NOVEL EXPERIMENTS: SPECULATIVE SCIENCE IN EARLY AMERICAN LITERATURE

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This thesis explores eighteenth and nineteenth-century cultures of experiment, which are manifested as scientific, literary, and political experiments. As co-participants of this experimental culture, this thesis reads science, literature, and politics in conjunction with one another. Charles Brockden Brown’s and Herman Melville’s literary experimentations are treated as “fictional-thought experiments” that exist alongside and with the scientific and political experiments of the eighteenth and nineteenth centuries. Of particular interest are the atmospheric and chemical sciences which are particularly useful for developing inventive ideas about race and nation.
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INTRODUCTION

“The number 2 is a very dangerous number: that is why the dialectic is a dangerous process. Attempts to divide anything into two ought to be regarded with much suspicion.”

C.P. Snow, The Two Cultures

“There have been plenty of days when I have spent the working hours with scientists and then gone off at night with some literary colleagues,” C.P. Snow announces at Cambridge University’s annual Rede Lecture through which he effectively outs to the world that he is a scientist by day and literary figure by night. Snow’s 1959 Rede Lecture, “The Two Cultures and the Scientific Revolution,” sets off a controversy that still has the academy reeling. In his lecture, Snow is concerned with what he observes to be the increasing split of “intellectual life as a whole in western life” into “two polar groups” with the “literary intellectuals at one end and the “scientists, and as the most representative, the physical scientists” at the other (4). The divide between these two groups is so wide that he calls them “two cultures” (9). The two cultures not only express “hostility and dislike towards one another, especially among the young,” he notes, but most importantly there exists between the two “a gulf of mutual incomprehension” and “lack of understanding” (4). Each with their own language and specific social norms, the two cultures simply cannot understand one another.

Trained as a researcher in the field of infra-red spectroscopy, Snow actually began his career in the sciences. He received much publicity for discovering how to produce Vitamin A by artificial means, only to realize soon after that his calculations were off. As a result, he left his position as a researcher at Cambridge University and pursued a career
as a literary author. In 1932, Snow publishes a detective story, *Death Under Sail*, followed by a novel about a scientist called *The Search*, but that does not mark the end of his involvement in the sciences. In 1945 he becomes a Civil Service Commissioner where he is involved primarily with scientific appointments, in addition to an advisory position he takes at the English Electric company, which would allow him to continue to write (Collini xx, xxi).¹ Both literary author and man of science, C.P. Snow inhabits both intellectual spheres but not without its consequences. An established literary author and scientific figurehead, C.P. Snow’s life may be likened to an unusual passing narrative—that of the bifurcated writer/scientist persona who can exist in both communities. Both author and scientist, Snow maneuvers between these two intellectual spheres, an experience that would eventually be the cause of his fame. C.P. Snow’s account of these experiences in the 1959 Rede Lecture, has become, for better or for worse, a stand-in for the general state of the Western intellectual world as we know it.

Snow finds himself torn between the cultures, yet curiously able to move fluidly from one to the other and back again. Snow elaborates on the feelings of moving from one community to the other:

> I have had, of course, intimate friends among both scientists and writers. It was through living among these groups and much more, I think, through moving regularly from one to another and back again that I got occupied with the problem of what, long before I put it on paper, I christened to myself as the ‘two cultures.’ For constantly I felt I was moving among two groups—comparable in intelligence, identical in race, not grossly different in social origin, earning about the same incomes, who has almost ceased to communicate at all…” (2).

As he maintains ties with cultures that have practically “ceased to communicate at all,” Snow feels like he is moving between separate groups even before he ever devises a
name for this. Through “living among these groups” and more importantly “through moving regularly from one to another and back again” Snow becomes occupied with the problem of the “two cultures” (2). Most notably, Snow notes how long before he puts his ideas on paper he had “christened” to himself this as the problem of the “two cultures” (2). Snow is internally troubled and claims he even gives a name to these feelings long before he makes his ideas public. But Snow is, of course, most famous, for doing just that—giving words to these individual feelings of his and generalizing to encompass the current state of intellectual life.

Culture: Science and Literature

Snow gives words to express a feeling, a sense, a general change in intellectual climate and for that reason these words become incredibly important to twentieth and twenty-first century intellectual life. While Snow’s binary is indeed intriguing, sexy even, we would benefit from taking a better look at this binary and try to see it for its faults, and most importantly, why we as an intellectual culture continue to latch on to it. One major flaw in Snow’s logic is his very existence. Although Snow observes these two cultures, he proves that liminal figures can exist, who traverse the line between the sciences and the humanities. Snow himself even concedes that some may find his binary of the two cultures too reductive. Some of his “non-scientist” friends of “strong down-to-earth interests” believe this is an “oversimplification” and “that if one is going to talk in these terms there ought to be at least three cultures” but that is not always the case (Snow 9). They argue, Snow notes, “that though they are not scientists themselves, they would share a good deal of scientific feeling” and they have as little use for the “recent literary
culture as the scientists themselves” (9). Snow relates how “some of his American sociological friends […] refuse to be corralled in a cultural box with people they wouldn’t be seen dead with” (9). He responds as follows:

I respect those arguments. The number 2 is a very dangerous number: that is why the dialectic is a dangerous process. Attempts to divide anything into two ought to be regarded with much suspicion. I have thought a long time about going in for further refinements: but in the end I have decided against. I was searching for something a little more than a dashing metaphor, a good deal less a cultural map: and for those purposes the two cultures is about right, and subtilising any more would bring more disadvantages than its worth (10).

Snow concedes that binaries are dangerous things, but refuses to refine his concept. Snow is more interested in creating a metaphor, rather than an actual cultural map, but what about this third culture?

In *Between Literature and Science: Poe, Lem, and Explorations in Aesthetics, Cognitive Science, and Literary Knowledge* (2000), Peter Swirski notes that there is in fact a “vast chunk of territory in the no-man’s-land between fictional flights of fancy and systematic studies pursued by the sciences […]” (x). The “Two Cultures,” are “supposed to be alienated from, if not antagonistic towards each other” but that is not always the case (Swirski x). Could this “vast chunk of territory” be the “Third Culture”—that liminal space that Snow and other author-scientist figures occupy? In envisioning this “Third Culture,” I ask if there ever was a time in the history of science and literature when this “Third Culture” was actually the dominant culture, without the clear binary between the sciences and the humanities. Snow himself is a good example of a liminal figure who complicates his own binary, but are there others? I ask then, What if we were to complicate Snow’s binary; what if we were to recognize that the current divisions we
mark between the sciences and the humanities is actually a relatively recent development in the long history of science? My answer: in recognizing the history of the schism of intellectual life, our own cultural moment would very much benefit in reevaluating whether this “two culture” model is really very useful at all.

Literature and the Eighteenth-Century Sciences

We might phrase this question another way: why have students of science always detested their writing classes? Was there ever a time when language was valued in the sciences? Eighteenth-century men of science understood how important language was to their discipline. The eighteenth-century chemical sciences are, thus, deeply invested in what we, in our contemporary moment, might associate with so-called literary concerns. The chemical sciences, which encompass the elemental, atmospheric, and electrical sciences, attempt to give words, and in turn, shape to that which cannot be seen; but, words, it turns out, are often elusive, particularly when trying to describe the invisible. The eighteenth-century chemical sciences are very much invested in the problem of the word. In order to elucidate this I will examine the preface of Antoine Lavoisier’s *Elements of Chemistry* (1790), the first prototype of the modern-day scientific textbook.

Lavoisier is constantly thinking about the role of language and word in the generation of scientific thought. His preface to his scientific textbooks sounds, in many ways, like the preface to an eighteenth-century novel. Lavoisier takes language seriously. “We think only through the medium of words,” Lavoisier notes, quoting the Abe de Condillace and his musings on the art of logic. (xiii). “Languages are true analytical methods,” Condillace continues, “Algebra, which is adapted to its purpose in every
species of expression, in the most simple, most exact, and best manner possible, is at the same time a language and an analytical method” (qtd. from Lavoisier xiii). For Condillac, languages act as “true analytical methods” and thus Algebra, in its desire to reduce language to its simplest and most exact form should be considered a language in its most basic unit. In a self-reflective moment, Lavoisier reveals how the process of writing *Elements* made him fully appreciate Condillac’s idea that language itself is an analytical method. “When I began the following Work [*Elements of Chemistry]*,” Lavoisier recollects, “my only object was to extend and explain more fully the Memoir which I read at the public meeting of the Academy of Sciences in the month of April 1787, on the necessity of reforming and completing the Nomenclature of Chemistry” (xiii). Lavoisier may have begun what eventually develops into his *Elements of Chemistry* with the sole intention of improving scientific nomenclature; yet his finished product is far more than a revision of scientific names. In reflecting on the writing process of his finished scientific treatise, Lavoisier observes how language and thought are inextricably linked. In attempting to improve the chemical language, he could not help but improve chemical concepts as well. For Lavoisier, science and language are inseparable. “While I thought myself employed only in forming a Nomenclature, and while I proposed to myself nothing more than to improve the chemical language,” Lavoisier recalls, “my work transformed itself by degrees, without my being able to prevent it, into a treatise upon the Elements of Chemistry (xiii). In the writing process, Lavoisier discovers just how essential scientific nomenclature—that words and concepts are interrelated and that when nomenclature is reformed, the scientific concepts will
change too. Like its literary counterparts, scientific thought is bound by the limited number of words that exist to communicate such ideas.

In his preface, Lavoisier dwells on the limitations of communicating scientific thought, which relies on words, which are always destined to fail. According to Lavoisier, every branch of science consists of three things: the “facts which are the objects of sciences,” “the ideas which represent these facts,” and “the words by which these ideas are expressed” and “like three impressions of the same seal, the word ought to produce the idea, and the idea to be a picture of the fact” (Lavoisier xxiii). In doing so, Lavoisier, curiously, turns the elusive sciences of the invisible world, what he ironically calls the “physical sciences,” into a physical process of making and production, in which words and ideas become stamps with physical residues. Scientific facts are described as objects, from which scientific ideas spring, and scientific nomenclature is then developed. This idea-making process is compared to the process of stamping, in which three impressions of the same seal are produced, one on top of the other.

Despite his heavy use of physical metaphors, Lavoisier is aware that scientific revolutions are nothing more than revolutions of language—those filmy, unphysical, almost invisible, words, which, detached from the original author’s body, always exceed their intended meanings. As Lavoisier notes, “And, as ideas are preserved and communicated by means of words, it necessarily follows that we cannot improve the language of any science without at the same time improving the science itself; neither can we, on the other hand, improve a science, without improving the language or nomenclature which belongs to it.” (xiii). Lavoisier, here, expresses the Catch 22:
scientific nomenclature cannot improve if the science itself does not progress, but this progress cannot happen without improving that very language that belongs to science. Thus, science cannot be separated from the concerns of language. To further complicate matters, although scientific facts and ideas are not faulty, the scientist is limited by one’s ability to communicate these facts. As Lavioisier expresses so well: “However certain the facts of any science may be, and however, just the ideas we may have formed of these facts, we can only communicate false impressions to others, while we want words by which these may be properly expressed” (Lavoisier Xiii). Once again, the problem of science, for Lavoisier, is a problem of communication. Without the right words to convey these ideas, scientists will continually be communicating “false impressions” to one another.

Lavoisier warns against these “false impressions,” which are often the result of a wandering imagination. He compares the scientist to the child, who learns about its surroundings through trial and error. Unlike the child, who is harmed through the mistakes he/she makes, “the false judgments we [scientists] form neither affect our existence nor our welfare; and we are not forced by any physical necessity to correct them” (Lavoisier xvii). Including himself as part of this collective “we,” Lavioisier positions himself as part of an entire scientific community that is susceptible to the powers of the imagination. Unlike the child, whose errant behavior is constantly being checked and corrected, the scientist faces the problem of the imagination, which only reinforces these false conclusions. Lavoisier expands on the dangers of the imagination as follows:
Imagination [...] which is ever wandering beyond the bounds of the truth, joined to self-love and that self-confidence we are so apt to indulge, prompt us to draw conclusions which are not immediately derived from facts; so that we become in some measure interested in deceiving ourselves. Hence it is by no means wondered, that, in the science of physics in general, men have often made suppositions, instead of forming conclusions. These suppositions, handed down from one age to another, acquire additional weight from the authorities by which they are supported, till at last they are received, even by men of genius, as fundamental truths (Lavoisier xvii).

The enemy of science, the imagination is capable of “wandering beyond the bounds of truth” and in this way self-loving scientists are always “deceiving ourselves” (xvii).

Although he includes himself in this group of scientists who could be prone to letting their imaginations run wild, Lavoisier claims to have found a way to master a wandering mind. He imposes on himself, “as a law, never to advance but from what is known and to what is unknown; never to form any conclusion which is not an immediate consequence necessarily flowing from observation and experiment...” (xvii). Lavoisier effectively describes the scientific method, in which conclusions are only made via observable facts, but this will fall short, even for Lavoisier, when he attempts to describe the invisible world. In these moments, science necessitates imaginative leaps to describe the indescribable.

In his explanation of the heat force and the laws of attraction, Lavoisier finds that even he must rely on an imaginative metaphor or two to describe the un-seeable. The invisible world dismantles the empirical eye, and instead demands more imaginative leaps. Lavoisier describes the organizing principle of matter in terms of oppositional forces—specifically, that of the attractive forces versus the repulsive force of heat—and,
forces, Laviosier finds, are very difficult to describe. Lavoisier attempts to describe the repulsive force as follows:

That every body, whether solid or fluid, is augmented in all its dimensions by any increase of its sensible heat, was long ago fully established as a physical axiom, or universal proposition, by the celebrated Boerhaave […] It is supposed, that, since the particles of bodies are thus continually impelled by heat to separate from each other, they would have no connection between themselves; and, of consequence, that there could be no solidity in nature, unless they were held together by some other power which tends to unite them, and, so to speak, to chain them together; which power, whatever be its cause, or manner of operation, we name Attraction. Thus the particles of all bodies may be considered as subjected to the action of two opposite powers, the one repulsive [heat], the other attractive, between which they remain in equilibrio (1-3) [italics mine].

Thus, according to Lavioisier’s schema, matter only remains intact because of an “equilibrio” or equilibrium between these two oppositional forces: the heat that attempts to undo matter’s organization is held in check by an equally oppositional force, the force of attraction that “chains” matter together. Recall how Lavioiser warns against wandering imaginations and the use of inaccurate nomenclature that will communicate false impressions of scientific thought. Despite all of this, Lavoisier cannot help but rely on a very physical metaphor to describe a non-physical entity: he describes the force of attraction as that power that “so to speak” chains together particles of bodies that are continually impelled by heat to separate themselves. In order to describe the invisible world, Lavoisier must resort to existing metaphors because what Lavoisier soon comes to realize is that in order to describe the unknown one must rely on that which is already known. Lavoisier cannot possibly imagine the invisible world without metaphors that apply to the visible world because as a product of a visual world, Lavoisier has no other way of envisioning such a world. He must rely on an existing set of metaphors and ideas.
Lavoisier is, once again, forced to rely on metaphors to describe the repulsive force, or heat, an invisible force he describes in quite material terms. Determined to describe the invisible world as accurately as possible, Lavoisier finally concedes to defeat when he tries to describe the heat force and inevitably fails:

It is difficult to comprehend these phenomena, without admitting them as the effects of a real and material substance, or very subtile fluid, which, insinuating itself between the particles of bodies, separates them from each other. Even allowing that the existence of this fluid may be hypothetical, we shall see in the sequel that it explains the phaenomena of nature in a very satisfactory manner (52)

Always wary of letting his imagination take hold of his science, Lavoisier is finally forced to rely on metaphor, specifically that of a liquid, to describe this invisible force, which he describes as heat. Heat, Lavoisier underscores, is not a liquid, but he concedes that “it is difficult to comprehend these phenomena, without admitting them as the effects of a real and material substance” that “insinuating itself between the particles of bodies, separates them from each other” (52). Despite this admission, Lavoisier saves himself by saying that “even allowing that the existence of this fluid may be hypothetical, we shall see in the sequel that it explains the phaenomena of nature in a very satisfactory manner” (52). Thus, even in a moment of scientific failure when Lavoisier is forced to rely on his imagination to construct this invisible world, he maintains that this metaphoric model corroborates nicely with nature and is therefore excusable.

Lavoisier once again warns against the dangers of the imagination as he continues to discuss this invisible substance, or heat, which tries to disrupt matter’s equilibrio:

Since this subtile matter penetrates through the pores of all known substances; since there are no vessels through which it cannot escape; and, consequently, as there are none which are capable of retaining it; we can only come at the
knowledge of its properties by effects which are fleeting and difficulty ascertainable. It is in those things we neither see nor feel, that it is especially necessary to guard against the extravagance of our imagination, which for ever inclines to step beyond the bounds of truth, and is very difficultly restrained within the narrow limits of facts (Lavoisier 55).

In this passage, Lavoisier describes heat as a “subtile matter” that “penetrates through the pores of all known substances” (52). Here, he uses a more generic term than liquid to describe this substance, and thus we see that his metaphor is not consistent and that science, in relying on language to convey the facts, is not quite as stable and factual as one might think. Very much concerned about guarding “against the extravagance of our imagination” especially with regards to “things we neither see nor feel,” Lavoisier is incredibly wary about this repulsive force and describing it accurately. Lavoisier is aware that the problem of letting the imagination run rampant becomes particularly problematic when attempting to describe the invisible world, and yet he still strives to be as accurate as possible. Although he eventually must rely on metaphors from time to time to describe this heat force, Lavoisier is still careless about his nomenclature. While he initially describes the repulsive force as heat, he is aware that this is a misnomer and needs to be corrected. When Lavoisier finally describes this invisible repulsive force as a liquid, he concedes that:

This substance, whatever it is, being the cause of heat, or, in other words, the sensation which we call warmth, being caused by the accumulation of this substance, we cannot, in strict language distinguish it by the term heat, because the same name would very improperly express both cause and effect (Lavoisier 52).

This invisible substance, “whatever it is,” which seems to cause heat or warmth, but is not heat itself. He warns against giving this force a name that would describe both cause
and effect; that would just be too confusing. To solve this problem of inaccurate or troublesome nomenclature, Lavoisier calls the repulsive force—or that invisible fluid that attempt to pull matter apart—the caloric (52). The term caloric, Lavoisier notes, is so important because it “distinguish[s] the cause of the heat, or that exquisitely elastic fluid which produces it, by the term caloric” (Lavoisier 53). Thus, caloric acknowledges that there is some preexisting force, or substance, or entity, that produces the sensation of heat, and that it is not heat itself. Caloric is “that exquisitely elastic fluid” or “subtile matter”—“whatever it may be”—that pushes its way throughout matter and produces heat as a byproduct. Thus, Lavoisier may concede that he is not really sure what caloric is—it maybe a fluid, or subtile matter, or something else entirely—but in the end he emphasizes the importance of nomenclature in distinguishing this “thing” from heat. Lavoisier then uses these imaginative leaps to come to alterations of nomenclature, and in this way, his imagination remains tempered and in control, at least in this moment of scientific analysis.

And yet despite his warnings against relying on the imagination to describe the invisible world, Lavoisier finds himself describing the caloric in very physical terms, with the following passage illustrating his most literal of all metaphors: that of the “ball and sand” metaphor. All particles, Lavoisier reviews, exist in a “certain state of equilibrium, between the attraction which tends to unite and keep particles together, and the effects of the caloric which tends to separate them” (64). Thus, “caloric not only surrounds the particles of all bodies on every side, but fills up every interval which the particles of bodies leave between each other” (64). Still at a loss for words to fully
describe this invisible force, Lavoisier resorts to the most physical of all metaphors in the following passage:

We may form an idea of this [the caloric], by supposing a vessel filled with small spherical leaden bullets, among which a quantity of fine sand is poured; this, insinuating itself into the intervals between the bullets, will fill up every void. The balls, in this comparison, are to the sand which surrounds them exactly in the same situation as the particles of bodies are with respect to the caloric [...] If, instead of spherical balls, we substitute solid bodies of a hexahedral, octahedral, or any other regular figure, the capacity of the intervals between them will be lessened, and consequently will no longer contain the same quantity of sand. The same thing takes place with respect to natural bodies (Lavoisier 64).

Caloric, that indescribable force, is now described as “fine sand” that when poured into a vessel filled with “small spherical leaden bullets” would fill up every void, wrapping the empty space between the sphericals in sand. In trying to describe the invisible world with its invisible properties, Lavoisier, despite much protestation, cannot help but rely on language to describe that which escapes description.

With his reliance on metaphor and the imagination to describe the invisible world, Lavoisier’s so-called scientific writing occupies what Snow calls the “third culture.” We might instead describe Lavoisier’s work in terms of what John Limon calls “parascience,” the term that “muddles the demarcation between scientific and nonscientific” (Limon 2). However, parascience, like the third culture, is still an anachronistic term that projects a divide on culture. It would be more useful to think about interesting spaces of literary, scientific, and political experiments in eighteenth and nineteenth-century culture. In this way, culture itself is the experiment.

If the novelist relies on the imagination to create invisible worlds for the reader through language, then not much distinguishes him from the man of science who relies
on language and metaphors to construct a theoretical model for understanding the un-
seeable world. Both are in the business of language and metaphor-making in order to
construct realities for their readers. Lavoisier’s model of a scientist who views the
process of language-making as part and parcel of the scientific process could prove
incredibly useful to the twenty-first century system of education, which is churning out
researchers in both the sciences and the humanities who feel disconnected from one
another. How might we bring figures like Lavioiser into our current century? For one, we
might consider a model of scientific inquiry that is less wary of the imagination than
Lavoisier was. Although Lavoisier insists good scientists guard their imaginations, J.A.V.
Chapple in *Science and Literature in the Nineteenth Century* (1986) points to the
imaginative nature of science, particularly of use in those groundbreaking, paradigm-
shifting eras. During the nineteenth century, he notes, “ideas about the submicroscopic
world of atom and molecule were what they had always been, unproved hypotheses”
(52). In the early twentieth century even, “outstanding physicists and chemists like Ernst
Mach and Wilhem Ostwald did not believe in the existence of atoms” (52). Scientists
began to believe that they actually existed after J.J Thompsons’ discovery in 1897 of the
electron, but it was not until 1911 that Rutherford suggested the possible existence of the
nucleus. “Well before this, however,” Chapple notes, “Maxwell had been only too willing
to invent his own theoretical model of electric particles in operation to account for the
known electromagnetic phenomena” (52). In proposing the possible existence of electric
particles, Maxwell reveals:

> I do not bring it forward as a mode of connection existing in nature or even as that
> which I would willingly assent to as an electrical hypothesis. It is, however, a
mode of connection which is mechanically conceivable and easily investigated…’

 […] It is, in other words, a useful fiction, an imaginative attempt to anticipate some future, more refined revelation of physical truth [italics mine] (qtd from Chapple 53).

Maxwell, the scientist, admits that he brings forth his idea not as an electrical hypothesis, but as a “useful fiction, an imaginative attempt” that could be used to anticipate some scientific future. The separation between the imagination and science is therefore an inaccurate one. Lavoisier’s metaphors of chains, sands, and balls, despite his claims that they be otherwise, are really nothing more than “useful fictions” and imaginative attempts.” Lavoisier even admits in these very moments that he must resort to physical analogies because the language he needs to describe the invisible world escapes him. In fact, he is incapable of describing particles that exist but cannot be seen. Instead, he must rely on physical metaphors and vocabularies to describe the invisible and in these moments “useful fictions” are created.

The same can be said for literary writing itself. Instead of looking at literature as mere flights of fancy, the field of literary criticism would benefit from looking at literature as another form of experimentation. As John Swirski intriguingly notes:

Only narrow ideological and philosophical commitments could have led some scholars to deny literature its cognitive power, with nihilistic claims that “literature in our time [is] essentially impossible” (Jameson 158). There are countless instances in the history of belles lettres, some recorded in Grant McColley’s pioneering Literature and Science (1940), to prove that literary fictions conduct their own form of inquiry. Their “field-specific” strategy, as we may call it, takes the form of original hypotheses, fictional thought-experiments, and narrative modelling. To anyone who reads literature, rather than what had been written about it in the last thirty years, it is clear that fiction has always faithfully carried out its cognitive function (x).
We might dwell on the cognitive function these “fictional-thought experiments,” which use “field-specific strategies” to form “original hypotheses” on notions of race, gender, and other unsolved categories.

I ask then, what if novels were laboratories? Paper may combust and digital readers may explode, but what if we were to imagine the novelistic space—that space where words and ideas meet—as the site of an imaginative experiment. In truth, literary experiments and scientific experiments actually share a lot in common. Both rely on language, in the end to convey their information. When a scientific experiment is finished, it is written up, but the great difference between the literary experiment and the scientific experiment is that in the scientific experiment the experiment and the writing are not separated from each other temporarily. In literary experiments, the write-up and the experiment are one and the same without any temporal delay. This frustrates us, confuses us, and makes the concept of a literary experiment seem nearly impossible. But imagine the novelistic space as a bubbling, reactive space where speculative ideas are added to create new and exciting compounds. Bearing this in mind, when I speak about literary experiments, I am not exclusively talking about experiments with form and genre (although the two are certainly related), but I am talking more generally about the ways in which the novelistic experiment exists alongside and with scientific experiments by providing its very own fictional-thought-hypotheses about the known (and unknown) world. I focus on the novel experiments of early America because of the importance these kind of novels play in literature of the Early Republic. With the American republic as a
new kind of experiment, the novel would prove to be a very useful space where unsolved ideas about race, nation, and class could be tested further.

By looking at science writing as a form of inventive writing and literary writing as a form of science writing, I intend to break down the false divisions we have been making between science writing and literary writing. In my first chapter, I look at Charles Brockden Brown’s *Wieland; or the Transformation* (1798) and raise the question of genre. Is this really a novel? Given the strange scientific footnotes and bizarre appendage of a novella, *Carwin, the Biloquist* (1805), I ask if *Wieland* should even be classified as a “novel” at all, or is it more closely associated with Brown’s annotated translation of Constantin Volney’s *A View of the Climate of the United States of America* (1805).

I am particularly interested in Brown because, like C.P Snow, he inhabits that liminal space where the science and literary-minded can coexist, but unlike Snow, Brown’s life is not marked by a sort of passing narrative. A member of the Friendly Society, an early American group of lawyers, physicians, and politicians who met regularly in New York City, Brown would consider himself a man of information, who could, and does engage with the scientific community even as he writes. His annotated translation of Volney’s *A View of the Soil of the United States of America* demonstrates his active participation in the communities of early American science, but his literary works demonstrate a scientific participation as well. Given the continuity of Brown’s writer and scientist persona, I ask if his “novel” would be more suited to be termed a parascientific works—a work that occupies the space between science and literature.
My second chapter will focus on Herman Melville’s *Pierre; or, the Ambiguities*. Not involved in the scientific community in the same way Brown or C.P. Snow are, Melville’s novel, nevertheless, exhibits a kind of imaginative science. I include Melville as yet another occupant of that liminal space—one whose writing blurs the current distinctions we often make between the sciences and literature. C.P. Snow laments the creative loss that results from the increasing divide between the two cultures because “the clashing point of two subjects, two disciplines, two cultures—of two galaxies, so far as that goes—ought to produce creative chances” (17). Rich in language of the atmospheric and chemical sciences, Melville’s novel disrupts those distinctions we tend to make between literary and scientific writers and demonstrates that seamlessness between literature, the sciences, and politics that defines nineteenth-century culture. Melville may not have been trained formally in the sciences, but science hovers in the nineteenth-century air, making its way into the literary and the political.

Melville and Brown then exemplify not what happens when the two worlds collide, but, crucially, that state before the worlds ever actually split, when they coexisted in an intellectual Pangea, where science and literature inhabited one continent. In looking back to this period of time when the distinctions between the two cultures had yet to fully manifest itself, we may come to reevaluate the intellectual state of our present and wonder about the creative losses that have resulted in both the humanities and sciences as the split between these two cultures continues. I look back to the past, then, with the hopes of illuminating the problems of our present.
CHAPTER 1
Charles Brockden Brown and the Novel Experiment

The site of political and scientific experimentation, the early American space might be said to bubble over in the figurative and literal sense. As the historian James Delbourgo notes in *A Most Amazing Scene of Wonders: Electricity and Enlightenment in Early America* (2006), astutely observes, “by transferring the experimental protocols of the laboratory to the field” with his famous kite and key experiments, Benjamin Franklin “effectively transformed nature itself into a giant laboratory, whose force could be manipulated through experimental gestures” (56). Franklin may turn the American landscape into his own personal laboratory, but the New World serves as the giant experimental laboratory for political republicanism and the climatic sciences of race and nation. Delbourgo notes the “electrical politics” of the eighteenth-century world, in which the world of the political was often described in electrical terms and made “the electrical body into a full-blown symbol of republican resistance” (132). Throughout the revolutionary era, electrical metaphors were used to portray “intense sympathetic feeling and fraternal participation” (Delbourgo 135). The republican patriotic spirit was understood as an electric spark, which, as the American minister to Spain, David Humphrey’s recalls as “the flame of freedom” that ran “From breast to breast and man electriz’d man” (138). An Enlightened American landscape was quite literally charged with the electric spirit of republicanism and a landscape that itself European naturalists claimed to have a heightened electrical composition.

While Revolutionary Americans may have viewed the electrical spark as patriotic and empowering, European perceptions of the American electricity were not always as
Volney cites empirical evidence—the silk riband, the vivid lightning, and loud thunders—as the proof of this American difference. Then Volney brings in the numbers. From June 28th to August, he claims that seventeen persons have been killed by lightning, which does not include the eighty severe accidents. According to Volney’s observations, the American landscape, with its heightened electrical atmosphere, is inherently dangerous. Charles Brockden Brown, the translator and annotator of the 1805 edition of Volney’s work, calls into question Volney’s evidence with the following annotation:

From the use of conductors, or from some other cause, accidents from lightning are rare in the American cities. One death, from this cause, in twenty years, in New York or Philadelphia, would be a liberal calculation. The terror of lightning, which prevails greatly, especially among the female sex, is a genuine formidable evil in America (199).
As an inhabitant of the American climate, Brown can attest to the inaccuracy of these statistics. Brown even calls into question Volney’s objectivity in the preface of his translation, as we will see shortly. Delbourgo, briefly mentions Brown’s footnote on electricity in his chapter on lightning rods and the direction of nature from *A Most Amazing Scene of Wonders: Electricity and Enlightenment in Early America*. Delbourgo correctly notes, “The suggestion that Americans were not masters of their electrical environment was provocative, not least to Volney’s own translator—Charles Brockden Brown” (51). “In a footnote to Volney’s *View of the Climate and Soil of the United States* (1804),” Delbourgo continues, “Brown patriotically defended the progress of that icon of American enlightenment—the lightning rod—that the Frenchman ignored” (51). While Delbourgo’s observations are keen, so ends his brief mention of Brown’s footnote, but Brown is not just any ordinary translator. Delbourgo never mentions that Charles Brockden Brown, said translator of Volney’s naturalist text, just happens to be the famed early American author. This is unsettling because Delbourgo reiterates the same divide I am criticizing in this thesis.

Delbourgo pushes for a cultural history of American science that moves beyond the all-encompassing figure of Ben Franklin to “offer a new approach to the American Enlightenment through stories of fleshy bodies and experimental machines, rather than Protestant sermons and republican constitutions” (7). In attempting to unearth the individual stories and careers of “non-elites,” Delbourgo is preoccupied with what appears to be more related to scientific experimentation of the upper and lower classes and the ways in which the “culture of experimental performance” allowed “a variety of
Americans to experience electricity in ways connected to their local senses of self and society” (7). Delbourgo is then interested with scientific experimentation across classes and different spheres. I add then another layer of complication to the cultural history of early American science, specifically one that includes literary figures and their novelistic experiments. Intriguingly, Brown’s 1805 patriotic defense of the safety of the American air and climate in his annotated translation is less apparent in his first novel. As we will see shortly, the novel experimentally plays with European notions of white degeneracy in the New World, whose heightened electrical composition creates individuals with anarchist tendencies who cannot check their revolutionary spirits. Brown then creates hypothetical European émigrés and their Americans descendants to see how the American space may effect the bodies of those who inhabit it. I would like to ask how might the novel act as another site of experiment, where ideas like electricity, race, nation, and the republican spirit could all be explored.

The Footnote and Charles Brockden Brown

To the twentieth and twenty-first century eyes, Brown is a frustrating literary persona. Brown as translator is not what unsettles us; rather, it is what he chooses to translate that is so strange to our current historiographic eye. As “America’s foremost litterateur,” Brown renders into English “no romantic tale,” but instead he chooses to translate a work on the climatology of the United States (Tichi 1). Furthermore, as Tichi notes, Brown’s “choice for translation seems doubly puzzling when we consider that a London English language edition was already available in America even as Brown labored at its American counterpart” (Tichi 1). It has been easier for critics to simply
dismiss this translation as an “anomalous quasi-literary interlude between his novels and his political-historical activities,” but as Tichi notes, “such easy dismissal of the translation may leave neglected a significant aspect of Brown’s thought” (2). There had to be a reason Brown felt the need to translate, and most importantly, annotate his own edition.

Tichi provides a possible answer. She focuses on the alterations Brown makes from the Volney’s original. Brown’s translation, Tichi argues, is part very much a political move. As she notes:

A close look at the eccentricities of Brown’s translation suggests that Volney stimulated the Philadelphian both to define the American in relation to his nation and continent, and to attempt actuation of the territorial expansion which, as of his first political pamphlet, Brown evidently believed would insure national progress. Indeed, the special biases Brown reveals in his translation make it quite clear that the effort was no perfunctory exercise in a language self-taught, nor a task undertaken only at the urging of Brown’s fellows in the Friendly Club. Rather, Brown’s translation of Volney appears to be the work of a mind bent upon using the pen for specific nationalistic purposes (Tichi 2).

Brown’s annotated translation, as any translations, has an agenda, and in this case, Tichi argues it is a political one concerning the idea of American empire building. Interestingly enough, Tichi looks at Brown’s only official foray into the scientific world and reads it for its politics, but current Brown scholarship could certainly benefit from holding our gaze on this piece of work for its scientific aspect. Brown scholarship has been comfortable delving into Brown’s political writings as a way of better illuminating his work, but little has been done with his overtly scientific writings. Looking at Brown’s scientific writing and his attention to the scientific method as science will help better illuminate his novels as literary experiments, or as Peter Swirski would call them,
“fictional-thought experiments” (x). So what would happen if instead of looking at this work as a strange hiatus, we were to acknowledge this piece as part of Brown’s experimentations with literature? If we refuse to view this work as a “strange” interlude in Brown’s career, then it forces us to reconsider how we think of Charles Brockden Brown. How might we reimagine the definition of literature in the early American period, and how might this affect the current artificial divide we place between the sciences and the humanities in our current intellectual culture? What if we were to put Brown’s writing alongside eighteenth-century science writing? How might understanding literary experiments as their own kind of scientific experiments complicate the distinctions between the humanities and the sciences we continually project back on the past?

An extensively footnoted gothic novel, Charles Brockden Brown’s *Wieland* (1798), published seven years before *A View of the Climate* (1805), uses the footnote in a similar kind of way—most notably, to situate the novel within a larger community of science. The postmodern reader is well acquainted with the footnote in the novel. Junot Diaz’s *The Brief Wondrous Life of Oscar Wao* (2007) is a good example, with humorous footnoting on Dominican history. Diaz, for instance, provides historical background on the Dominican dictator, Trujillo Molina, who is mentioned within the body of the text. “For those of you who missed your mandatory two seconds of Dominican history,” the footnote goes, “Trujillo, one of the twentieth century’s most infamous dictators, ruled the Dominican Republic between 1930 and 1961 with an implacable ruthless brutality” (Diaz 2). “At first glance, he was just your prototypical Latin American caudillo,” the footnote continues, but “he was our Sauron, our Arawn, our Darkseid, our Once and Future
Dictator, a personaje so outlandish, so perverse, so dreadful that not even a sci-fi writer could have made his as up” (2). Diaz dresses his tragicomic history in the traditionally stuffy garb of the historical footnote, but Diaz’s footnote is anything but serious. To the twenty-first century reader, Brown’s traditional use of the footnote may seem odd. Most perplexing of all for the modern reader are the moments when Brown gives his readers information on where to explore these scientific concepts further if interested, as if the literary novel also functions as a kind of scientific textbook. Take the following example: in trying to account for her father’s strange death, Clara, the narrator, explains it could have merely been the result of “the irregular expansion of the fluid that imparts warmth to our heart and blood, caused by the fatigue of the preceding day” (21). For those who may be curious about inquiring further, Brown includes the following footnote: “A case, in its symptoms exactly parallel to this, is published in one of the Journals of Florence. See, likewise, similar cases reported by Messrs. Merille and Muraire, in the “Journal de Medicine,” for February and May, 1783” (21). How can we make sense of such a move? This is a work of literature, after all, and not a scientific treatise. In order to come to terms with these strange sorts of moves in a literary text, it is easier for readers to conclude that Brown is mixing science writing with literary writing. Yet, in assuming this historical backward glance, we might ask if this mixture of genres is really even a mixture at all, and instead, a normative intermingling of science and literature?

Brown’s footnotes in his translation of Volney’s *A View of the Climate of the United States of America* (1804) are more than the usual editorial footnotes. Brown makes strategic use of these footnotes, and actually uses them as the space where he can
literally insert himself into existing scientific dialogues about the American continent that are dominated by European voices, much in the same way he uses the footnote to situate his novel within communities of science. Most notably, Brown takes issue with Volney’s generalizations about the American atmosphere, which becomes very obvious in a lengthy footnote. Seven years earlier, however Brown would publish *Wieland* (1798), a novel in which the protagonist’s German émigré father implodes on American soil and the first generation American loses his wits. The discrepancies here are enough to leave one asking what on earth happened to Charles Brockden Brown during these seven years to mark such a different turn? But instead of asking what happened to Brown, we might turn to the novel form which allows for the existence of more complicated and, at times, competing ideas. Paul Witherington’s analysis of Brown’s *Edgar Huntly* asks these very sorts of questions. Departing from a tradition of scholarship that posits *Edgar Huntly* as a literary failure for an unsatisfactory ending, Witherington instead argues for a new reading of Brown that would include him as an example of an “experimental novelist,” and “slip him some of the linguistic affection we currently lavish on Melville and John Barth” (164). “What is sometimes not stressed in otherwise excellent articles on Brown’s ideas,” Witherington intriguingly notes, “is the fact that Brown’s fiction is not seeking solutions to ontological and ethical problems so much as open-ended debate, and that he often speaks with two voices elucidating and not apologizing for the central ambiguities of his culture and his profession” (174). Witherington seems to be referring to critics like Nina Baym, who have found little literary merit in Brown’s novels. To Baym, Brown’s fiction is just a series of structural and narrative failures, and as a feminist re-envisioning
the American canon, her argument means much. Baym takes issue with the assumption that Brown’s literature was somehow more serious than other forms of early American writing, like say, the work of female American writer Susana Rowson in her novel *Charlotte Temple*. Baym, instead, works against such readings in claiming that Brown was as an amateur novelist, whose sloppy output of five novels in four years calls into question the seriousness of his literary attempts (87). But might we envision an American canon that includes both female and male authors, without the need to bash Brown for his sloppy writing? Ruling Brown’s novels as sloppy does not give him enough credit for his strange and experimental writing.

In considering the experimental nature of Charles Brockden Brown’s fiction, it is clear that Brown does not seem to be against experimentation itself, but rather against European mouthpieces that make unwarranted claims about American soil. Brown creates his own literary experiments and grapples with the trauma that is identity building, but as an American, this is part of that self-searching need to come to terms with an unchecked republican spirit and heightened electrical atmosphere. It seems, according to Brown, that it is another thing for a Frenchman to step in and make generalizations about the American climate. In the American case, such experiments are part and parcel of coming to terms with who and what they are, but for the Europeans it is merely another way to enact their colonial powers. Brown’s scathing introduction of Volney in *A View of the Climate* calls into question Volney’s objectivity as a Frenchman:

> The author of the following work first acquired distinction, in the reading world, by publishing Travels in Syria and Egypt. In many respects this work far exceeded, in accuracy and comprehensiveness, every former work on the same subject. It was, however, secretly pervaded by a bias against the natives of these
countries, by a disposition to view them in the worst light, and by a general persuasion that these countries ought to be possessed by France […] After a lapse of ten or fifteen years, Volney conceived the design of visiting another hemisphere. The rising states of America offered him not only an object worthy of his curiosity, but a place of secure asylum in a time of danger and distress. America was, to him, pretty much in the same situation as Syria and Egypt has been.

Brown criticizes Volney’s work, which Volney regrets is merely a naturalist observation and not a description of his thoughts on the American government and systems, by claiming that Volney is not as value-free as he claims to be. In Brown’s view, Volney’s work is bad science, complete with biases and personal politics that Brown claims to be at odds with the scientific method. “There is, perhaps, no part of this work which will be thought to be more inaccurately and superficially executed than that which relates to yellow fever and other diseases of America,” Brown continues, “By stepping into a circle foreign to his own, and in which his education and experience, notwithstanding his own opinion to the contrary, by no means qualified him to walk, he has exposed himself to much critical censure from professional men.” (xxiii). Brown censures Volney for getting involved in world of nation building.

Experiments in Race and Nation

A key function of the experimental early American novel is to serve as the space where Americans might come to terms with their racial/national identity. As Jared Gardner observes in *Master Plots: Race and the Founding of An American Literature, 1787-1845* (1998), white US Americans during the early national period were, on the one hand, concerned with distinguishing themselves from white Europeans, and “on the other hand, anxious lest these distinctions should become too great” (1). As Gardner notes:
The question that resonates throughout the early national period is: What are Americans going to be? Scarcely hidden behind is the fear that in this undiscovered country and under this untested political system, white Americans will be either collapsed back into Europeans or else transformed into something as completely ‘different’ as blacks or Indians (1).

That white bodies would be engaging in “untested” political, social, and climatic experiments only exacerbated the feelings of difference colonial British Americans were already facing. British Americans always faced a taxonomic problem. In *The Island Race: Englishness, Empire, and Gender in the Eighteenth Century*, Kathleen Wilson describes the “island myth,” which originates in the early modern period and carries into the eighteenth and nineteenth centuries (5). “English people,” Wilson contends, “were most eager to stress the ways in which their nation was unique, culturally as well as topographically” (5). For the British imagination, the island trope thus served “not just as a metaphor” but also as “an explanation for English dominance in arts and arms” (5). Inhabitants of the “island” were thus imagined as having some unique essence to them, what Wilson terms the “race of nation” (6). Wilson, however, notes the inherent paradoxical nature of an insular island. “As Caribbeanists have stressed for some time,” Wilson notes, “islands can be said to exist only in relation to other things, such as seas, continents and other islands, and so they are not ‘insular’ but vibrant entrepots in oceanic networks linking people, goods, and cultures” (5). Briton’s increasing colonial endeavors thus made imagining the island as insular and static far less realistic.

As a result, at the very same time Britishness is imagined as a fixed stable entity, competing notions of race and nation existed which pointed instead to the “unstable nature of national identities” (Wilson 4). As Wilson articulates it, the “explanation of
national and human difference” was “conceptualized and understood in a variety of competing and not always compatible ways” (7). For instance, Wilson notes how well-established notions about the inheritance of “‘national complexion’” led the New England colonists to claim that their complexion was unchanged from that of their English forbearers (12). Even as British colonists emigrated from the British isle—the center of authentic Britishness—Benjamin Franklin emphasized the immutability of Englishness in the following:

Great numbers of our own people are of the BRITISH RACE...Our Neighbours of New-England afford the World a Convincing Proof that BRITONS, tho’ a Hundred Years transplanted, and to the remotest part of the Earth, may yet retain, even to the third or fourth Descent, that Zeal for the ‘Public Good,’ that ‘military Prowess,’ and that ‘undaunted Spirit,’ have we likewise of ‘those brave People,’ whose Fathers in the last Age made so glorious a stand for our Religion and Liberties (Wilson 12).

Franklin’s assertions of an essential Britishness that remains constant in this new colonial setting, however, directly contradict with eighteenth century climate theories about race and nation. In The Complexion of Race: Categories of Difference in Eighteenth-Century British Culture, Roxann Wheeler cites Buffon’s “enormously influential” Natural History: General and Particular (1749) in which he muses on what Wheeler calls “the largely artificial differences distinguishing black Africans from Europeans” (5). “In a succession of generations,” Buffon asserts, “a white people transported from the north to the Equator, would undergo this change, especially if they adopted the manners, and used the food of the new country” (5). Wheeler similarly notes that during the eighteenth century “it was commonly reckoned that it would take at least ten generations for Englishmen in the torrid zones to turn into Negroes or for Negroes in England to turn into
northern Europeans” (4). “Climate and humoral theory,” Wheeler asserts, “provided the most important rubric for thinking about human differences in the eighteenth century, in regard to both complexion and civil society” (22). According to climate theory, the “natural differences” between peoples arose from “geographic variation, climatic conditions, and people’s related cultural habits,” the most influential of which were “exposure to the sun, the absence of winds, elevation of land above sea level, proximity to large bodies of water, fertility of the soil, and diet of the inhabitants” (22). Thus, according to this conceptual framework, skin color and nationhood were inevitably linked. Those who lived in a given nation, exposed to the same air, climate, vegetation, and seasons would physically look the same and have similar personal characteristics. Hence, if one were to physically uproot oneself from one’s nation, one’s physicality and personality would inevitably be altered as well because race and nation were inextricably linked.

In Wieland; or the Transformation (1798), Charles Brockden Brown performs a novelistic experiment to see what happens to the European body when it is uprooted and planted in American soil. In this novelistic experiment, the first character to transplant himself onto American soil spontaneously combusts. “The preclusive gleam, the blow upon his arm, the fatal spark, the explosion heard so far, the fiery cloud that environed him without determent to the structure, though composed of combustible materials, the sudden vanishing of this cloud at my uncle's approach” (19). So, Clara, the narrator of Charles Brockden Brown’s American Gothic novel, describes her father's mysterious death. Instigated by a simple blow to the arm with a heavy club that produces a "very
bright spark," the elder Wieland is found naked with scorches and bruises over most of his skin and his clothes completely reduced to ashes (19). And yet, Clara, the narrator, emphasizes the "purity and cloudlessness of the atmosphere, which rendered it impossible that lightning was the cause" (20). So, according to the logic of the novel, Wieland's father, a German émigré, quite literally, implodes on American soil. Wieland’s descendents do not fair much better. His first-born son and first generation American goes mad and murders his entire family. In Brown’s experimental environment, the American climate destroys European transplants and their first generation descendants.

While Brown incorporates the European natural sciences in his novel, to say that he completely submits to stereotypes about the American climate would be inaccurate. A novel strewn with ambiguities and conflicting information, Wieland offers contradictory notions of degeneracy. Even as Brown reiterates stereotypes, he also plays with and inverts existing models of degeneracy in the natural sciences, as is seen with his depiction of European degeneracy. Pleyel, Clara’s cousin, tries to convince Wieland to return to Germany. After a visit to Europe, Pleyel learns that the Wielands descend from the “noble Saxons” and posess lands in Lustatia. The Prussian Wars wipe out all the closest male heirs, which makes Wieland next in line. Pleyel urges Wieland to move to Germany and claim his land, but Wieland feels “that no spot on the globe enjoyed equal security and liberty to that which he present inhabited” and that “the horrors of war would always impend over them, till Germany were seized and divided by the Austrian and Prussian tyrants” (Brown 43). Aside from the safety Wieland feels in America—itself a counterpoint to European depictions of the dangerous American wilderness—Europe
itself is also depicted as a place of exorbitant wealth that degenerates its inhabitants.

Clara equates European wealth with degeneracy and tyranny in the following lines:

But setting these considerations aside, was it laudable to grasp at wealth and power even when they were within our reach? Were not these two great sources of depravity? What security had he, that in this change of place and condition, he should not degenerate into a tyrant and voluptuary. Power and riches were chiefly to be dreaded on account of their tendency to deprave the possessor. He held them in abhorrence, not only as instruments of misery to others, but to him on whom they were conferred. Besides, riches were comparative, and was he not rich already? He lived at present in the bosom of security and luxury. All the instruments of pleasure, on which his reason or imagination set any value, were within reach. But these he must forego, for the sake of advantages which, whatever were their value, were as yet uncertain. In pursuit of an imaginary addition to his wealth, he must reduce himself to poverty, he must exchange present certainties for what was distant and contingent; for uncertainty? […] For the ambiguous advantages which overgrown wealth and flagitious tyranny have to bestow? (Brown 43-44).

Here, Brown turns the natural sciences over its head. America is the place of stability, liberty, and checked wealth; Europe is the site of degeneracy. But unlike the natural sciences, which primarily blame the United States for its climate (although, the degeneracy of its political system is also mentioned), Brown focuses on how a system of tyranny and overgrown wealth degenerates its inhabitants.

While European tyrannical government could be viewed as the cause of degeneration, the electric spark of republican revolution posed its own sets of problems. In fact, Dr. Benjamin Rush, the famed early American physician, finds the post-revolutionary Americans so clinically unhinged that he develops a new medical condition, what he calls “Anarchia,” to describe this phenomenon. Rush explains his new term with the following:

The termination of the war by the peace in 1783, did not terminate the American Revolution. The minds of the citizens of the United States were wholly
unprepared for their new situation. The excess of the passion for liberty, inflamed by the successful issue of the war, produced in many people, opinions and conduct which could not be removed by reason or restrained government. The extensive influence which these opinions had upon the understandings, passions, and morals of the citizens of the United States constituted a species of insanity, which I shall take the liberty of distinguishing by the name Anarchia (qtd. from Davidson 216).

Here, the excess of a patriotic spirit has produced unhinged Americans. As Cathy Davidson observes in Revolution and the Word (1986), “Dr. Rush described the prevalence of “anarchia” as a kind of collective “insanity” and traced out the etiology of that social disease. In his view, an ‘ardor in trade and speculation’ along with the new government’s issuing of a ‘fallacious…amount of paper money,’ had ‘unhinged the judgment, deposed the moral faculty, and filled the imagination, in many people with airy and impracticable schemes of wealth’” (217). According to Davidson’s reading, Rush locates American insanity in commodity capitalism (217). Interestingly, however, in the passage from Wieland, degeneration in Europe via the excess of European wealth is the cause of degeneration. Although Brown complicates the European myth of America as a space of degeneracy, we must deal with the character of Carwin, who quite possibly would be diagnosed as an anarchist in Rush’s original definition. Given the language of Rush’s analysis, anarchia appears to be a disease of the United States. Carwin is prone to questionable politics and dangerous tricks, and only later do we find out that he is a native of the United States. When Clara first meets Carwin, he does not mention his American origins. He informs Clara that he traveled in Spain for three years and “a short conversation ensued, which proved the stranger to be English” (77). After this
encounter, Clara notes that, “his garb, aspect, and deportment were wholly Spanish” and that “a residence of three years in the country, indefatigable attention to the language, and a studious conformity with the customs of the people, had made him indistinguishable from a native, when he chose to assume that character” (77). As Clara notes:

He had embraced the catholic religion, and adopted a Spanish name instead of his own, which was CARWIN, and devoted himself to the literature and religion of his new country. He pursued no profession, but subsisted on remittances from England. While Pleyel remained in Valencia, Carwin betrayed no aversion to intercourse, and the former found no small attractions in the society of this new acquaintance. On general topics he was highly intelligent and communicative. He had visited every corner of Spain, and could furnish the most accurate details respecting its ancient and present state. On topics of religion and of his own history, previous to his transformation into a Spaniard, he was invariably silent. You could merely gather from his discourse that he was English, and that he was well acquainted with the neighboring countries (77-78).

But Clara’s observations on Carwin contradict. On the one hand, Carwin performs being the Spaniard, able to make him “indistinguishable from a native, when he chose to assume the character” (77). On the other, she claims his transformation is complete and does not speak about his previous life before his transformation. Despite Carwin’s supposed transformation, his identity is also ambiguous, always slipping from the reader’s reach.

And then at the end of the novel, Carwin’s past is finally revealed; he is actually an American. Clara is convinced that Carwin has commanded Wieland to murder his family, until Carwin finally explains his origins and his indirect involvement with the murders, albeit unintentionally. “You are not apprized of the existence of a power which I possess,” Carwin explains, “I know not by what name to call it*” (226). “It enables me to mimic exactly the voice of another,” Carwin continues, “and to modify the sound so that
it shall appear to come from what quarter and be uttered at what distance I please” (226).

Carwin’s ability to modify sound calls attention to the problem of sound and atmosphere in early American culture.

Sound, Air, and Early-American Ventriloquism

What is sound really? Like electricity, it is invisible and moves through the air, but its effects are undeniable. Carwin can manipulate sound—this invisible force—and the end result is chaos. But Carwin’s ability to play with sound is something far more powerful than a mere trick of the tongue and throat. Clara describes the physical effects of Carwin’s voice on her body with the following:

I cannot pretend to communicate the impression that was made upon me by these accents, or to depict the degree in which force and sweetness were blended in them. They were articulated with a distinctness that was unexampled in my experience. But this was not all. The voice was not only mellifluent and clear, but the emphasis was so just, and the modulation so impassioned, that it seemed as if an heart of stone could not fail of being moved by it. It imparted to me an emotion altogether involuntary and incontrollable. When he uttered the words “for charity’s sweet sake,” I dropped the cloth and I held my hand, my heart overflowed with sympathy, and my eyes with unbidden tears (59).

Some things move directly through the air—magnetism, appeal, immediate body reactions. These represent that excess of language that cannot be quantified in language but have demonstrable physical effects. Carwin’s powers are more than a mere ability to use words well. It is his ability to manipulate sound itself—that invisible moving force that penetrates the ear—which creates those peculiar, sympathetic effects on his listeners.

The idea that air might be dangerous, that it could contain invisible forces that could kill, was very much a concern of the eighteenth-century sciences. Joseph De Witt in *A Chemico-Medical Essay to Explain the Operation of Oxigene or the*
base of vital air on the Human Body (1797) notes the history of air in the sciences and how its perception has evolved over time:

The knowledge of its [air] being essential to the preservation of animal life must have been coeval with mankind; it was from the beginning, as it is now “the breath of life.” But in what manner this was affected has long remained an impenetrable mystery. It was left for modern chemists to solve this difficult problem. By decompounding the air which we breath, and by shewing the properties of its constituent parts they have enabled us to view some of the important functions of the animal system, in a very different light from what our ancestors were accustomed to do.

The beautiful experiments of Lavoiser prove that atmospheric air is composed principally of two elastic fluids. He procured them in a separate state, and found that in the one, an animal died in a few seconds; in the other it became remarkably lively. A taper plunged into the one was immediately extinguished; in the other it burnt with dazzling splendor. In short, the one incapable of supporting animal life and combustion; the other possessing that property in a high degree. The first was called Azotic (or more properly Nitorgene) gas; the other Oxigene gas, or vita air (7-8).

With the discoveries of Lavoiser, air was no longer viewed simply as “the breath of life” (7). Instead, air became more complicated. With a noxious component and a vital component, air was both necessary and dangerous for life. More generally, forces could travel through air, like magnetic forces and sounds that could facilitate dangerous attractions.

As sound became increasingly important in the eighteenth-century, it too became the study of the sciences. In the Brown’s novel, Wieland; or the Transformation (1798), Carwin tells Clara that he has this ability to manipulate sound, although “I know not by what name to call it,” but Charles Brockden Brown of course knows very well (226). Brown includes a lengthy footnote to explain in full detail what Carwin cannot. “Biloquism, or ventrilocation,” the footnote explains in order to provide a name for those
abilities Carwin knows not by what name to call them, in which “sound is varied according to the variations of direction and distance” (226) The footnote continues with a scientific treatment of this ability:

The art of the ventriloquist, consists in modifying his voice according to all these variations, without changing his place. See the work of the Abbe de la Chappelle, in which are accurately recorded the performances of one of these artists, and some ingenious, though unsatisfactory speculations are given on the means by which the effects are produced. This power is, perhaps, given by nature, but is doubtless improvable, if not acquirable, by art. It may, possibly consist in an unusual flexibility or exertion of the bottom of the tongue and the uvula. That speech is producible by these alone must be granted, since anatomists mention two instances of persons speaking without a tongue. In one case, the organ was originally wanting, but its place was supplied by a small tubercle, and the uvula was perfect. In the other, the tongue was destroyed by disease, but probably a small part of it remained.

This power is difficult to explain, but the fact is undeniable. Experience shews that the human voice can imitate the voice of all men and all inferior animals. The sound of musical instruments, and even noises from the contact of inanimate substances, have been accurately imitated. The mimicry if animals is notorious; and Dr. Burney (Musical Travels) mentions one who imitates a flute and violin, so as to deceive even his ears (Brown 226).

Like his footnote on spontaneous combustion, Brown once again cites European scientists and informs the reader where to look to find more information on the subject. Similar to his annotations of Volney’s work, Brown, even here, manages to insert his voice into this largely factual footnote. Brown, an early American author, feels free to enumerate the shortcomings of the Abbe de la Chappelle’s work on biloquism, which Brown describes as “ingenious, though unsatisfactory” as far as the speculations are concerned. As a participant in the culture of men of letters and of observation, Brown’s foray into the scientific world, even as he writes a so-called work of literature, should not be read as strange.
After Brown’s extensive interlude on ventriloquism, Carwin continues to reveal his past and powers to Clara. Carwin continues to expand on this power of his. Carwin alluded to much of what Brown includes in the footnote: “I know not that everyone possesses this power,” Carwin explains, however, he believes it “is an art which may be taught to all” (Brown 226). “Would to God I had died unknowing the secret! It has produced nothing but degradation and calamity,” Carwin exclaims (Brown 226). After revealing his “powers,” Carwin reveals his place of birth. “I left America, which is my native soil, in my youth,” Carwin explains (Brown 227). Although Carwin’s powers are played down as more of an art and less of an inborn ability, the description of Carwin’s discovery and mastery of his powers in Brown’s *Memoirs of Carwin the Biloquist*, seems to play on the American climate, thereby, making it a kind of American mutation.

Before I delve into *Memoirs of Carwin* and Carwin’s moment of discovery of his “powers,” I must explain the eccentricities of this document. Not published with *Wieland*, *Memoirs of Carwin, the Biloquist*, Bill Christopherson notes, is one of Charles Brockden Brown’s “minor fictions” (22). This “fragment” is the last piece of fiction Brown publishes, which he uses as “filler for the *The Literary Review*, where it ran from November 1803 to May 1804, then in three further installments—July 1804 and February and March 1805” (22). Its first sequences, however, Christopherson observes, were completed just before the publication of *Wieland*, as evidenced by a letter Brown writes to William Dunlap on September 5, 1798 (22). “Fred Lewis Patee,” Christopherson observes, “reasonably suggests that Brown originally intended these sequences to form a part of *Wieland*—Carwin’s portion of the story—but the narrative ranged too far a field,
and was therefore detached and developed separately” (22). Although Carwin, The Biloquist is published years after Wieland, I read the two together with the strong belief that the one greatly enriches the other.

In Memoirs, Carwin’s past is more fully explicated. Carwin is born the second son of a Pennsylvanian farmer. His eldest brother “seemed fitted by nature” for this employment, but Carwin is different (Brown 281). His brother’s “wishes never led him astray from the hay-stack and the furrow, or suggested the possibility that to-morrow could differ from today” and the limits of his education consisted of being able to sign his name and spell out a chapter in the bible (281). Carwin, on the other hand, is characterized by a thirst for knowledge. “My senses,” Carwin recalls, “were perpetually alive to novelty, my fancy teemed with visions of the future, and my attention fastened upon every thing mysterious or unknown” (281). Disconcerted that Carwin would surpass his elder brother in knowledge, Carwin’s father does his best to keep his search for knowledge checked by whipping him and burning his books.

Carwin endures this abuse until he is fourteen years old and discovers his powers. While on a search for some cows that had run away from the farm, Carwin finds himself in a cave. While in the cave, with “the in the shrill tones of a Mohock savage,” he calls for the cow (285). Significantly, Carwin’s powers of sound manipulation allow him to “go savage.” His voice allows him to divorce himself from his white body and assume whatever race he wishes. After finishing this shouting, Carwin hears a voice utter “the same cry from the point of a rock some hundred feet behind [him]; the same words, with equal distinctness and deliberation, and in the same tone, appeared to be spoken” (285).
The voice echoes five more times from different spots in the cave. “A little reflection was sufficient to shew that this was no more than an echo of an extraordinary kind,” Carwin observes, “My terrors quickly supplanted by delight [...] I amused myself for an hour, talking to these cliffs: I placed myself in new positions, and exhausted my lungs and my invention in new clamours” (286). And so the American villain discovers his powers of evil.

Carwin goes on to describe in detail how he comes to develop his talents. He attempts to make his voice travel distances, trying what he calls “the second experiment,” but finds that he is unable to replicate what happened in the cave (287). Like Benjamin Franklin who makes the American landscape his own personal laboratory, Carwin makes use of the American caves to “test” his powers. “You will not wonder,” Carwin addresses the reader, “that I exerted myself with indefatigable zeal to regain what once, though for so short a space, been in my power (287). “By perpetual exertion I gained it a second time,” Carwin relates, “and now was a diligent observer of the circumstances attending it’ (287). “What was at first difficult,” Carwin concludes, “by exercise and habit, was rendered easy. I learned to accommodate my voice to all the varieties of distance and directions” (287). Like Brown’s footnote in Wieland, Carwin stresses that these powers are a learned ability. Carwin notes that speech is not solely tied to the tongue. He cites examples of men who could still speak despite “wanting a tounge” and to them “teeth and palate were superfluous” (288). Carwin situates the power of speech in muscular motion. “The tribe of motions requisite to [generating speech],” Carwin observes, “are wholly latent and unknown, to those who possess that organ [a tongue]” (288). Anyone, then, in
theory, according to Carwin could develop his abilities with practice. “I have no reason to suppose a peculiar conformation or activity in my own organs,” he notes, “or that the power which I possess may not, with suitable directions and by steady efforts, be obtained by others, but I will do nothing to facilitate the acquisition” (288). Carwin believes his powers can be learned, and yet he refuses to reveal the secrets to his readers, lest they should attempt to develop this dangerous ability as well.

Despite all of this, Carwin eventually concedes that a certain trait of his, coupled with this ability, makes him a rare case “There remained but one thing to render this instrument as powerful in my hands as it was capable of being,” Carwin admits, “From my childhood, I was remarkably skillful at imitation (288). “There were few voices whether of men or birds or beasts which I could not imitate with success,” Carwin continues. “To add to my ancient, to my newly acquired skill, to talk from a distance, and at the same time, in the accents of another,” Carwin reveals, “was the object of my endeavors and this object after a certain number of trials, I finally obtained” (288). Carwin’s especial powers are not simply that he can project his voice at a distance, but that he can modulate his voice so it can sound like any man or beast. The power of imitation, unlike the ability to project one’s voice, an inborn trait, and perhaps even the result of the American environment produces mad freaks and combusting emigrants, like the Wieland line. Carwin, after all, discovers his powers in an American cave and attempts to use them during a lightning storm. There is an undeniable correlation between his surrounding environment and his unusual talents.
Although Carwin is sure to emphasize that biloquism is the “everyman” talent, the description of his first use of this talent is so tied with Gothicized descriptions of the American landscape and its heightened electricity, that one cannot help but think these powers are somehow tied to this peculiar American climate. In Wieland, after all, Theodore Wieland, a first generation American, descends into madness; now Carwin harnesses his powers amidst an electric storm. Are all “native” Americans destined to madness or evil superpowers? In this coming of age story of the novel’s superhero villain, Carwin first tests out his superpowers on his father. Carwin’s widowed aunt in Philadelphia had offered to help care for Frank, Carwin’s actual name, and pay for her nephew’s education. His father had refused these offers, and now Carwin decides to intervene. Aware that his father “was a confident believer in supernatural tokens,” Carwin plans to trick his father. He intends to mimic the voice of his father’s dead wife, who will order him to send Carwin to his aunt. Carwin selects “a blustering and inclement night,” in which “the elemental music was remarkably sonorous, and mingled not unfrequently with thunder heard remote” (291). Carwin enters his father’s bedroom and the darkness makes it difficult for him to find his way. His arms are outstretched as he feels for his father’s bed, and “at this moment,” Carwin recalls, “lightning flashed into the room: the brightness of the gleam was dazzling, yet it afforded me an exact knowledge of my situation” (290). Carwin realizes he is inches from his father’s face and that one more step and his hands would have touched his cheek. Just as he is ready to abort his plan, Carwin sees a light through the window. He realizes that the barn located near the house has erupted in flames as a result of being struck by lightning. Carwin
takes this as an ominous sign and aborts his plans. Soon after, Carwin gets what he desires without having to use his powers. Carwin is sent to live with his aunt so he can pursue his studies.

In constructing this experimental novel about what the American climate might do to white American bodies, Brown is not afraid to play into some time-honored stereotypes of the dangerous American climate. Brown’s erupting barn is not an isolated example; in fact, erupting barns, churches, and buildings are written about throughout early American print culture and play a part in constructing the myth of an electrified American climate. In the 1750s, Ebenezer Kinnersely, the leading American electrical demonstrator, used “thunder houses” in his lectures on electricity (Delbourgo 72). The “thunder house,” James Delbourgo explains in *A Most Amazing Scene of Wonders: Electricity and Enlightenment in Early America* (2006), was often a small model house or church used to demonstrate the effectiveness of the lightning rod. Benjamin Franklin invents the lightning rod to protect American houses from this heightened electrical climate. The use of these physical models, Delbourgo asserts, “could convince audiences that conductors would secure real buildings from the full force of lightning” (73). Thus, in pushing for use of lightning rods in American homes, unlike Brown’s footnote on the electrical myth in Volney’s *View of the Climate*, Franklin and Kinnersly work with stereotypes of the American landscape to illustrate how Americans could overcome it. In *Memoirs of Carwin*, Brown plays into the stereotype of an electrified American climate, complete with a full-scale thunder house, without providing the kind of patriotic empowerment Franklin and Kinnersly offer through the lightning rod. Especially
noteworthy is that this very moment in Brown’s novel is precisely what he criticizes Volney for—sensationalizing the American landscape for deaths via lightning.

Carwin: An Anarchic American?

By the end of Memoirs, any reader with any knowledge of Benjamin Rush’s category of Anarchia would have Carwin diagnosed with this condition. Carwin is taken under the wing of Ludloe, an Irish transplant. Under Ludloe’s care, Carwin is finally given free reign to read as much as he would like. Carwin recounts Ludloe’s unusual philosophies:

He taught me to ascribe the evils that infest society to the errors of opinion. The absurd and unequal distribution of power and property gave birth to poverty and riches, and these were the sources of luxury and crimes. These positions were readily admitted; but the remedy for these ills, the means of rectifying these errors were not easily discovered. We have been inclined to impute them to inherent defects in the moral constitution of men: that oppression and tyranny grow up by a sort of natural necessity, and that they will perish only when the human species is extinct. Ludloe laboured to prove that this was, by no means, the case: that man is the creature of circumstances: that he is capable of endless improvement: that his progress has been stopped by the artificial impediment of government: that by the removal of this, the fondest dreams of imagination will be realized (Brown 315, 316).

According to Ludloe, and by extension Carwin, government degenerates mankind. Endless improvement and progress is stymied by the unequal power dynamic between the rich and the poor. Remove this unequal distribution and the problem of degeneration is fixed. Thus, Ludloe’s racial science is more of a political science, similar to Wieland’s idea about degeneracy and tyranny. Before Carwin had even met Ludloe he had high aspirations. “I was actuated by ambition,” Carwin recalls, “I was delighted to possess superior power” (295). Carwin cultivates these powers of sound when he moves in with his aunt. The issue with Carwin is really very much an issue of class. He is the son of a
farmer who tries going beyond his station. In the new republic—the American experiment—Carwin can try to go beyond his class and that is precisely the danger of the political experiment. Carwin believes in this imagined mobility of class and race, which makes him the villain of the novel. Carwin is a shapeshifter. His voice allows him to separate himself from his white body, and in doing so he can become savage or Irish or Spanish. We can never really place what race or class Carwin is, and that is the horror of Carwin.

Given Carwin’s interest in the American experiment, it is not surprising that he is captivated by Ludloe’s ideas about political experimentation. Carwin elaborates on his view of government and social experiments in the following lines:

Let a few, sufficiently enlightened and disinterested, take up their abode in some unvisited region. Let their social scheme be founded in equity, and how small soever their original number may be, their growth into a nation is inevitable. [….] Exempt from servile obligations and perverse habits, endowed with property, wisdom, and health, hundreds will expand, with inconceivable rapidity into thousands and thousands, into millions; and a new race, tutored in truth, may, in a few centuries overflow the habitable world (317).

Carwin here talks about the possibility of creating a nation over time, whose origins begin with a group of like-minded individuals who are willing to overhaul government as they know it. Over time, this small group would grow until a “new race” is formed (317). Although Carwin’s natural science lacks distinctions between nations and races, and is more concerned with politics, the fact that Carwin, an American, thinks such things exposes Carwin for the American disease of Anarchia. To further complicate, Carwin is exposed to these ideas from Ludloe, an Irishman. It is both an American disease and plays into American stereotypes, but clearly it is also a disease of Europe—it is the
disease of enlightenment thought, which is increasingly heightened in the electrified American climate where American bodies seem more susceptible to these political sparkings.

Novel as Experiment

Brown’s 1798 publication of *Wieland* is clearly experimental in nature and he is trying to come to terms with what it means to be an American, but by 1805, when Brown publishes his translator’s preface to Volney’s naturalist work, Brown’s stance seems to be more clear. After calling Volney out for his biases against the American climate, Brown comes to the following conclusion:

Instead of reproaching him for the mistakes committed, we should grant him liberal applause for the truths he has attained. But, while we pardon his errors, and deem them amply atoned for by his merits, it is a duty to which we owe the enlightened world, to our country, and even to the writer himself to point out his mistakes (xxiii)

The key to this passage is those following lines: “while *we* pardon his errors, […] it is a duty *we* owe to the enlightened world, to our country, and even to the writer himself to point out his mistakes.” I argue that the Brown’s decision to shift into the collective *we* situates his translation of an individual naturalist text into a much larger scope. In doing so, he makes it the duty of American authors and naturalists to correct the errors and misconceptions of European naturalists. Ironically enough, even as Brown notes this, his *Memoirs* is published over the course of 1803 to 1805, and Brown’s treatment of the American landscape in his novels with erupting barns and mad Americans, is just as sensationalized as Volney’s. One might come to following conclusion: as a form of experiment, the novel provides a space where seemingly solved cases cannot help but
demand further attention. Brown may claim in his preface to Volney that American authors need to correct European authors for their errors, but Brown’s own writings play with and against these very stereotypes, which indicate that even Brown is not as sure as he might like to make it seem. Yet as an American himself, Brown is in a position where he can experimentally come to terms with what it means to be an American in ways that seem more appropriate than European naturalists who make inaccurate generalizations about the American space. We would be far better off thinking of Brown’s works as novelistic experiments, in which the act of writing itself is the experiment and that final results may be different from preconceived hypotheses. Furthermore, as a work that hurtles into the future, the novel is always an unfinished experiment as twenty-first century readers and critics attempt to come to terms with it in their own time.

Political and scientific experiments are united in that their ends are unknown and mastery is always accompanied by failure. Charles Brockden Brown’s *Wieland; or the Transformation* (1798), the first to inaugurate the early American gothic novel, is filled with this sense of experimentation and the unknown on both the political and scientific level. Itself its own experimentation with the gothic genre in an American setting, the novel is rife with experimentation in form and genre, but also in scientific content. Carwin’s shape shifting powers of class and race threaten the new American experiment. Brown’s novel is then a novel of experiments. It is the space where scientific and political experiments intertwine and entangle with one another in new and unexpected ways.
CHAPTER 3

Electric Publics and Electric Nations: The Creation of a National Identity in Herman Melville’s *Pierre; or, the Ambiguities*

Herman Melville was aware that *Pierre* would be its own kind of experiment. The only novel not to incorporate his sea-faring experiences, Melville began *Pierre* with the intention of writing a Gothic romance that would please his wife and sell to the masses (Smith 103). While Melville was experimenting with a genre, the contents of his novel would be just as experimental. If novelistic experiments are defined by the writing process, with the written word collapsing both the final results and experimental process itself, then Herman Melville’s *Pierre; or, the Ambiguities* is an example of that very process, in which writing is both the process and resultant of experiment. In doing so, novelistic experiments mess with the scientific notion of time and experimentation. The novel is both process and product; the very space where fictional thought experiments are brought to bear. Melville’s bizarre incest romance then provides the space where competing ideas of race, nation, and gender can co-mingle in the bubbling laboratory of the novelistic space. The novel then provides the space where ideas, rather than chemicals, atoms, or molecules, can combine in new, and even “unnatural” ways, because unlike the natural experiment, the written word can engage in testing that exists outside natural law or logic. These sorts of novels may be called *novel experiments*. As a novel experiment, *Pierre* presents its very own speculative science to address the emerging racial and chemical sciences and their unexpected connections.
Pierre, Physiognomy, and the Chemical and Atmospheric Sciences

Recent scholarship on Pierre has focused on the telegraphic implications of Melville’s bizarre text. Paul Gilmore argues that Pierre shatters “techno-utopian” readings of the telegraph by playing with the gaps, or the “ambiguities” of the novel (89). As Gilmore explains:

Melville’s figurative language suggests that rather than simply erasing differences and fostering the complete identification of interests and tastes, the telegraph and its network of bodily, technological interconnection were struck at the core by dissonance. If the telegraph potentially linked all of humanity in one network or one body, that network did not, as both utopian and dystopian accounts suggested, eliminate all noise, all miscommunication, all competing interests and interpretations (89).

In emphasizing the “noise” or so-called telegraphic gaps of Pierre, Gilmore presents an interpretation of Melville’s novel that is very much invested in nineteenth-century reactions to technology and culture in literature. Sam Halliday, similarly, points to the telegraphic implications of Pierre with a reading of how the emergence of new technologies in the nineteenth century compete with the physiognomic sciences. Physiognomy, then, is an integral part of Pierre, where characters outer exteriors are continually described without any resolution of their actual interiors. As Halliday explains, the advent of communication technologies creates a new reality where individuals can interact with one another in the absence of each other’s bodies (83). Because individuals are faced with the need to ascertain truths about others who may be many miles apart, it is not surprising that such technologies would “suspend the operations of those physiognomic rules that govern the correspondence of persons and
representations in the realist text” (Halliday 83). But is Pierre only about the telegraph and the limitations of this new technology? I enter this existing critical discussion of physiognomy and the telegraph to offer another layer of complexity to a reading of Pierre. As much as Melville’s novel is steeped in the science and language of the physiognomic sciences, Pierre is also very much a novel of the chemical and atmospheric sciences. By including the language of a new molecular and atmospheric science alongside the language of the physiognomic sciences, Melville complicates notions of race and nation that are tied to eighteenth-century scientific thought on climatic theory. With bodies that are always jumping out of their encasements, either via the eye or through electrical emissions, the intersections between the physiognomic sciences, atmospheric sciences, and telegraphic technologies of the mid-nineteenth century all come to a head in creating imaginative, incomplete, ambiguous, and never solved hypotheses on race and nation. Melville offers a far more complicated notion of bodies that becomes not simply an issue of gaps and white noise that develop as telegraphic word divorces words from bodies, but more importantly the problem of the body in the creation of a national identity. In this respect, the chemical sciences offer useful mental maps for envisioning bodies that can maintain their interiority and even as their public selves dissolve into the atmosphere. Bodies can emanate into their surroundings while still retaining their fleshy skin barriers.

The Atmospheric Sciences

Eighteenth-century atmospheric theory makes air material. No longer simply fluid vapour that occupies the negative spaces, air is now broken down into atomistic parts and
imagined in terms of a heterogeneous chemical mixture. In his “Chemico-Medical Essay to Explain the Operation of Oxigene (1797),” Benjamin De Witt notes the “rapid advances in science” which enabled scientists to “analyze and divide asunder, the invisible atmosphere which envelopes us” (34). With this paradigm shift, the vacant and the vacuous—the so-called filler—is charged.

Johann Reinhold Forster, the eighteenth-century naturalist and world traveler, describes “our atmosphere” as a “mass of circumambient air” composed not only of “charged aqueous particles” which produce various changes of weather, but also “heterogeneous particles,” like “electric matter,” which disperse throughout the mass (118). These particles that float within the fluid matrix are so numerous that Forster concludes “we are not yet apprized of the quantity and variety of them” (118).

The atmospheric sciences quickly became tied in with theories of national difference. As noted earlier, Costantin Volney asserts in A View of the Climate of the United States of America (1805) that American air is more electrical. The appeal to electricity in discourses of nation and race building is not surprising given electricity’s ability to radiate from individual bodies into the invisible space of the air. Electrical emanations allow individual bodies to retain their individual essence while at the same time entering the “public sphere” of the air. When used as a political metaphor, electricity suggests transmissions and interconnections that bypass the skin barrier that separates one body from another. Nineteenth-century theories of atmosphere and electricity have a funny way of making bodies enter a kind of public space. The elusiveness of publics is stressed by Michael Warner, who astutely notes in Publics and Counterpublics (2002),
“Publics are queer creatures. You cannot point to them, count them or look them in the eye. You also cannot easily avoid them.” (7). Publics are indeed invisible, queer creatures that cannot be pointed at or quantified. Nineteenth-century sciences attempted to come to terms with this invisible entity, by understanding publics in terms of an aggregation of personal charges. With each individual emitting his/her own personal charge into the atmosphere, the air then acted as the public mingling ground for invisible bodily charges that can escape their “owners.”

Samuel Otter’s Melville’s Anatomies (1999) demonstrates just how bodies may blur the line between the public and private in Pierre. Otter notes the “analogies between facial and landscape features” (203). As Otter convincingly observes:

Lightning forks upward from Pierre’s brow. Pierre sees stars and clouds in Lucy’s eyes and the seasons in her face. Lucy’s eyes contain unparalleled scenic wonders […] Lucy’s eyes reflect the unique variety and magnificence of America. Lucy is a walking encyclopedia of landscape features—clouds, seasons, waves, seas, lakes, skies. In Melville’s picturesque twist on the sentimental effectio, or “fashioning” of a female figure, Lucy is an overstocked embodiment of individual, natural, and national characteristics. The land does not merely lie before Pierre; it rises up and embraces him in the form of an inordinate, geomorphic angel (203).

An inhabitant of the “electrical” American climate, Pierre’s brow, with its “lurid slanting light forks,” becomes significant (52). Similarly, Lucy’s eyes become a reflection of the American landscape and the atmospheric light mingle with her eyes. In these lines, Otter illustrates the eighteenth-century and nineteenth-century notions that bodies could reflect their surroundings—that bodies could somehow synch with their surroundings. But what of bodies that escape into their surroundings, when the body blurs the line between public/private lines? Pierre is rife with eyes that speak to one another, and eyes that even
escape their encasements. The effect Lucy’s eyes have on Pierre’s is just one example of the strange “eye-speak” that occurs throughout the novel:

More especially, the bright glance of Lucy was transporting to him. Now, reckless of his horses, with both arms holding Lucy in his embrace, like a Sicilian diver he dives deep down in the Adriatic of her eyes, and brings up some king’s-cup of joy. All the waves in Lucy’s eyes seemed waves of infinite glee to him. And as if, like veritable seas, they did indeed catch the reflected irradiations of that pellucid azure morning; in Lucy’s eyes, there seemed to shine all the blue glory of the general day, and all the sweet inscrutableness of the sky. And certainly, the blue eye of woman, like the sea is not uninfluenced by the atmosphere. Only in the open air of some divinest, summer day, will you see its ultramarine,—its fluid lapis lazuli. Then would Pierre burst forth in some screaming shout of joy; and the striped tigers of his chestnut eyes leaped in their lashed cages with a fierce delight (Melville 47).

Pierre is transfixed by Lucy’s eyes, whose “fluid lapis lazuli” of her iris is only brought out when the atmosphere is right. Most intriguingly, however, are Pierre’s eyes, whose “striped tigers of his chestnut eyes” leap “in their cages with fierce delight” at the sight of the blue of Lucy’s eye. Otter notes the importance of the eye that escapes their encasements in a useful analysis of this very passage:

When Pierre observes the atmospheric effects in Lucy’s eyes, he cannot contain himself—or, to be more precise, he cannot contain their pupils: “Then would Pierre burst forth in some screaming shout of joy; and the striped tigers of his chestnut eyes leaped their lashed cages of fierce delight. Lucy shrank from his extreme love; for the extremest top of love is Fear and Wonder” […] The love in Pierre’s eyes is given a savage shape and appetite. Melville represents the blinding fulfillment of the picturesque goal of feeling through the eyes, as Pierre’s eager pupils threaten to rupture the acqueous humor, tear through the lashes, break out of their ocular confinement, and pounce upon their victim. The extremes are taken to their extremity, as Melville maps the contours of the sublime and ambivalent peaks of love (Otter 203, 204).

Pierre’s love is a violent, visceral one. The irises of his chestnut eyes leap forth as they try to escape the boundaries of his body.
Pierre abounds with more instances of bodies that extend into their environments, particularly via their own electrical atmospheres. Isabel’s radiating electricity placed alongside her ambiguous national/racial origins make her an interesting study. Unlike Pierre’s knowable lineage, Isabel’s can never be verified. He is raised in the countryside of Saddle Meadows as the descendent of “the proudest patriotic and family association of the historic line of Glendinnings” (4). Isabel, in contrast, claims to be the illegitimate child of Pierre’s father, but her nationality and origins are even a mystery to her. Aware that this woman is his alleged sister, Pierre develops a kind of obsession over the “dark, olive” face he sees at a party (63). After this encounter, Pierre is fixated with Isabel’s countenance with “a wild, bewildering, and incomprehensible curiosity […] to know something definite of that face” (63). Intriguingly, the novel describes how Pierre would attempt to overcome his obsession: “’I will no more of this infatuation,’ he would cry; but forth from the regions of irradiated air, the divine beauty and imploring sufferings of the face stole into his view” (66). Instead of describing the obsessive image as a mere figment of Pierre’s imagination, the novel tellingly describes it as a vision that appears out of magnetized air. The American landscape, which is often associated with a heightened electrical composition, is invoked in this moment of obsession. Pierre is then both an individual with a particular life history, as well as a representative of a large American race/nation. The obsessive image he sees is not simply related to his own body and mind, but its reoccurring appearance in the magnetized American air add that layer of the public to a very private, and personal experience with insanity. In this way, insanity, as we have seen in chapter one with Carwin, becomes something peculiarly American, as
if the American climate, with its heightened electrical composition, creates an unstable and dangerous new race.

And while Pierre’s visions are associated with a magnetized, American air, Isabel herself is similarly viewed as an electrical figure. Pierre’s obsession with Isabel’s face is the result of his preoccupation with her electrical emanations rather than her body itself, as explained in the following lines: “But his profound curiosity and interest in the matter—strange as it may seem—did not so much appear to be embodied in the mournful person of the olive girl, as by some radiations from her, embodied in the vague conceits which agitated his own soul” (70). Isabel’s powers of entrancement are not located in the flesh, but rather in that invisible, electric atmosphere that radiates off her. Isabel’s electrical surcharge is most apparent in her strange encounter with Pierre, when she relates to him her oddly ambiguous life history. “I never knew a mortal mother,” Isabel begins, “Pierre, the lips that do now speak to thee, never touched a woman’s breast; I seem not of woman born” (160). Isabel relates her earliest memories as follows: “My first dim life-thoughts cluster round an old, half-ruinous house in some region, for which I now have no chart to seek it out. If such a spot did ever really exist, that too seems to have been withdrawn from all the remainder of the earth” (160). Isabel continues to describe her earliest surroundings: “In summer the forest unceasingly hummed with unconjecturable voices of unknown birds and beasts. In winter its deep snows were traced like any paper map, with dotting night-tracks of four-footed creatures, that, even to the sun, were never visible, and never were seen by man at all” (161). With the lightning storm going on outside as she relates her untraceable origins, Isabel is the embodiment of
the American gothic, and, yet, ironically her ties to America and the Glendinning line are unclear and can never be fully proven.

Isabel continues the story of her earliest surroundings with the following:

No name; no scrawled or written thing; no book, was in the house; no one memorial speaking of its former occupants. It was dumb as death. No grave-stone, or mound, or any little hillock around the house, betrayed any past burials of man or child. And thus, with no trace then to me of its past history, thus it hath now entirely departed and perished from my slightest knowledge to where that house stood, or from what region it so stood. None other house like it I have ever seen. But once I saw the plates of the outside French chateaux which powerfully recalled its dim image to me, especially the two rows of small dormer windows projecting from the inverted hopper-roof. But that house was of wood, and these of stone. Still, sometimes I think that house was not in this country but somewhere in Europe; perhaps in France; but it is all bewildering to me…(162).

It is as if Isabel is placed in a house with no history, no past, which becomes particularly at odds with the importance placed on personal histories in the making of a larger national history. Unlike Pierre, who can trace his line and his house, complete with deeds of Saddle Meadows purchasing three Indian chiefs, Isabel’s past house is just as blank as her origins. She suspects this unknown house may have been in Europe, or France even based on the architecture of the house, but she is still never quite sure. Lacking any real language of her own, Isabel’s abilities of communication are located in the unspeakable—those invisible powers of electricity and magnetic presence.

Shut out from a national language and her own historical past, Isabel’s problem is very much a problem of blackness in the United States. Tellingly, Isabel is aligned with seemingly black figures. The only people Isabel sees in this nondescript space are an old man and woman. The old man’s face is described as “black with age”—an interesting choice of words given Isabel’s already ambiguous lineage, which now associates with her
with possibly black caretakers (162). Most important, however, is Isabel’s account of her problematic introduction to a national language. As she notes:

They seldom spoke to me; but would sometimes of dark, gusty nights, sit by the fire and stare at me, and then mumble to each other, and then stare at me, and then mumble to each other, and then stare at me again. They were not entirely unkind to me; but, I repeat, they seldom ever spoke to me. What words or language they used to each other, this it is impossible for me to recall. I have often wished to; for then I might at least have some additional idea whether the house was in this country or somewhere beyond the sea. (162).

With caretakers who mumble in an unknown language, Isabel’s adulthood will always be problematic. Whether these caretakers are her parents, whether they are black or white, and what nationality they are, are all left open and unknown. But most importantly, Isabel’s lack of a known language when national borders are becoming increasingly important will be a detriment to her. Without the ability to conclusively prove she is French, European, or American, she is left in a very difficult position where national and racial identity can never be proven in an era when nationality and race are becoming increasingly important markers of identity.

When Isabel moves from this house to another strange, and unknowable location, her language acquisition becomes even more warbled. She relates her relocation as follows:

…nothing more can I recall of the house in the wide open space; nothing of how at last I came to leave it. But some uncertain, tossing memory have I of being at last in another round, open space, but immensely larger than the first one, and with no encircling belt of woods. Yet often it seems to me that there were three tall, straight things like pine-trees somewhere there nigh to me at times; and that they fearfully shook and snapped as the old trees used to in the mountain storms. And the floors seemed sometimes to droop at the corners still more steeply than the old floors did; and changefully drooped too, so that I would even seem to feel them drooping under me (164).
Isabel’s description sounds very much like a ship, with floors that droop. Isabel even expresses this when she tells Pierre, “In thy own mind, thou must perceive, that most of these dim remembrances in me, hint vaguely of a ship at sea. But all is dim and vague to me” (165). Given that this does sound like a ship, Isabel’s first encounter with actual language acquisition in this space is incredibly important. At this time, she recalls having spoken in “two childish languages” (164). “There seemed people about me, some of whom talked one, and some the other;” Isabel recalls, “but I talked both; yet one not so readily as the other…” (165). With ships creating a transnational space that transports peoples of different nationalities from one region to another, Isabel’s first real exposure to language is muddled and thereby makes her a liminal figure. Furthermore, unlike Pierre’s upbringing with a stable language and stable climate, Isabel is raised on a ship, whose environmental surroundings are never stable. According to a climatic theory of race and nation—such as the one that makes the Glendinning line an American race-- Isabel’s identity is troublesome.

Isabel’s ambiguous racial and national origins are underscored in a scene that seems to evoke conventions of a slave narrative. In the last house she lives in, which seems to be in the United States, Isabel recalls having met a man that her caretakers called her father. Unsure of what father meant at that point, she felt the need to hold onto a handkerchief he had given her that had strange letters embroidered on it. After hearing of her father’s death, Isabel is determined to learn the strange language so that she might decipher the meaning of the handkerchief. As Isabel recalls:

Now resolved to learn my letters, and learn to read, in order that of myself I might learn the meaning of those faded characters. No other purpose but that only one,
did I have in learning then to read. I easily induced the woman to give me little teachings, and being uncommonly quick, and moreover, most eager to learn, I soon mastered the alphabet, and went on to spelling, and by and by to reading, at last to the complete deciphering of the talismanic word—Glendinning. I was yet very ignorant. Glendinning, thought I, what is that? It sounds something like gentleman;--Glen-din-ning;--just as many syllables as gentleman; and—G—it begins in the same letter; yes, it must mean my father. I will think of him by that word now;--I will not think of the gentleman, but of Glendinning. When at last I removed from that house and went to another, and still another, and as I still grew up and thought more to myself, that word was ever humming in my head, I saw it would only prove the key to more (206).

As an olive-skinned girl with unidentifiable origins, this example of self-education takes on a whole new layer of meaning. Isabel’s swiftness in teaching herself to read sounds very much like Frederick Douglass’s Narrative of the Life (1845), which inaugurates the familiar slave narrative trope, complete with a precocious enslaved child who teaches his or herself to read and write. In Douglass’s case, he tricks the poor young white children to teach him by exchanging bread for lessons (Douglass 44). Once again, Isabel is aligned with the slave because she does not have access to language and literacy. Like the slave, however, she manages to master the language that has not been given to her by her own. Isabel’s ability to quickly read this foreign language in order to decipher her past is yet another way Isabel is similar to the slave. Like the slave, Isabel lacks a history. A nation and a people have an identifiable past and history, and the problem with slavery is that that very past is disrupted and forgotten. The slave is expected to have no past. Similarly, the slave does not have an identifiable language. It is only when Isabel can read the Glendinning name on the handkerchief that it becomes clear to her who her father is. In this moment, Isabel’s problem of personal history is directly connected to her problem of language, which is very much the problem of the slave. I would like to emphasize that
although the novel plays on the possibility of Isabel’s blackness, I am not arguing that Isabel is most definitely black. Whether Isabel is actually black or not is really not the point at all. Instead, it is her ambiguous racial and national past that makes her acceptance into an American dynasty ultimately impossible.

Isabel does, however, manage to assume a kind of citizenship as her electrical radiations synch with the American landscape. When Isabel feels she is unable to relate her story, Isabel plays what we might call an early American electrical guitar to Pierre. “Now listen to the guitar and the guitar shall sing the sequel of my story,” she tells Pierre, “for not in words can it be spoken. So listen to the guitar” (177). The guitar produces peculiar music, which is described as “fire-flies […] buzzing in the sounds; summer-lightnings seemed vividly yet softly audible in the sounds” (178). An electrical guitar in the most literal sense, the instrument emits the sound of electricity in its most natural form, via fire-flies and summer-lightnings. Pierre notices how Isabel and the guitar seem to be merging with the thunderstorm outside:

To Pierre, the deep oaken recess of the double-casement, before which Isabel was kneeling, seemed now the immediate vestibule of some awful shrine, mystically revealed through the obscurely open window, which ever and anon was still softly illumined by the mild heat-lightnings and ground-lightnings that wove their wonderfulness without, in the unsearchable air of that ebonly warm and most noiseless summer night” (210).

Once again, Pierre notices Isabel’s electrical body: “To Pierre’s dilated senses Isabel seemed to swim in electric fluid; the vivid buckler of her brow seemed as a magnetic plate” (212). And it is this heightened electrical composition of Isabel’s that draws Pierre to her. Pierre’s strange attraction to Isabel, who claims to be his half-sister, is described at length:
Now first this night was Pierre made aware of what, in the superstitiousness of his rapt enthusiasm, he could not help believing was an extraordinary physical magnetism in Isabel. And—as it were derived from this marvelous quality imputed to her—he now first became vaguely sensible of a certain still more marvellous power in the girl over himself and his most interior thoughts and motions;—a power so hovering upon the confines of the invisible world, that it seemed more inclined that way than this;—a power which not only seemed irresistibly to draw him toward Isabel, but to draw him away from another quarter—wantonly as it were, and yet quite ignorantly and unintendingly; and besides, without respect apparently to anything ulterior, and yet again, only under cover of drawing him to her. For over all these things, and interfusing itself with the sparkling electricity in which she seemed to swim, was an ever-creeping and condensing haze of ambiguities. Often, in after-times with her, did he recall this first magnetic night, and would seem to see that she then bound him to her by an extraordinary atmospheric spell—both physical and spiritual—which henceforth it had become impossible for him to break, but whose full potency he never recognised till long after he had become habituated to its sway. This spell seemed one with that Pantheistic master-spell, which eternally locks in mystery and in muteness the universal subject world, and the physical electricalness of Isabel seemed reciprocal with the heat-lightnings and the ground-lightnings nigh to which it had first become revealed to Pierre. She seemed moulded from fire and air, and vivified at some Voltaic pile of August thunder-clouds heaped against the sunset (213).

In a reversal of the traditional mesmeric trance, with the male mesmerist entrancing the female subject, Isabel seems to have put Pierre in a sort of prolonged mesmeric trance. He is captivated by her during these interviews, but this “extraordinary atmospheric spell” of hers lingers even after he meets with her. Like a magnetic plate, Pierre is irresistibly bound to Isabel. It is the spell of a heightened electricity. Isabel’s “physical electricalness” is once again described as “reciprocal with the heat-lightning and the ground-lightnings” outside (213). As part of the ambiguities of this novel, Isabel’s special powers are still shrouded in mystery. Her heightened electricity is both a natural phenomena and an unexplainable aspect of the spiritual world. Isabel then represents both the scientific and the spiritual melded into one, as much of the nineteenth-century
atmospheric sciences evolved alongside, and sometimes with, spiritualist discourse. The science of the invisible is of course a natural outgrowth from spiritualist attempts to understand the invisible world.

Isabel’s heightened magnetism gives her a power over Pierre that would eventually prove fatal to them both. Pierre feels as though he has developed a kind of magnetic attachment to Isabel and in a way their bodies are starting to synch. Provoked by this, he runs off with Isabel under the cover that they have been married in order to protect her identity as his illegitimate sister. Despite Isabel’s ambiguous origins, her ability to synch with the electrical American atmosphere offers her a kind of national identity in the present moment that laughs in the face of American pedigrees. With a heightened electrical composition that synchs with the American atmosphere, Isabel is embraced by the American climate and in this way she achieves a kind of electrical citizenship.

Whitman’s *Leaves of Grass* (1855) also points to a similar kind of electrical citizenship which emphasizes the importance of air, electricity, and the synching of bodies in imagining a new kind of citizen. In “Song of Myself,” the speaker of the poem begins with, “I celebrate myself/And what I assume you shall assume,/For every atom belonging to me as good belongs to you” (Whitman 29). Whitman’s idea of citizenship is founded in the idea of a collective biology that unites all organisms, whether black or white, male or female, in a democratic union. The Whitminian narrator explains his poetic process, which he claims to be a democratic one, as follows: “Mine is no callous shell./I have instant conductors all over me whether I pass or stop./They seize every
object and lead it harmlessly through me” (58). Whitman invokes the language of the spirit rapper, who can channel other spirit through his or her body as a result of a heightened electricity. The language of spirit rapping becomes even more pronounced when the speaker describes how underrepresented peoples move “through” him: “Through me many long dumb voices,/Voices of the interminable generations of slaves,/Voices of prostitutes and of deformed persons,/Voices of the diseased and despairing, and of thieves and dwarfs,” (53). In Whitman’s electric nation, bodies that have not been heard can synch with the represented body of the white male poet and in doing so they can achieve representation.

Bodies as Things vs. The Body Electric

When Pierre’s mother is informed that he has run off with Isabel, she exclaims, “My only own only son married to an unknown—thing!” (268). In these lines, Pierre’s mother expresses what is so horrific about Isabel. She is unknown and therefore nothing more than a thing. Although Isabel’s ambiguity is enough to insight squeamishness and unease, Isabel’s heightened electrical persona, I argue, allows her to carve out a space for herself, even if it be temporarily, in an aristocratic America that relies on known national and racial lineages. Unlike Whitman’s vision of an electric citizenship, which eliminates the distinction between bodies and as a result “things” no longer exist, Mrs. Glendinning’s idea of citizenship and nationhood is much more conservative.

Isabel’s character, however, exists alongside these more limited ideas of nationhood to offer the possibility of an electrical citizenship. In being able to synch with American air, Isabel disrupts typical national time that is invested in documents, proof of
ancestral ties, and national language acquisition. Instead, Isabel’s national time is invested in the present moment of molecular reactions, when her own electrical charge reacts with charge of the American atmosphere. This creates a sense of national time that is invested in the time of the ever-present chemical reaction rather than a national time of pedigrees and lineages. The novel even makes these connections between chemical reactions and the formation of national identities in the following lines: “In our [American] cities families rise and burst like bubbles in a vat. For indeed the democratic element operates as a subtile acid among us; forever producing new things by corroding the old…” (9). American families may rise and fall with the democratic element, but, the lines continue, “if in America the vast mass of families be as the blades of grass, yet some few there are that stand as the oak which, instead of decaying, annually puts forth new branches; whereby Time, instead of subtracting, is made to capitulate into multiple virtue” (10). Isabel, of course, disrupts this last oak, by coming forth and shedding light on the Glendinning line’s impurities. Isabel’s time is thus not of the oak and family tree, but of the ever-present chemical reaction.

Electric Nations and Pierre

Isabel does indeed disrupt notions of nationhood by offering the possibility of an electric citizenship, and in Pierre the city acts as another space where this electric citizenship is experimentally tested. In Pierre, the city is a bubbling laboratory with magnetic leaders creating subversive sub-cultures. It is that space where “families rise and burst like bubbles in a vat” (9). The city and its culture offers the possibility of a future America that is founded on the idea of an electric nation where individual bodies
with their own personal histories do not matter. Aware that he cannot shirk his duties to his sister, Pierre runs off with Isabel to the city under the guise that he has married her. The city offers a strange space where young intellectuals can squat in abandoned spaces and pasts become irrelevant. But the city is dangerous with ideas.

Pierre becomes a member of the intellectual scene and begins a career as a writer. Plotinus Plinlimmon is the leader of the group and is described as man with “a certain floating atmosphere” that seemed to “invest and go along with the man” (403). Despite his mysterious origins, he becomes “the Grand Master of a certain mystic Society among the Apostles” (405). Like Isabel, his past cannot be discerned: “Whence he came, no one could tell. His surname was Welsh, but he was a Tennessean by birth. He seemed to have no family or blood ties of any sort” (405). And like Isabel, his unknown origins do not really seem to matter. His “floating atmosphere” and charisma make him the leader of this subversive group of intellectuals. Isabel is similarly able to captivate Pierre despite her unknown pedigree.

Pierre becomes part of the Apostles and begins working on a novel. “This book makes me mad,” he exclaims (429). The process of writing and thinking undoes Pierre. Synching with intellectuals, whose ideas are unfettered and dangerous, Pierre becomes part of an electric nation that is actually quite dangerous for him. The air in the city is dangerous with ideas. It is full of young, single men who think and write, but there is no hope for a reproductive America there. A nation that is made up of networks of intellectuals, whose ideas synch together, seems unable to survive. The message then is clear: in a nation that is still striving to overcome its revolutionary spirit, there is danger
in creating cults of people unified by ideas. Pierre’s unexpected and swift murder of his own cousin is a prime example of the danger of the city. In the experimental environment of the city, people act on their whims and go mad. What remains in the end is that ever-bubbling, fermenting Young America, with no heirs and no sign of a future. The invisible, subversive nation is to fear. But if Pierre had only stayed in the countryside, things may very well have been different; the city proved too unstable a testing ground for this alternative nation.

Despite the dismal end, let us not forget the importance of electric publics in the novel. Although her lineage can never be confirmed, the American atmosphere seems to embrace Isabel’s radiating body, thereby allowing her to achieve an electrical citizenship. The American atmosphere does not look to proof of papers or property; instead, it embraces the unknown bodies that inhabit it. Electric publics then allow bodies that could never obtain official citizenship, either because of racial, gender, or national reasons, to obtain a kind of American citizenship by being embraced by the national atmosphere. In these ways, bodies that do not matter are chemically embraced by an American surrounding. This form of electrical empowerment, is of course, never quite the same as actual acknowledgement of a real kind of citizenship. For one, the entry of bodies into an electric public relies on derogatory stereotypes of a Gothic American landscape, and in doing so these bodies, one may argue, become problematically associated with horror more than with empowered citizenship. But electricity is that very phenomenon that inspires beauty and awe, as well as horror and fear. Isabel’s invisible electricalness is thus both enticing and horrific, which is very much what eighteenth and nineteenth century
fears about the invisible world are all about. The invisible world and the forces that occupy it—whether electrical charges or sound waves—are both promising and fearsome.
Conclusion

Charles Brockden Brown and Herman Melville are fascinated with the atmosphere because it gives them ways of articulating the promise and danger of the American political experiment. As we have seen scientific, literary, and political experiments in the eighteenth and nineteenth centuries overlap as spheres of experiment. Try as we might, eighteenth and nineteenth-century culture resists the twenty-first century desire to split them. In this study, electricity then is not simply a metaphor for political experimentation. It is meant to be taken literally. Electricity was a literal means by which individuals in the eighteenth and nineteenth centuries understood their politics and their bodies. As co-participants in experimental culture rather than a metaphor of one another, I cognitively map literary, scientific, and political experiments as real entities to be taken seriously.

While our current cultural moment views literary experiments and scientific experiments as two very different, and separate, enterprises I choose to take a lesson from eighteenth and nineteenth-century notions of culture. Our current age likes to separate literature from science. The author writes in the coffee shop, on napkins even—this cannot be scientific. The scientist, in contrast, is specially trained to work in the laboratory with fancy instruments. Our twenty-first century moment would benefit from changing up this view of culture and professional divide. We would greatly benefit from adopting an older view of culture in which literary experiments were not simply looked
as a playfulness with form and genre but as legitimate fictional-thought-hypotheses themselves that could exist alongside and with scientific and political experimentation.

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1 For more on C.P. Snow’s life see Stefan Collini’s introduction to C.P. Snow’s “The Two Cultures and the Scientific Revolution.

2 Note that the novel takes place prior to the American Revolution, so this could in fact be referring to the American colonies. Although the American colonies were in fact British, I would assume that the distinction that Carwin was a native of the colonies would be made.

3 Note the connections between nationality and voice. Carwin’s ability to alter his voice makes him raceless and nationless. He can perform Spaniard, Englishman, American, and savage.

4 Note that the same electrified American climate will come up in Pierre, particularly in the scene with Isabelle, an electrified woman whose body indoors synchs with the electrical storm without.

5 For more on dystopic readings of the telegraphic myth, see Gilmore’s Aesthetic Materialism. The chapter on Pierre and the Introduction are particularly relevant to this subject.

6 Halliday provides a useful definition of nineteenth-century physiognomic science in the following lines:

   The predominant means whereby most characters in realist novels resemble themselves is undoubtedly physiognomy, the influential ‘science’ of human nature formulated by Johan Caspar Lavater (1741-1801) and others in the late eighteenth and early nineteenth centuries. In Kant’s useful definition, physiognomy is the ‘art of investigating the human interior through external, involuntary signs.’ Physiognomy, we can therefore say, assumes the legibility of the body, and grounds the possibility of judging character in the body’s availability for inspection. And though the scientific credentials of physiognomy were often queried—Kant, in fact, dismisses them—its assumptions continued to inform the artistic and literary practice long into the nineteenth century [...] Throughout nineteenth-century fiction, then, characters typically ‘represent themselves’ and are represented to the reader by means of their bodily appearance: the stances they adopt, and the expressions of their faces (Halliday 79).

Physiognomy, then, is an integral part of Pierre, where characters outer, exteriors are continually described, without any resolution of their actual interior.
The idea that spirits coexist in our perceived reality, inhabiting the invisible world, has existed for thousands of years. Here, I refer to the moment in scientific history when the invisible world is atmosically rendered in a way that is supported by science.

Note that Spiritualist arguments about the existence of spirits and ghosts in the invisible world fill up the air in a similar, but different kind of way. Both the atmospheric sciences and the spiritualist movement posit that there is a level of reality that cannot be seen but exists nonetheless. Molly McGarry even argues that spiritualism oftentimes presented itself as a science and used the terms of nineteenth-century science to justify their claims. See McGarry’s *Ghosts of Futures Past: Spiritualism and the Cultural Politics of Nineteenth-Century America* (2008) for more on the connection between the atmospheric and molecular sciences and the spiritualist movement.

Henry Robertson, in *A General View of the Natural History of the Atmosphere* (1808), similarly claims that the “earth is surrounded by an invisible elastic and gravitating fluid, which reaches to a considerable height above its surface” and that the word “atmosphere is appropriate to distinguish this fluid” (4).

For more on other microscopic atmospheric particles see Bryan Waterman’s “Arthur Mervyn’s Medical Repository and the Early Republic’s Knowledge Industries.” Waterman cites Samuel Mitchell’s poetic treatise on Septon, the noxious gas, which is published in the *Medical Repositories*, the first American medical journal. Mitchell holds that these “two natural forces” exist “in the universe to balance each other” (quoted from Waterman 225). Mitchell argues that when Oxygen, the principle of life, and Septon, the “principle of dissolution,” combine, they release “pestilential fluids” into the atmosphere (quoted from Waterman 225). In order to prevent the spread of pestilence, Mitchell recommends using alkalis, lime and potash, to neutralize the Septon. “For this reason,” Waterman notes, “Americans whitewashed the interiors of their homes with lime and some even ingested the stuff” (225). Although the topic of yellow fever is beyond the scope of this paper, I do wonder if the prevalence of yellow fever on the American continent led some to believe that there was a higher Septon concentration in the American air, similar to, as we shall see, Constantin Volney’s assertion that the American atmosphere is more electrically charged and therefore more dangerous.

For a lengthier discussion of the use of electricity in Constantin Volney’s *A View of the Climate of the United State of America* (1805), see my second chapter.
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