy as shall not vanish in the fume of . . . speculation, but . . . shall be operative to the endowment and benefit of man's life."[160] And in *The New Organon,* he extols scientists who strive "to renew and increase the empire of humanity itself over the whole universe of things."[161] According to

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[160] *Advancement* 178 (Bk. 2).

[161] *New Organon* [Rees] 195 (Bk. 1, aphorism 129). See also, e.g., Rees, Introduction, *Philosophical Studies* xxxvi (the goal of Bacon's philosophy is to construct a body of knowledge that will "yield

Bacon, the attainment of this goal is of paramount importance:

> Now among all the benefits that could be conferred upon mankind, I found none so great as the discovery of new arts, endowments, and commodities for the bettering of man's life. . . . [T]he work of the Inventor . . . is felt everywhere and lasts for ever. But . . . if a man could succeed . . . in kindling a light in nature—a light which . . . should presently disclose and bring into sight all that is most hidden and secret in the world,—that man . . . would be the benefactor indeed of the human race,—the propagator of man's empire over the universe, the champion of liberty, the conqueror and subduer of necessities.[162]

Bacon observes that the reaping of these benefits has been impeded by the belief that "nothing with real power and influence over nature, should be expected from art or human effort." But he declares that supposition, which has brought about "a wicked circumscription of human power," to be erroneous.[163] Once it has been discarded, Bacon writes,

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practical benefits to release the human race from material privation"); Farrington, *Philosophy* 22 (science, Bacon thinks, should be "directed to the improvement of the conditions of life by the discovery of new arts").

[162] *Of the Interpretation* 84–85 (Preface). See also Bacon, *New Organon* [Rees] 195 (Bk. 1, aphorism 129 [striving to increase humanity's power to control the physical world is "sober and majestic"]).

[163] *New Organon* [Rees] 141 (Bk. 1, aphorism 88).

humanity will make “noble discoveries” that will produce “an improvement in man's lot” and “an enlargement of his power over nature.”[164]

In Bensalem, the island kingdom in the *New Atlantis* where Baconian methods of investigating and interpreting nature have been adopted, scientists have made many noble discoveries of the kind Bacon envisions. Here are a few of the inventions in which one of the Fathers of Salomon’s House takes pride:

> [W]e make (by art) . . . trees and flowers . . . to come up and bear more speedily than by their natural course they do. We make them also by art greater much than their nature; and their fruit greater and sweeter and of differing taste, smell, colour, and figure, from their nature. . . .
>
> We have certain helps which set to the ear do further the hearing greatly. . . .
>
> We have also engine-houses, where are prepared engines and instruments for all sorts of motions. There we imitate and practice to make swifter motions than any you have. . . .[165]

This is a small but representative sample of the “things of use and practice for man’s life” that the scientists of Salomon’s House have drawn from the data and axioms yielded by their experimentation. The technologies are diverse, ranging from agricultural techniques to mechanical devices,

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[164] *New Organon* [Rees] 143 (Bk. 1, aphorism 88); New Organon [Rees] 447 (Bk. 2, aphorism 52).

[165] *New Atlantis* 482, 485.

but all of them have the same general effect, which is to make life easier and more pleasant for the people of Bensalem by increasing their power over the physical world. Bacon presumably describes these and other inventions in the *New Atlantis* in order to give his readers a glimpse of some of the ways in which their lives will improve if they follow the dictates of his natural philosophy.

The *New Atlantis,* as Holzer writes, is "the concrete presentation of Bacon's philosophy."[166] The fable realistically depicts a kingdom that has adopted his methods of conducting scientific research and some of the life-altering technologies the adoption of those methods has enabled that society to invent. In *The Tempest,* the same ideas are presented in the form of an allegory. As Peter Dawkins puts it, "Prospero . . . can be seen as a prototype of the . . . philosopher-scientists illustrated in Bacon's utopian story, the *New Atlantis*. . . ."[167] If we compare these two works, we can easily see that although the imaginary islands where the stories take place differ, the natural philosophy that underlies and shapes the two narratives is one and the same.

The vast amount of control Prospero's knowledge enables him to exert over the physical world and its inhabitants figures the many kinds of power humanity will acquire,

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[166] *Shakespeare's* Tempest 3.

[167] Dawkins 13. See also Popelard 193 ("In *New Atlantis* and in *The Tempest,* Bacon's and Shakespeare's men of science display a similar preoccupation with the endless transformation of nature . . .").

according to Bacon, if it adopts his program. By using his art to force Ariel to do his bidding, Prospero raises the tempest, induces his enemies to repent their wrongdoing, and recovers his dukedom. Those elements of the play represent the many things mankind will be able to accomplish if it breaks free of its shackles and takes science and technology to new heights.

4. The Baconian Allegory Summarized

If the elements of *The Tempest* we have considered and their Baconian counterparts are briefly summarized and juxtaposed in tabular form, the remarkable extent to which the Prospero-Ariel-Sycorax portions of the play mirror Bacon's natural philosophy is easy to see:

Shakespeare	Bacon
1. Prospero wields power over nature.	1. Humanity has the potential to gain dominion over nature.
2. The source of Prospero's power over nature is his art.	2. The means by which humanity can increase its power over the physical world is to discover art and use it to force nature to deviate from its usual course.
3. The source of Prospero's power over nature is magic.	3. The means by which humanity can discover the hidden laws of nature and gain the power to manipulate its processes is the science of magic.
4. Ariel is a spirit who alters the ordinary processes of nature.	4. Spirits, which are rarefied bodies that inhabit and energize all tangible matter, bring about most of the effects of nature.

5. Ariel does his work when invisible.	5. Spirits and their activities are invisible.
6. Ariel was originally imprisoned in a tree.	6. Spirits are imprisoned within all tangible matter.
7. Ariel wanted to escape from his imprisonment.	7. Inanimate spirits yearn to escape from their imprisonment in tangible bodies.
8. Ariel is an airy spirit who also flames.	8. Spirits are air-fire compounds that exhibit both the characteristics of air and those of fire.
9. Ariel's airiness predominates over his fieriness.	9. The airiness of inanimate spirits predominates over their fieriness.
10. Only by using art to harness the energies of Ariel and other spirits can Prospero wield power over nature.	10. Only by using art to force spirits to shift nature out of its usual course can humanity conquer the physical world.
11. A witch, Sycorax, imprisoned Ariel because she could not exact obedience from him and was powerless to release him and to harness his energies.	11. Excessive reverence for Aristotle has bewitched humanity and kept it from gaining control over spirits and making scientific progress.

12. The witch Sycorax took on the shape of a hoop.	12. Excessive reverence for Aristotle has caused humanity to go around in circles and impeded scientific progress.
13. Unless Prospero has access to the books he treasures, which evidently contain the art he discovered by engaging in study and research, he lacks the power to gain control over spirits and the physical world.	13. Unless humanity records in natural histories the art it discovers, it cannot make scientific progress.
14. By discovering ar through study and research and using it to compel Ariel and other spirits to alter the course of natural and human events, Prospero increases his power over the physical world and attains his goals.	14. By using art that redirects the energies of spirits, humanity can increase its power over nature and improve its lot.

Comparing the elements that comprise each of these pairs allows us to observe that in every case an element of Shakespeare's play, however fantastic, corresponds precisely to an element of Bacon's philosophy, however peculiar. Individually the parallels are strikingly close, and collectively they are strikingly numerous.

When the comparisons are made at a higher level of abstraction, and the interrelated elements are classified under general headings, it is apparent that Shakespeare and Bacon

take nearly identical positions on each of these topics and subtopics:

- The conquest of nature and methods of achieving it
    - The conquest of nature as a goal attained or attainable
    - The role of art in the conquest of nature
    - The role of magic in the conquest of nature

- Spirits and their role in the conquest of nature
    - Spirits and their role in the natural world
    - The invisibility of spirits
    - The imprisonment of spirits
    - The desire of spirits to escape imprisonment
    - The airiness and fieriness of spirits
    - Spirits more airy than fiery
    - Harnessing the energies of spirits and its role in the conquest of nature

- Impediments to the conquest of nature
    - A bewitching entity as an impediment to harnessing the energies of spirits
    - A bewitching entity as circularity or the cause of circular movement that impedes scientific progress

- The role of books and knowledge in the conquest of nature

- The conquest of nature and methods of achieving it summarized.

Conformity that rises to this level obviously cannot be coincidental. Although a few similarities might have come

into existence by chance, these parallels are too numerous, specific, and peculiar to be explained in that manner. On the contrary, extensive, point-for-point correspondence of the kind we see here is what Bacon appears to have in mind when he says that in some cases we are forced to infer that the signification was "designed and meditated from the first." To construe Shakespeare's portrayal of Prospero, Ariel, and Sycorax as an allegory of Bacon's natural philosophy, in other words, is not to superimpose meaning upon the play arbitrarily by seizing upon and ascribing significance to a few chance occurrences. Rather, because it is impossible to conceive of any other explanation of the many striking parallels, the Baconian interpretation must perforce be presumed to capture at least one of the dramatist's intended meanings.[168]

When the peculiar traits and actions assigned to those characters are considered in isolation from Bacon's natural philosophy, they may appear to be unrelated to each other and to reflect whimsical choices made by the author. So viewed, *The Tempest* may be mistaken, as it is by E. E. Stoll and other critics, for an entertaining and beautifully crafted fantasy. When we examine those attributes in the light of that philosophy, however, we perceive at once that in fact

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[168] See Holzer, *Shakespeare's* Tempest 104 ("A thorough insight into, and a full understanding of," the play "is only possible through a close investigation of Sir Francis Bacon's Great Work"); Harman, *Edmund Spenser* 121 (the play "reflects" Bacon's natural-philosophical ideas "and is only properly intelligible with reference to them").

they are closely interrelated in that all of them serve a single purpose. And we see, moreover, that their common purpose transcends whimsy, entertainment, and artistry.

Prospero, Ariel, and Sycorax present us with an allegory of a philosophy that embodies some of Bacon's highest aspirations for humanity and is therefore worthy of being dramatized. In his optimistic vision of the ages to come, as we have seen, mankind frees itself from its Aristotelian constraints, discovers potent art by means of experimentation, forces spirits to bind nature, and invents many wonderful technologies, thereby gaining the power to better its lot. The parts of the drama we have examined figure, for the benefit of those who can detect the allegory, most of the important steps people must take in order to realize that inspiring vision. Eloquently summarizing this interpretation, Edwin Reed writes that in *The Tempest* "we seem to catch, as it were, through the opening skies, a momentary glimpse of what the future has in store for us."[169]

The presence in the drama of a natural-philosophical allegory should not, of course, be taken to mean that it contains no others. On the contrary, as David Lindley writes, "*The Tempest* . . . alludes to a wide range of . . . issues . . . , and it is necessary to recognise their interplay rather than dilute the play's resonance by turning it into a single-stranded

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[169] Reed, Introduction XXIII. See also Hugo 91 ("Dans cette île enchantée . . . on croirait . . . entrevoir le monde de l'utopie, la terre promise des générations futures . . ." ["In this enchanted isle, we may expect to behold Utopia, the promised land of future generations"; Furness 358]).

allegory."[170] Although the question of what other meanings, if any, the play was meant to embody is beyond the scope of this essay, it should be noted that some of its most perceptive interpreters marshal persuasive evidence that it allegorizes esoteric teachings having nothing to do with Bacon's views on the conquest of nature. Those concealed teachings, according to such scholars as Colin Still, Noel Cobb, Michael Srigley, and Peter Dawkins, relate to such interrelated subjects as the spiritual evolution of humanity, the process of initiation, mystery traditions, alchemy, baptism, Christianity, Hermeticism, Neoplatonism, Rosicrucianism, and Freemasonry.[171]

Assuming that these researchers prove their cases, as I believe they do, their findings together with those reported here suggest that the main purpose of *The Tempest* may have been to afford its author an opportunity to insert multiple profound truths into a single drama while keeping them veiled by allegory. This interpretation derives some support from the fact that, if valid, it would solve one of the "minor mysteries" of Shakespeare scholarship, namely, the mystery that surrounds the decision to give this play pride of place in the Folio of 1623.[172] The idea that *The Tempest*

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[170] Introduction 82.

[171] See Still, *Timeless Theme;* Still, *Shakespeare's Mystery Play;* Cobb; Srigley, *Images;* Dawkins.

[172] Vaughan and Vaughan, Introduction 124. For the suggestion that *The Tempest* was given priority in the First Folio because of its natural-philosophical allegory, see Holzer, *Shakespeare's* Tempest

embodies many important teachings gains further support from an observation made by Harold C. Goddard. According to Goddard, sensitive readers of the drama believe that its secret meanings, if fully discovered, will "lead close not merely to the heart of Shakespeare's convictions about life but close to the heart of life itself."[173]

However many allegories the drama may contain, the discovery that it figures fourteen of Bacon's natural-philosophical ideas sheds a great deal of light on the question of why it "is as it is"and lifts the cloak of mystery from some of its secret meanings, rendering it much less baffling.[174] The question that remains to be considered is whether this natural-philosophical allegory also helps us to solve the authorship mystery.

Forming a conviction as to the meaning of a Shakespeare play, as A. H. Barley points out, may have "a marked bearing" on the question of "what man wrote it."[175] If the allegorical readings of *The Tempest* proposed by Still, Cobb, Srigley, and Dawkins are valid, for example, we can infer that its author was devoted to the various esoteric teachings they find in it.

104; Harman, *"Impersonality"* 192.

[173] Goddard 666.

[174] Kermode, Introduction lxxxviii ("*The Tempest* . . . is deeply concerned with difficult ideas," and "[a]ny one who refuses to care about these things will not begin to understand why the play is as it is").

[175] Barley 310.

Because those teachings belonged to philosophies or belief systems with many adherents, however, their presence in its text does not help us to pinpoint the author's identity. The natural philosophy allegorized there, in contrast, was peculiar to Bacon. Does this fact reliably inform us that Bacon wrote the play?

5. *The Tempest* and the Question of Authorship

Did a New Conception Cause Shakespeare and Bacon to Hold Similar Ideas?

MANY modern scholars acknowledge that *The Tempest* contains Baconian ideas. Gary Schmidgall points out, for example, that it "mounts in theatrical dress Bacon's arguments for the advancement of useful knowledge."[176] According to Mickaël Popelard, *The Tempest* can be "said to reflect, and sometimes even anticipate, some of the theoretical ideas . . . that lie at the heart of Bacon's philosophy."[177] "In true Baconian fashion," he writes, "Prospero forces nature to assume new shapes and visages. . . ."[178] Popelard identifies two characteristics Prospero's art shares with Bacon's conception of science: "it is operative rather than verbally oriented like Aristotle's science, and it displays a strong preoccupation with the endless transformation of nature."[179] Jacqueline L. Cowan astutely observes that "Prospero's production of nature through art is akin to the vexations of art that Bacon tasks to his natural philosopher in the works that

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[176] Schmidgall 247.

[177] Popelard 193.

[178] Popelard 187.

[179] Popelard 184.

comprise his *Instauratio magna.*"[180] Jonathan Sawday goes even further, claiming that "if any play by Shakespeare *should* have been written by Francis Bacon, it is, surely, *The Tempest,* so Baconian are its concerns."[181]

Even if Bacon should have written the play, however, none of these commentators consider the possibility that he actually did so. Popelard, for his part, flatly disavows that hypothesis, stating that he is "not arguing for Bacon's direct influence on, let alone intellectual filiation with, . . . *The Tempest.*"[182] Perhaps because the Shakespeare authorship question is virtually a taboo subject in academia, Popelard proffers an alternative explanation of the parallels he identifies.[183] In his view, both Bacon's natural philosophy and Shakespeare's play "bear witness to the rise of a new conception of the physical world whereby nature came to be seen as capable of being endlessly transformed and experi-

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[180] Cowan 155.

[181] Sawday 305. Sawday describes Prospero as "a truly Baconian figure, overmastering nature by means of his superior technology." See also Spiller 26 ("Like . . . Bacon's idea for experiments that use the 'vexations of art' to reveal the 'secrets of nature,' the island is a small world in which Prospero seeks to use art to control nature. . . ."); Orgel, Introduction 20 ("From one aspect, Prospero's art is Baconian science . . .").

[182] Popelard 182.

[183] See Shapiro 5 (the authorship subject is "walled off from serious study by Shakespeare scholars" and "remains virtually taboo in academic circles").

mented upon."[184] "[I]n its own dramatic and literary way," he suggests, "the play reflects a major epistemological turn which Bacon also expresses philosophically."[185]

The evidence we have reviewed clearly shows, however, that Popelard's hypothesis is untenable. When he suggests that the parallels were produced by the rise of a "new conception," he appears to have in mind one simple idea that was both external to both authors and mysterious in origin. But inasmuch as there are fourteen points of correspondence, it would have been impossible for a unitary idea like the one Popelard describes (that nature is transformable) to bring all of them about. In order to produce so many parallels, the new conception would have had to be a complex body of thought comprised of no fewer than fourteen interrelated elements, each one of which could have been incorporated into Bacon's philosophy and *The Tempest.* In addition, the new system would have had to be sufficiently powerful to induce two transcendent geniuses to embrace it and reproduce all fourteen of those elements in different forms.

In fact, such bodies of thought do not come into existence mysteriously and without any known provenance. Rather, they spring from the minds of individual thinkers, who disseminate them by publishing them, thereby revealing their identities. If a complex set of ideas had influenced the writings of both men so powerfully, its existence, its

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[184] Popelard 182.

[185] Popelard 183.

author's identity, and the extent of its influence would undoubtedly be well known to all serious students of the era today. But as far as I know, scholars with the relevant expertise have found no trace of any body of thought, external to Bacon and Shakespeare, that might have given rise to the fourteen parallels examined here.

Did Bacon Borrow Ideas from Shakespeare?

If the many parallels between *The Tempest* and the Baconian philosophy cannot be attributed to the rise of a new conception external to the two authors, is it possible that Bacon borrowed some of his ideas from Shakespeare?

On its face, this hypothesis is highly implausible inasmuch as it would be absurd for any philosopher to try to erect a philosophical system upon the foundation of a fantastic fictional narrative. The suggestion that Bacon in particular, who was not only a deep thinker but a philanthropist inspired by the belief that he had been "born for the service of mankind," constructed his natural philosophy in such a frivolous manner can hardly be taken seriously.[186]

Moreover, the hypothesis that Shakespeare's drama influenced Bacon's philosophy must be ruled out on chronological grounds. The first recorded performance of *The Tempest* took place on November 1, 1611, when it was

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[186] *Of the Interpretation* 84 (Preface ["Believing that I was born for the service of mankind, . . . I set myself to consider in what way mankind might be best served, and what service I was myself best fitted by nature to perform"]).

presented at Whitehall before King James.[187] Most Shakespeare scholars believe that it was composed between 1610 and 1611. By then, however, Bacon had already begun to formulate his theory of inanimate spirits and had already written several of his natural-philosophical essays, including *The Masculine Birth of Time, The Advancement of Learning*, and *Thoughts and Conclusions on the Interpretation of Nature* (c. 1607).[188] Thus, although other Baconian writings on the same general subject, such as *The New Organon* and *Sylva sylvarum,* had not yet appeared, his natural philosophy was already extant when *The Tempest* was probably written.

In addition, what is known about the manner in which Bacon developed his natural philosophy shows beyond any doubt that he did not take the ideas that comprise it from *The Tempest.* As Rees explains, the philosophy "grew and matured as Bacon raided disparate traditions for attractive titbits which he refashioned as a curious hybrid which embodied some very peculiar alliances of ideas." The system came into being as a set of responses to ancient and modern bodies of thought, including "atomist and Aristotelian natural philosophies, . . . the work of Paracelsus [Philippus Aureolus Theophrastus Bombastus von Hohenheim, 1493–1541], of William Gilbert [1544–1603], [Bernardino]

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[187] See, e.g., Vaughan and Vaughan, Introduction 6.

[188] See Rees, Introduction, *Philosophical Studies* lix.

Telesio [1509–88], [Francesco] Patrizi [1529–97], and others besides."[189]

Bacon's tendency to combine ideas he had borrowed with original ideas of his own is evident in his theory of spirits. Pott says that Bacon "must have derived the original germ" of his conception of spirits from what Paracelsus had said about the "Vital Spirits of Nature" but adds that "[t]he method in which he [Bacon] handles the subject is . . . peculiar." According to Zagorin, Bacon's spirit-related doctrines were influenced by various sources, including the Italian philosopher Bernardino Telesio,[190] and Bacon's descriptions of inanimate spirits, as Rees says, had "affinities . . . with Neoplatonic, Paracelsian, and late sixteenth-century pneumatism." But the "disposition" of the ideas contained in Bacon's speculative system "was not, taken in sum, . . . Paracelsian, Telesian or anything else."[191]

To a considerable extent, the Baconian theory of spirits is comprised of inferences drawn and assumptions made by Bacon himself and only by him. Those original contributions were not facts he had discovered by following the methods of interpreting nature he propounds in his own philosophy; on the contrary, they were, in Zagorin's words, "devoid of empirical foundation." Bacon's assertions that spirits possess certain specific attributes were hypotheses he had

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[189] Introduction, *Philosophical Studies* xxxvii.

[190] See Zagorin 117.

[191] Rees, Introduction, *Philosophical Studies* lxix (emphasis omitted).

formulated "by the ordinary use of his intellect" but had not proven to be valid. He accepted them tentatively, believing them to be "nearer the truth than others," but did not explain why he had embraced them or even "indicate . . . the kind of evidence that might establish the existence of spirits."[192] Because Bacon derived his spirit-related doctrines partly from his own unexplained, undefended, and idiosyncratic thought processes and intuitions, it is hardly surprising that they turned out to be "distinctive" and "peculiar to himself."[193] They also belonged to a theory of matter that was "not quite like anything in the works of earlier writers."[194] "[W]hatever the intellectual antecedents of its parts," that theory "was unique to him."[195]

In short, Bacon did not derive his natural philosophy from a single new play, author, or conception that had happened to come along. Rather, he laboriously constructed it himself, piece by piece, over a long period of time by engaging in a complex and creative intellectual process that integrated ideas borrowed from several identifiable thinkers with speculations of his own.[196] As Fulton H. Anderson sums

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[192] Zagorin 118, 119.

[193] Dixon 415.

[194] Rees, "Francis Bacon and *spiritus"* 281.

[195] Rees, Introduction, *Philosophical Studies* lxix.

[196] See Cockburn 427 ("Bacon did not learn his philosophy . . . , his natural science, his politics, his history or his law from fleeting allusions to these subjects in the works of contemporary drama-

the matter up, some of Bacon's natural-philosophical ideas were suggested to him by other authors, but their philosophies "are never quite equivalent to Bacon's own" because "[w]hatever he accepts is transformed by his own thinking in accord with his own distinctive principles."[197]

For all these reasons, we must reject the hypothesis that Bacon borrowed the elements of his natural philosophy from *The Tempest*.

Did Shakespeare Borrow Ideas from Bacon?

From the general nature of philosophical thought, the empirical priority of Bacon's natural philosophy over Shakespeare's play, and the distinctive manner in which the philosopher arrived at his conclusions, it follows that the fourteen interrelated ideas we have examined were originally elements of that philosophy and were subsequently incorporated, in symbolic form, into the drama. Bacon's multifaceted philosophy, in other words, was the "new conception of the physical world" that gave rise to the many parallels, and it was the content and complexity of his system that furnished the model or template for the remarkably similar material we find in the play.

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tists. He learnt them from other reading and, where applicable, from his own observations and cogitations").

[197] *Philosophy* 302; *Francis Bacon* 350.

Why Did the Author of *The Tempest* Allegorize Bacon's Philosophy?

If the creator of Prospero, Ariel, and Sycorax brought those characters into conformity with the Baconian natural philosophy in order to allegorize it, determining what he probably sought to accomplish by doing that may help us to identify him. Inasmuch as the usual purpose of allegorical fiction is to give expression to what are believed to be important truths, it is probably safe to assume that the author of *The Tempest* regarded Bacon's natural-philosophical tenets and speculations as such. And if we turn once again to Bacon for general guidance, we learn that, for an author who believes a set of teachings to be true, translating it into allegory or "Parabolical Poesy" may serve either of two "contrary purposes." On the one hand, it may function, as it does in Aesop's fables, as a "method of teaching" that uses concrete examples to illustrate abstract ideas. By bringing such ideas "nearer to the sense,"[198] Bacon tells us, an allegory of this kind gives them "an easier passage to the understanding."[199] On the other hand, an allegorical story may serve as "an artifice for concealment." When such a story represents "the secrets and mysteries of religion, policy, and philosophy," for instance, its chief purpose is to hide things "the dignity

[198] *Of the Dignity* 316, 317 (Bk. 2, ch. 13).

[199] *Of the Wisdom* 698 (Preface).

whereof requires that they should be seen as it were through a veil."[200]

Bacon's account of the concealment function of allegory reflects beliefs widely held during the Renaissance. As Michael Srigley explains in *Images of Regeneration* (1985), the writers of that era regarded themselves as the guardians of certain sacred truths, which they allegorized for the purpose of revealing and concealing them at the same time. By wrapping such teachings in an entertaining fable, an author could divulge them to the initiated elite capable of deciphering the story's inner significance while also hiding them from the unworthy masses, who might profane them if they were allowed to remain unveiled.[201] An essay on poetry published in England in 1591 and cited by Srigley states that allegory was also used in this way during antiquity:

> [T]he men of greatest learning and highest wit in the ancient times did of purpose conceal these deep mysteries of learning, and, as it were, cover them with the veil of fables and verse for sundry causes: one cause was that

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[200] *Of the Dignity* 317 (Bk. 2, ch. 13). See also Bacon, *Advancement* 187 (Bk. 2); Bacon, *Of the Wisdom* 698 (Preface ["Parables have been used in two ways, and . . . for contrary purposes. For they serve to disguise and veil the meaning, and they serve also to clear and throw light upon it"]). For a paraphrase of Bacon's explanation of the two functions of allegory, see Rossi, *Francis Bacon* 117.

[201] See *Images* 8.

> they might not be rashly abused by profane wits, in whom science is corrupted, like good wine in a bad vessel. . . .[202]

The surface fiction served, as Srigley points out, as a blind that distracted poorly qualified readers from the meaning beneath it. "Only those with the requisite knowledge and insight, who were prepared to persevere, could make the transition from the surface to the allegorical depths."[203] One of the things the ancient poets allegorized for these reasons was their "true understanding" of natural philosophy.[204]

Which of these contrary purposes was the natural philosophical allegory in *The Tempest* meant to serve? In all probability, Shakespeare's goal was not to teach the Baconian philosophy to the masses. For unlike the animal characters who enact and make plain the precepts Aesop wanted to impart to readers through his fables, Prospero, Ariel, and Sycorax are too far removed from the ideas they represent to make them clear to everyone. Thus, although Ariel exhibits several of the characteristics Bacon attributes to inanimate spirits, our dramatist could not have expected most people to learn from Ariel's imprisonment in a tree that such spirits are confined within all tangible matter or to make

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[202] Harington 203 (spelling modernized). The essay in which this passage appears was published under the name of Sir John Harington. In the opinion of William T. Smedley, however, its author was in fact Francis Bacon (see 60). If Smedley is correct, the passage may explain why *The Tempest* was written.

[203] Srigley, *Images* 10.

[204] Harington 201–02 (spelling modernized).

other leaps of that kind. It is therefore unlikely that he composed *The Tempest* in order to give Bacon's theory of spirits "easier passage to the understanding."

What the dramatist probably sought to accomplish was to veil Bacon's ideas in such a way that he could conceal them from the multitude while disclosing them to people like Constance M. Pott and Gustavus Holzer, who were capable of working out the surface story's hidden meaning. And if concealment of this kind was one of Shakespeare's objectives, we can infer that he regarded fourteen of Bacon's natural-philosophical teachings not only as truths but as *sacred* truths worthy of being safeguarded against profanation.

The Allegory and Its Purpose as Evidence of Authorship

Inasmuch as several of the spirit-related doctrines presented in *The Tempest* were not universally or even widely accepted but were peculiar to Bacon, how likely is it that a dramatist other than Bacon himself believed all of them to be sacred truths? Is it even possible that someone other than Bacon set out to protect ideas embraced only by him, and by him only tentatively, from the abuse that might be heaped upon them by "profane wits"? Has any author ever revered another author's speculations to such an extent that he went to great lengths to translate them, without exception, into allegory?

Even if the dramatist's objective was not to veil fourteen of Bacon's ideas but to teach them to all auditors and readers of the play, despite the difficulty of doing so by means of

an allegorical drama, it is impossible, in my view, to credit the hypothesis that someone other than Bacon chose to pursue that goal. For no one other than Bacon could have believed all his conjectures, however tentative and peculiar, to be so valuable that he took it upon himself, in the manner of Aesop, to make the general population aware of them.

As we have seen, Shakespeare did not merely permit Bacon's natural philosophy to influence him during the composition of *The Tempest.* Rather, he allowed it to dictate all the major choices he made when assigning to Prospero, Ariel, and Sycorax their improbable attributes. Point by point, the dramatist deliberately and carefully devised those characters in such a way that they would represent not only Bacon's widely admired methodological prescriptions but also his idiosyncratic and little-noticed speculations concerning the inner workings of nature. Whereas dramatizing Bacon's most useful practical recommendations is something an admirer of the Baconian method of inquiry other than its author might have done, incorporating into the allegory several of Bacon's seemingly arbitrary and inconsequential assumptions concerning the nature of spirits is not. In writing the play as he did, the play's author displayed the kind of scrupulous fidelity to Bacon's system as a whole that we would not expect to see in anyone other than the philosopher himself.

Among the dry Baconian ideas Shakespeare dressed in the finest of literary garments and thereby exalted in *The Tempest* are several technical and seemingly trivial details relating to spirits such as their paradoxical combination of airiness with fieriness and the predominance, in inanimate

spirits, of the former over the latter. Dramatizing such technicalities did not render the play more entertaining, more beautiful, or more satisfying as drama or poetry. This tells us that the primary reason for doing it was not artistic but natural-philosophical. The incorporation of such minutiae into *The Tempest* indicates that, in its author's judgment, all Bacon's ideas about spirits, however technical or trivial, were intrinsically valuable as descriptions of nature's hidden processes. If those ideas were held only by Bacon, is it conceivable that someone else, who was neither the author of Bacon's natural philosophy nor even a student of that general subject, somehow came to believe that the smallest details of another man's guesswork with regard to spirits had so much merit as what we would call scientific knowledge that he decided to immortalize them in the form of an awe-inspiring allegorical drama?

These things that the dramatist did "give notice from afar and cry out," to borrow a Baconian expression, that Francis Bacon wrote *The Tempest* under the name of William Shakespeare. For no one other than the author of the philosophy allegorized there would have had any reason to do them.

6. Conclusion

ONE student of the Shakespeare authorship question contends that unless a revealing letter or holographic poem or play is found, the mystery can never be solved.[205] In fact, however, some types of circumstantial evidence are even more probative than eyewitness testimony. Circumstances cannot lie, for one thing, and if they are numerous and can only be explained by drawing one particular inference, they should be regarded as positive proof that the inference is valid. In a case "where . . . a considerable number of . . . facts are to be found, explainable on one hypothesis only, it is irrational not to accept their obvious lesson."[206]

The presence of an elaborate Baconian allegory in *The Tempest* can only be explained, in my judgment, on the hypothesis that Francis Bacon put it there. Constance M. Pott expressed the same opinion in 1885, writing that "the thought of any two men, forming the same fanciful theories, and deriving from them the same subtle thoughts and conclusions, is too improbable to be seriously entertained."[207] Gustavus Holzer made a similar argument in

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[205] See Williams 292 ("Until a pertinent letter or an original manuscript of any play or sonnet is found that provides conclusive evidence of one author or another, the Authorship Question will remain alive as a vital inquiry").

[206] Ames 2.

[207] *Francis Bacon* 221 [misprinted as 121]. See also Pott, *Did Francis Bacon* ix ("the conviction" that Bacon was the concealed poet and dramatist "has grown out of . . . an ever-increasing perception of

1905; the parallels compel us to presume, he said, that the play and Bacon's prose writings were developed in the same "Denkwerkstätte" or "laboratory of ideas."[208] The inference drawn by Pott and Holzer is ineluctable because it is impossible to conceive of any other explanation of the many points of correspondence. By bringing Prospero, Ariel, and Sycorax into close conformity with Bacon's peculiar set of natural-philosophical ideas, Shakespeare gave us fourteen reasons to believe that he and Bacon were the same author writing under different names. Like a set of fingerprints, the clues in the play point to Bacon alone and exclude all other authorship candidates. Of the Shakespeare plays that contain indicia of their author's true identity, none speak his name as loudly or as clearly as *The Tempest.*

If the evidence in the play is thought to fall short of settling the authorship question, it is beyond any doubt sufficient, I believe, to establish a prima facie case for Bacon. Accordingly, it shifts to anyone who wishes to ascribe the authorship to someone else the burden of hypothesizing a plausible alternative explanation, compatible with that as-

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the similarities between those [Bacon's] prose works . . . and the poems and dramas which infold every peculiarity of Baconian . . . philosophy . . . and belief").

[208] *Bacon-Shakespeare* 21; my trans. See also Bormann 22 ("The affinity to Bacon's collective science . . . is of so intimate a character as to justify the assumption that both works, namely *The Tempest* and *The Great Instauration,* emanated from ONE mind, in short, that the poet and the thinker consisted of but one and the same person").

cription, of why and how the Baconian allegory was or might have been incorporated into the drama.

Although that allegory is highly probative in and of itself, its significance does not lie in what it proves standing alone but in what it proves in combination with the many other clues that point to Bacon.[209] As George Greenwood observes, the case for Bacon is like a cord, the strength of which depends, not upon that of one or a few individual threads, but upon that of the bundle as a whole.[210] Even if the threads representing the Baconian allegory in *The Tempest* are omitted from the evidentiary cord, it is very strong. Adding to it

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[209] Among the works that contain enough evidence to show how strong the case for Bacon is are those by Cockburn and Baxter. For other studies of the remarkable similarities between Shakespeare's ideas and those of Bacon, see, e.g., Donnelly 439–41 (on their "peculiar" beliefs about spirits); Bormann 9–22 (on Baconian ideas about wind and other natural phenomena in *The Tempest*); Webb (on parallels in scholarship and scientific, philosophical, and political ideas); Reed, *Francis Bacon* 15–61 (on various parallels); Greenwood (on common scientific beliefs); Melsome 34–73 (on ideas common to *Measure for Measure* and *Of the Dignity*); Moore (on *Hamlet* and *Advancement*); Farrington, "Mirror" (on *Hamlet, Measure for Measure,* and *Of the Dignity*); Farrington, "Plot" (on *All's Well That Ends Well, Advancement,* and *Masculine Birth*); Cockburn 425–82 (on various parallels); Clarke 184–87 (on *The Tempest* and several of Bacon's prose works). For evidence that rare phrases used in *The Tempest* were employed by no or few contemporary authors other than Bacon, see Clarke, app. F.

[210] See Greenwood 170–71 ("though one, or two, or three threads may not suffice to bear a weight, a great many threads combined into a cord may do so").

all fourteen of those strands obviously makes it considerably stronger and perhaps even strong enough to pull some open-minded opponents of the Baconian theory out of the darkness and into the light.

If Baconians continue to gather and draw attention to the evidence, old and new, that supports their authorship ascription, they may eventually succeed in persuading the world that Francis Bacon deserves the credit for the immortal plays and poems of Shakespeare. Bacon himself evidently thought that such recognition, which he sought during his lifetime to avoid, would come to him in the long run. For he wrote in his last will that he was leaving his "name and memory" to "the next ages."[211] The meaning of that cryptic remark, I believe, is that in the distant future, perhaps after many centuries, Bacon's unparalleled achievements as a dramatist and poet would surely be acknowledged because, as he famously observed, "truth is rightly called the daughter . . . of time."[212]

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[211] "Last Will" 539.

[212] *New Organon* [Rees] 133 (Bk. 1, aphorism 84).

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About the Author

Don Elfenbein was born in Erie, Pennsylvania, and grew up in Harrisburg. He earned an A.B. magna cum laude in developmental psychology and anthropology at Harvard College, where he was elected to Phi Beta Kappa and won a Detur Prize for academic excellence. He also holds a J.D. from the same university.

For several years, Don was a lecturer and professor at American law schools, including Northwestern and the University of Pittsburgh, teaching legal philosophy, constitutional theory, criminal law, torts, analysis, and writing. During his stint as an academic, he published a wide-ranging study of two opposed conceptions of the Bill of Rights, their philosophical underpinnings and history, and their role in constitutional adjudication.

Don has also been employed as a freelance editor and consultant. As such, he has helped attorneys and scholars to improve their briefs, articles, and books. From time to time, he has worked as a ghostwriter of nonfiction. In addition, he has studied screenwriting and written a number of screenplays.

Since the 1970s, Don has been deeply involved in the investigation of esoteric, mysterious, and controversial subjects. One he has found to be extraordinarily absorbing is the Shakespeare authorship question.

Don lives with his wife Anna, an American-literature and film professor at West Virginia University, in Morgantown, West Virginia.