

“Nerves in Patterns”
Synaptic Space, Neuroscience, and American Modernist Poetry

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Abstract

Deric Corlew: "Nerves in Patterns": Synaptic Space, Neuroscience and American Modernist Poetry
(Under the direction of Dr. George Lensing)

Both modernist poetry and "modern" neuroscience used synaptic space to assemble fragments into meaningful arrangements that would replace the outmoded systems of the nineteenth century. Gertrude Stein and William Carlos Williams attempted to unify language by cleansing semantic associations and restoring the connection between idea and thing. Like her work in medicine and neuroscience, Stein's literary attempts to create accurate depictions of reality must ultimately be considered failures because they privilege grammatical connections over semantic associations, playing with surfaces rather than unearthing the networks underlying identity. As a physician, Williams was more willing to accept the mind and its ideas as systems of objects, "things" that can be rearranged and reconnected in space to change patterns of meaning. Like Williams, Wallace Stevens used the imagination to create accurate visions of reality but recognized that a changing and fragmented reality can never be captured by the eye, which can only build fictions that refract, condense, and interpret reality. Stevens' theory of vision is thus rooted in the anatomical structure of the eye, and his theory of aesthetics viewed any phenomenological evasion of the "I" as an impossibility because the "eye" necessarily distorts and enriches reality. For T.S. Eliot, the division between the "I" and "eye" is framed through the "dissociation of sensibility," which rests on a tension between the progressive forces of

consciousness, tradition, and culture, and the mind's evolutionary past, the sensibility that not only provides the foundation of thought but also threatens the "dissolution" of the mind into a primitive bundle of fragmented instincts. In poems such as "The Love Song of J. Alfred Prufrock," Eliot resists both "higher" psychological abstractions that deny the physicality of the brain and a "lower" physiological behaviorism that would leave the mind without consciousness, scuttling like a crab on the ocean floor. Although modernists used synaptic space to salvage meaning from a skeptical age, this space itself became the target of skepticism as postmodernists questioned the ability of space to unify and limit meaning.

To my mother, who gave me books
To my father, who gave me support
To my wife, who gave me a kiss to build a dream on

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Introduction: Synaptic Space and “Fragmented” Modernity

*And new Philosophy calls all in doubt,
The Element of fire is quite put out;
The Sun is lost, and th' earth, and no man's wit
Can well direct him where to look for it.
And freely men confess that this world's spent
When in the Planets, and the Firmament
They seeke so many new; then see that this
Is crumbled out againe to his Atomies*

John Donne, *An Anatomy of the World—The First Anniversary* (CPSP 199)¹

London Bridge is falling down falling down falling down

T.S. Eliot, *The Waste Land* (CPP 50)

All things considered, Donne's *Anatomy of the World* is still a strange poem. Written to gain the favor of a potential patron, Sir Robert Drury, the *Anatomy* memorializes the death of Drury's adolescent daughter Elizabeth. However, rather than offering consolation to the grieving father, Donne spends most of the poem arguing that Elizabeth's death provides proof of mankind's fallen and increasingly degraded state. After suggesting that the fourteen-year-old girl had the power to restore order and purpose to the world, Donne argues that her death is indicative of a general trend towards decay and fragmentation. Donne's *Anatomy* is really an autopsy, an attempt to determine the cause of Drury's death through a itemized investigation of the world's diseased and decomposing corpse. Even as he writes,

¹ Most of the poems discussed in this dissertation, such as Donne's *Anatomy* and Eliot's *Waste Land*, are several pages long and rarely accompanied by line numbers. For this reason, I have provided the page number rather than the line numbers for all quoted passages.

the stench of death overwhelms him and forces the poem to its premature conclusion: “So the world’s carcasse would not last, if I / Were punctuall in this Anatomy. / Nor smels it wells to hearers” (*CPSP* 204). One can only imagine Sir Robert’s initial reaction to the poem, which spends equal time discussing his daughter’s virtues, the decline of man, and rotting corpses.

Perhaps Sir Robert, like most readers, would have immediately understood that Donne’s interest in Elizabeth Drury was only incidental. The untimely death of an innocent girl provides the occasion for Donne to express his fears about the direction of modern thought, developments in science and technology that threatened the stability of Donne’s theological model. During the early seventeenth century, the resurgent popularity of classical thinkers like Democritus, Lucretius, and Epicurus gave new life to the theory of atomism, which argued that the universe consisted mainly of empty space and that all matter was composed of irreducible units invisible to the naked eye. This “new Philosophy call[ed] all in doubt” because it refuted the foundational assumption that the universe possesses a perfect fullness that mirrors the perfection of God. In the older, ordered universe, a system of correspondences could be charted following a quaternary model, connecting everything from the four humors to the four elements and creating a hierarchical chain of being to justify the structures of nature, the Church, the State, and even the family. In a universe “crumbled out again” into atomies these structures are “all in peeces, all cohaerence gone; / All just supply, and all Relation: Prince, Subject, Father, Sonne, are things forgot” (*CPSP* 199). Donne suggests, rather improbably, that Elizabeth Drury had the “Magnetique force alone, / to draw, and fasten sundred parts in one” (*CPSP* 199), but Drury is largely symbolic of a prelapsarian (and pre-modern) innocence that cannot be regained. The death of Drury confirms man’s fallen state, proving that man will never achieve order or reach his spiritual potential.

Donne's poem was published in 1612, three hundred years and a decade before the *annus mirabilis* of modernism in 1922. Yet the concepts in the *Anatomy* should be familiar to scholars of modernism, as they are the same themes found in T.S. Eliot's *Waste Land*: a world imperiled by fragmentation and decay, a loss of cultural values and the unification they provided, and an ultimately hopeless quest for a figure powerful enough to restore order. In Donne's poem, the danger lies in man's aspiration "to be a phoenix," looking to re-order the heavens with inherently faulty reason. In Eliot's, humanity has chosen the material over the spiritual; each commuter over London Bridge has "fixed his eyes before his feet" (CPP 39) instead of heavenward, creating a Dante-esque hell of spiritual isolation. Eliot's vision of crumbling cities and the patchwork construction of *The Waste Land* provide evidence that culture and tradition have little meaning in an age whose skepticism keeps pace with its rapid developments in science and technology. As in Donne's *Anatomy*, it seems that in *The Waste Land* all coherence is gone, no city, myth, or voice can provide the stabilizing center to the poem. Eliot shows the reader "fear in a handful of dust" (CPP 38), a collection of disordered material fragments that reveal life's fragility and lack of purpose. The Fisher King, unwilling to "set his lands in order" (CPP 50), provides the counterpart to Donne's Elizabeth Drury and, due to his absence, serves only as a reminder of what has been lost.

Critics of modernist poetry, especially Eliot and his New Critical followers, have emphasized the similarity between the two historical periods and the poetry they produced. Yet a comparison of these two poems exposes an important shortcoming in critical discussions of early-twentieth-century literature. Whereas scholars of Donne have viewed his poetry and thought in terms of space through the impact of a Lucretian revival, scholars of modernist poetry have consistently framed the same problem in terms of cultural and social

fragmentation.² According to this view, Donne is reconciling his worldview with scientific progress while Eliot is merely reproducing, and lamenting, the fragmentation of modern life. My deliberate misreading of Donne's poem ignored the poem's ultimate conviction that space can be bridged and atoms re-joined. Although Donne sees the world stripped down to bare atoms, a wasteland of particulate dust, he nevertheless finds hope of immortality in these atoms that survive death by passing into new forms. The hierarchy breaks down only to create communion between earth and sky, man and nature, and master and servant—all of which are equally composed of the same basic matter. In the *Anatomy*, the transcendence of the atoms provides a “middle nature” between mortal death and spiritual life—the same nature Donne ascribes to verse:

Verse hath a middle nature: heaven keeps Soules,
The Grave keepes bodies, Verse the Fame enroules (*CPSP* 203).

The space in Donne's universe not only divides the world into atoms, but also provides new sources of connection that allow Donne to preserve his faith.³ Elizabeth Drury may have passed away, but a version of her ordering vision still exists in the creative energy, both natural and poetic, that survives her death.

My goal in this dissertation is both to reframe the discussion of modernist fragmentation in terms of space and to show that the version of space in Donne's *Anatomy* is

² Ironically, one of the most important discussions of Donne's interest in space was conducted by a modernist poet and a major member of the New Critical movement, William Empson. The first volume of *Essays on Renaissance Literature* collects a series of articles connecting Donne's interest in astronomy to his theological views. In many ways, Empson resurrects Donne's astronomical crisis in his own poetry, reacting to the theories of space by Arthur Stanley Eddington in poems such as “Plenum and Vacuum.”

³ David A. Hedrich Hirsch provides an extensive analysis of Donne's “atomies” and their relation to his theological views in his article “Donne's Atomies and Anatomies: Deconstructed Bodies and the Resurrection of Atomic Theory.” Hirsch points to a significant passage in Donne's “The Exstasie” that suggests the immortality and immutability of atoms:

Wee then, who are this new soule, know,
Of what we are compos'd and made,
For, th'Atomies of which we grow,
Are soules, whom no change can invade (*CPSP* 40).

one of the most important, and neglected, characteristics of modernist poetry. This version of space acknowledges that fragmentation has become a necessary part of modern life, reproducing cultural and social divisions; however, it also attempts to overcome that fragmentation by making space itself connective and meaningful. While the modernists displayed nostalgia for the unifying structures of previous generations, which Eliot summarized as Anglo-Catholicism, royalism, and classicism, they also asserted poetry's power to create new connections and new unifying structures. I would argue that my initial reading of *The Waste Land*, although a conventional interpretation, is also a misreading. As in the *Anatomy*, Eliot's poem exploits the tension between the disorder it presents and the organizing power of the poet. Eliot has actively "shored" these fragments "against [his] ruin" (CPP 50) by grouping "broken images" into a "heap" (CPP 38) and even forming dust into "a handful," pitting the destructive forces of modern life against the creative power of language. The thrice repeated "Shantih" that concludes the poem highlights the disparity between language and content, providing an abrupt but finished "formal ending" that contrasts with the unresolved problems the poem presents (CPP 50). Even the notes that follow the poem, and the epigraph that precedes it, work to preserve *The Waste Land*'s structural identity in the midst of threatening dissolution, framing the content and highlighting the craftsmanship of the poet (the dedication reads, "For Ezra Pound: *il miglior fabbro*") (CPP 37). To describe *The Waste Land* as fragmented is to ignore Eliot's attempts to craft these fragments into a poem, a space in which all these disparate components are meaningfully combined.

As Donne's poem shows, all fragmentation is really the introduction of space into a previously full or closed system: fragmentation presupposes, and is dependent upon, space.

As I have shown above, viewing modernism as a problem of fragments rather than space tends to emphasize destruction while ignoring the possibility of unification. In her 1924 essay, “Mr. Bennett and Mrs. Brown,” Virginia Woolf wrote that in the modern era “we must reconcile ourselves to a season of failures and fragments” (*Collected Essays* I.323), and criticism of modernist poetry perpetuates her association of fragmentation with failure. Not only has fragmentation become a foundational trope in most descriptions of modernism, but it has also been persistently attached to failure—the modernist author’s inability to represent experience adequately in the midst of complexity and diversity or, alternately, the successful representation of failed and “broken” cultural, intellectual, and poetic models. The perpetuation of fragmentation as a dominant trope within the study of modernism has led to the belief that modernist authors were passively reproducing experience when, in truth, they were actively forging new connections to bridge the “gaps” created by scientific, intellectual and technological progress. No poem more clearly enacts this attempt at connection than Hart Crane’s *The Bridge* (1930), which uses the Brooklyn Bridge as its eponymous symbol and displays a series of connections across historical, geographical, and cultural boundaries. Yet Crane’s theme is implicit in the structure of all the “fragmented” masterworks of modernist poetry, beginning with Whitman’s *Leaves of Grass* and carrying through *The Waste Land*, *The Cantos*, *Notes Toward a Supreme Fiction*, and *Paterson*. The narrator of Whitman’s *Song of Myself* answers his own concerns about fragmentation with a bald assertion of the poet’s ability to bring the heterogeneous elements of the poem into unity:

Do I contradict myself?
Very well then I contradict myself,
(I am large, I contain multitudes) (*Leaves of Grass* 88).

This answer, significantly located in a parenthetical space just outside the confines of the poem (whose voice is contained in the parenthesis?), marks the beginning of a new attitude towards meaning.⁴ Like *Leaves of Grass*, the meaning of the modernist poem often depends upon a dialectic between fragmented content and cohesive form.

The difference between the content of these poems and their form reflects a larger distinction that modernists made between the divisive space of everyday life and the unifying, connective space of poetry. In “The Metaphysical Poets,” T.S. Eliot described the ordinary man's experience as “chaotic, irregular, fragmentary,” but he also claimed that “when a poet's mind is perfectly equipped for its work, it is constantly amalgamating disparate experience” (64). Thus, in Eliot's view, fragmentation facilitates connection; the ordinarily irreconcilable divisions between “falling in love” and “reading Spinoza,” or the “noise of a typewriter” and “the smell of cooking,” become the very means by which modernist poetry, or any poetry, is made. Earlier in the essay he comes close to defining poetry as this capability of “forming new wholes”: “a degree of heterogeneity of material compelled into unity by the operation of the poet's mind is omnipresent in poetry” (64, 61). Eliot's definition is indicative of a general trend in post-Symbolist poetry that reached its apex in the work of T.E. Hulme, Pound and the Imagists. Following Henri Bergson, Hulme tended to view the problems of art and philosophy as a tension between time and space, the fragmented “extensive manifolds” of intellect and the unified “intensive manifolds” of intuition. No longer viewing the poet as a prophet speaking in transcendental symbols (a

⁴ I quote here from the 1891-2 edition of *Leaves of Grass*. The 1860 version also seems to imply multiple voices, using the space of ellipsis rather than parenthesis:

Do I contradict myself?
Very well then . . . I contradict myself;
I am large . . . I contain multitudes (103).

Symbolist aesthetic continued by W.B. Yeats), Hulme's modernist poet would gain his authority by escaping the compartmentalizing habits of the intellect, "placing himself back within the object by a kind of sympathy and breaking down by an effort of intuition the barrier that space puts between him and his model" ("Bergson's Theory of Art" 192). The result of such acts of intuition was a poetry of compound structure, stripped of romantic language and temporarily holding the flux of experience in a carefully crafted image.

Hulme and Pound's Imagist aesthetics thus shifted the source of meaning in the poem from the rhetorical to the structural. The poet's contribution was no longer the ornamentation of reality, the poeticizing of everyday life, but rather inventing forms that gave coherence and meaning to increasingly complex and dissociated experience. This shift from language to structure implicitly suggests another shift from the material to the spatial: a new emphasis was placed on the space connecting the pieces of the poem together. When Pound describes an "Image" as "that which presents an intellectual and emotional complex in an instant of time," he not only eliminates the element of time, but also makes the assembly of a "complex" a prerequisite of modernist poetry ("A Retrospect" 4). The poem must not only bridge the divide between the intellectual and the emotional, but also the space between the objective and the subjective.⁵ No poem demonstrates this spatial aesthetic more elegantly than Pound's "In a Station of the Metro," which packs an enormous significance into the single space between the poem's two lines:

The apparition of these faces in the crowd;
Petals on a wet, black bough (*Selected Poems* 35).

⁵ T.S. Eliot would later articulate these Imagist ideas more fully, calling the divide between the intellect and emotion the "dissociation of sensibility" and describing the power of the "objective correlative" to unify the subjective experience of the poet with the objects in the poem: "The only way of expressing an emotion in a work of art is by finding an "objective correlative"; in other words, a set of objects, a situation, a chain of events which shall be the formula for that particular emotion" ("Hamlet and His Problems," *SP* 48).

I would argue that the “meaning” of the poem consists in the image formed in the space between the two lines, carrying the connective weight of the poem in the absence of a verb. Here the poet demonstrates his power, joining together the bustle of the Metro station with the serenity of Japanese artwork, and the time-obsessed modern world with the timelessness of art. Following his definition of the “Image,” Pound’s space faultlessly conjoins an external observation with a state of mind, the direct treatment of experience with the implicit commentary provided by the noun “apparition.” “In a Station of the Metro” achieves its power not only from the words on the page, but also from the dense meaning contained in its spaces as a result of Pound’s compression.⁶ The importance of space to Pound’s message is even more evident in the original printing of the poem in *Poetry* magazine in 1913, which removes the punctuation at the end of the first sentence and introduces typographical gaps into the lines:

The apparition of these faces in the crowd
Petals on a wet, black bough⁷

The space highlights the compounding effect, using the gaps to indicate the incremental transition from experience to image, what Pound referred to as “the precise instant when a thing outward and objective transforms itself, or darts into a thing inward and subjective”

⁶ The amount of meaning condensed in the short poem reflects the process of its composition. In *The Pound Era*, Hugh Kenner describes Pound’s year-long effort to compress his experience at the Paris Metro station into a single image:

he first satisfied his mind when he hit on a wholly abstract vision of colors, splotches on darkness like some canvas of Kandinsky’s...Satisfaction lay not in preserving the vision, but in devising an abstract equivalent for it, reduced, intensified. He next wrote a 30-line poem and destroyed it; after six months he wrote a shorter poem, also destroyed; and after another year, with, as he tells us, the Japanese hokku in mind, he arrived at a poem that needs every one of its 20 words, including the six words of its title. (184).

⁷ This version of the poem can be found in *Poetry* 2(1913), 12. For a detailed description of the publication history of the poem and Pound’s changes in punctuation, see Steve Ellis, “The Punctuation of ‘In a Station of the Metro’” *Paideuma* 17: 2-3 (Fall/Winter 1988): 201-207.

(*Gaudier-Brzeska* 89). In many ways, the original poem is more revolutionary in its use of free verse, less reliant on the *hokku* and thus more removed from formal constraints.

Because of such focus on structure, it is no surprise that the followers of the “Image” were also the major proponents of *vers libre*. Removed from the burden of fixed form, the modernist poets would be largely distinguished from each other by their unique use of space. In the liminal coastal regions of “Oread,” H.D. made Imagistic space more complex and androgynous, using Pound’s subversion of traditional metaphor to blend and challenge gender categories. In poems like “The Love Song of J. Alfred Prufrock” and “Gerontion,” Eliot used space to indicate the mental associations that characterize consciousness. Utilizing the possibilities created by the typewriter, e.e. cummings used typographical space to modify the reader’s experience in the act of reading, compressing and expanding language to contort meaning. Like Cummings, William Carlos Williams exploited the invention of the typewriter, but used it to bridge the divide between poetry and visual arts such as painting and photography. Finally, Wallace Stevens used space to highlight the fact that reality is always a step ahead of perception, making each stanza break of “Thirteen Ways of Looking at a Blackbird” represent a new perception, a new blackbird, and a new reality. The differences between these poets are defined by their unique adaptation of free verse, which in turn is defined by their unique vision of space.

The use of space in modernist poetry displays remarkable diversity and provides insight into each poet’s particular philosophical interests and aesthetic goals. However, in each of these cases, the poet’s formal use of space indicates a larger thematic or intellectual concern. In other words, each poet uses the formal combination of fragments in the poem with the larger goal of forming cultural or intellectual fragments into a unified system of

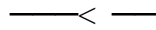
meaning. Whether it be H.D.'s rewriting of gender or Wallace Stevens' revision of perception, these poets transform space from a stylistic device into an intellectual tool. As William Carlos Williams would phrase it, these poets combine "things" to form "ideas." Space, as it is used in modernist poetry, is thus more than a formal device designed to reproduce fragmentation, becoming—through its ability to associate, connect, and combine—a way to escape fragmentation and make meaning from increasingly complex ideas like gender, culture, tradition, identity, and truth.

Despite their attacks on the simplicity and naivety of the previous generation, many of the experimental attempts of modernism seem driven by a desire to replace the ordering structures of the nineteenth century. In this way, modernist poetry is defined by a tension between a nostalgia for unifying systems and a recognition that these systems can no longer exist in a culture characterized by complexity, diversity, and change. As I will show, modernism is haunted by the specters of the past in complex ways. Poets were not only burdened with the memory of the previous generation, with its strong faith and unified worldview, but were also forced to reconcile their compensatory structures with the failed systems of the past. The major challenge of modernist poetry is that it must build structures of meaning suitable for the twentieth century using the detritus of the nineteenth century. Eliot's building blocks are, after all, the fallen towers of previous civilizations—the poet synthesizes, rather than abandons, past traditions. Whether in the form of myths that provide tantalizing promises of explication, the primitive and base instincts that underlie "higher" civilization and threaten to undermine cultural progress, or the intellectual and perceptual habits that limit the scope of thought and action, previous cultural, intellectual, and poetic traditions represented a major obstacle in the creation of modernism.

The use of space in modern poetry is complex, but it can be characterized by three common qualities: 1) the recognition that space itself can be meaningful and is capable of communicating information just as readily as language; 2) the understanding that space can be both divisive and connective, separating objects in a way that reflects the diversity of modern experience but overcoming that separation through the formation of new structures; and 3) a nostalgia for previous conceptions of space that both motivates and complicates this creation of structure. This new vision of poetic space synthesized concepts from a number of fields and philosophical movements, from Einstein's theory of relativity to Bergson's *durée*, but these revolutionary ideas were in turn indebted to a new conception of the body, rapid developments in neurophysiological research that reformed the understanding of consciousness, perception, and sensation.

The four poets who will be the focus of this dissertation each accepted this indebtedness, noting the connection between the physiological structure of the nerves and the structure of their poetry. The origins of Gertrude Stein's literary study of consciousness and identity can be found in her psychological and scientific study of these concepts in labs at Harvard and Johns Hopkins. Likewise, William Carlos Williams' description of the poetic imagination is closely related to his knowledge of physiology and his work as a physician. In his *Autobiography* Williams wrote, "The reason people marvel at works of art and say: "How in Christ's name did he do it?—is that they know nothing of the physiology of the nervous system and have never in their experience witnessed the larger processes of the imagination" (123). Among the collection of epigrams grouped in *Adagia*, Wallace Stevens claimed that "the body is the great poem" and that "one reads poetry with one's nerves" (*OP* 194, 189). To heal the "dissociation of sensibility" caused by the modern era, T.S. Eliot argues that the

poet must look deeper than his predecessors, “into the cerebral cortex, the nervous system, and the digestive tracts” (“The Metaphysical Poets” 66). These comments reveal a link between the modernization of poetry and the modernization of neuroscience, and, I will show, between the space of the modernist poem and the space of the nervous system.



In 1889, Santiago Ramón y Cajal decided he was tired of being ignored.⁸ He had published a number of articles in local journals, but his groundbreaking work went unnoticed because it was published in the wrong country and in the wrong language. Most of the leading players in nineteenth-century neuroscience, including Wilhelm His, Rudolf Albert von Kölliker, and Wilhelm Waldeyer, were German, and Spain was, simply put, a scientific backwater. Despite his lack of recognition, Cajal was an avid, even obsessive, worker (even giving up his beloved chess games at the local café to free his mind for research) and felt he had discovered something significant—in fact, many things significant. Gathering together a collection of slides prepared nightly in his kitchen laboratory after the dishes from the evening meal were cleared, Cajal made the journey to the 1889 Congress of the German Anatomical Society in Berlin. Once there, Cajal sat through a few presentations and then set up his slides in a quiet corner of the conference. Yet Cajal, the founder of modern neuroscience, who possessed proof that most of the work being done at the conference was obsolete, was just as ignored in Germany as he was in Spain.

The primary problem was Cajal’s use of the silver nitrate staining method, a complicated procedure discovered by Camillo Golgi almost a decade before Cajal’s discovery, but rejected by most histologists. Although the silver staining technique produced

⁸ The following description of Cajal’s trip relies on a number of sources, most prominently Cajal’s autobiography, *Recollections of my Life*, and Richard Rapport’s *Nerve Endings: The Discovery of the Synapse*.

beautiful, clear images, it stained neurons randomly and unpredictably for reasons still unknown today. Because most scientists endorsed the reticular theory, which held that the nervous system was composed of a single unit without space, the stain was considered to be faulty, staining only parts of a unified nervous net.⁹ Because of the stain's apparent unreliability, it had never been popular and was rarely used. When Cajal was introduced to the stain, he tried using it on developing tissue and achieved much better results, later theorizing that the myelin surrounding adult tissue reduced the effectiveness of the stain. Although Cajal's improvements to the silver nitrate technique were significant (he was awarded the Nobel Prize for them in 1906), it could be argued that his major achievement was correctly interpreting what he saw. Through his microscope, Cajal viewed not pieces of a single nervous unit but a series of discontinuous functional units later called neurons. As Laura Otis notes, "Cajal fought vigorously against the suggestive power of authoritative theories to influence his vision," rejecting the "cultural prejudices" of nineteenth-century neuroscience (77). Cajal was able to detach failure from fragmentation, viewing the slides not as the product of an ineffective staining technique, but as insight into the building blocks of a new nervous system.

When Rudolf Albert von Kölliker, the most famous neuroscientist of the time, finally wandered over to Cajal's presentation in a neglected corner of the conference and understood the significance of Cajal's slides, the entire field shifted its focus. Kölliker took it upon himself to spread Cajal's work, and during the next decade the neuron theory was born,

⁹ In 1886, Paul Ehrlich published a paper detailing a staining method using methylene blue. Ehrlich blue selectively but unpredictably stains certain neurons, producing results similar to the silver nitrate stain. For supporters of Cajal and the neuron doctrine, the Ehrlich blue stain corroborated their evidence and proved their findings were not the result of a faulty stain. Despite the similarity of their results, Ehrlich blue was used mainly by Cajal's opponents (notably A.S. Dogiel) because its slightly inferior stain blurred the boundaries between cells and thus supported a reticulated system. Cajal discusses the differences between the two techniques in *The Structure of the Retina* (1892).

quickly supplanting the reticular model of the nervous system. Wilhelm Waldeyer first used the term “neuron” in an 1891 review article and outlined the foundations of the neuron theory. As Cajal described it, the neuron doctrine was based on the following tenets: 1) that the nervous system is composed of a number of individual units, nerve cells or neurons; 2) that these units make close contact with the dendrites of other neurons and achieve continuity through the conduction of an electric impulse; 3) that the neurons display “dynamic polarization,” conducting in one direction only from the dendrite to the axis cylinder, or axon.¹⁰ From that point forward, modern neuroscience would be focused on these fragments and the specific ways they could be connected and arranged in order to create systems with meaningful function.

However, the transition from the reticular to the neuron theory was not altogether smooth. Just as scientists were initially reluctant to view Cajal’s slides as anything other than failures, many resisted the modernization of the nervous system. To these scientists, embracing the neuron theory meant the acceptance of a rigid determinism, a mechanized nervous system in which every unit could be mapped and defined. The reticular theory placed concrete limits on man’s understanding of the nervous system: the movement of impulses was unpredictable and the connections were too numerous to map. As Cajal wrote, “To affirm that everything communicates with everything else is equivalent to declaring the absolute unsearchability for the organ of the soul” (*Recollections* 338). Proponents of the neuron theory had to prove that a fragmented and polarized system could be a source of meaning, producing the complex behavior of the human organism previously attributed to ineffable and god-given free will. It is not surprising that the neuron theory was widely referred to as the “neuron doctrine,” giving it unmistakable religious overtones.

¹⁰ This description summarizes Cajal’s discussion of the neuron doctrine in *Recollections of My Life*, 322-3.

The issues at stake, as well as the continuing debate over Cajal's staining techniques and his interpretation of his data, generated passionate conflicts. Camillo Golgi, who discovered the silver nitrate stain that led to Cajal's discovery of the neuron, was nevertheless a passionate supporter of the reticular theory. When he and Cajal were co-recipients of the 1906 Nobel Prize in Physiology or Medicine, Golgi infamously used his address to attack the neuron theory, wryly commenting on the widespread and unquestioning acceptance of the doctrine: "the majority of physiologists, anatomists, and pathologists still support the neuron theory, and no clinician could think himself sufficiently up to date if he did not accept its ideas like articles of faith" (189). Without concrete visual evidence for the existence of the synapse (which would only come after the invention of the electron microscope in the 1930s), scientists continued to argue whether the nervous system had a fixed, unified form or was composed of fragmented objects and space.

As with the modernization of poetry, the modernization of the nervous system thus depended on a revolutionary vision of space. Interest in this space dated back to the middle part of the nineteenth century when increasing research on reflex action led to the discovery of "central reflex time" or "lost time" in the reflex arc, a predictable period of time left over when the observed reflex time was reconciled with a pen-and-paper measurement based on nerve conduction velocity (Finger *Minds*, 222). This delay, first quantified in 1891 by Hermann Helmholtz, accompanied even the simplest reflex response.¹¹ After the birth of neuron theory, physiologists hypothesized that this time might actually represent a physical gap between cells, a Bergsonian mixture of space and time. In 1897, this gap was named the "syndesm" by Charles Scott Sherrington. After the recommendation of a classicist at Trinity

¹¹ The knee-jerk reflex is the simplest reflex in the nervous system because it contains only a single synapse. Doctors still use this reflex to diagnosis synaptic abnormalities and loss of myelination around the nerve.

College, the syndesma became the more euphonious “synapsis,” which “yields a better adjectival form” (Bennett 23). As Sherrington wrote in a 1937 letter, this minor change had rather significant semantic consequences: “‘synapsis’ strictly means a process of contact, that is a proceeding or act of contact, rather than a thing which enables contact, that is, an instrument of contact. ‘Syndesma’ would not have had the defect, that is, it would have meant a ‘bond’” (qtd. in Bennett 23). Although he considered the name “defective,” Sherrington’s nomenclature inadvertently made the synapse an active rather than a passive junction, a “process” or “act” rather than a “bond.”

Placing the connective synapse between discontinuous neurons, Sherrington and other advocates of the neuron doctrine could now describe the basic unit of the nervous system on the model of the reflex: a receptor (the presynaptic neuron), a conductor (the synapse itself), and an effector (the postsynaptic neuron). In a series of lectures published in 1906 under the title *The Integrative Action of the Nervous System*, Sherrington offered the following foundational principle: “the reflex arc is the unit mechanism of the nervous system when that system is regarded in its integrative function”(7). As Sherrington described it, the reflex arc not only provided connection between different parts of the nervous system, but also acted as a discrete functional unit like the neuron. Viewed as an integrated system, the nerves follow the reflexive model on a larger scale: a chain of neurons can behave as a conductor like the synapse, connecting receptor areas to effector areas.

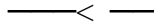
The synapse has the unique property of dividing units of the nervous system while simultaneously connecting them and modifying their behavior. Separating these functional units, the neurons, allows them to maintain a remarkable diversity in shape and function and gives plasticity to the system. For all the diversity in their structure, neurons are only capable

of an all-or-nothing form of communication; the physical properties of the cell's ion channels produce identical action potentials in every section of the axon in every neuron in the body. Stereotyped behavior within the neuron and repeated structural patterns seem to imply a limited range of human behavior. It is this characteristic of the neuron and the reflex arc that fit uncomfortably well with Pavlov's experiments in classical conditioning (for which he won the Nobel Prize in Physiology or Medicine in 1904, two years before Cajal). This "nightmare of determinism" caused by the reflex fueled the controversy over the neuron theory, but it was the synapse that eventually offered a way out. In contrast to the action potential's binary response, the chemical potential at the synapse could carry an almost infinite variety of meaning through the quantity and type of neurotransmitter release, causing excitation, inhibition, or subtle modulation. Coupled with the complex structure of the neurons, the ability of the synapse to modulate their activity created the possibility of diverse behavior. The synapse extended the system's capacity to create meaning, making responses as diverse as individuals themselves. As modern-day cognitive theorist Joseph LeDoux writes in *Synaptic Self*, "You are your synapses. They are who you are" (323).

The synapse thus serves two major roles: 1) the division of the nervous system into a series of diverse functional units while simultaneously connecting those units into a larger unity and 2) the modulation of those units through a chemical potential, providing the possibility of complex thought and behavior. For the rest of this dissertation, I will refer to any space with these two qualities as "synaptic space," space that forms unity through disjunction and space that carries or modulates meaning. Although I base the properties of synaptic space on the behavior of the synapse, I want to extend Sherrington's integrative model by proposing that this type of space need not be specifically located between two

adjacent neurons, but can occur between any two neurons in the system. Because a chain of neurons behaves similarly to a synapse, modifying activity and connecting regions of the brain and peripheral nervous system, they also represent a form of synaptic space. In this way, synaptic space blurs the distinction between space and object by giving them similar qualities, forming networks in which neurons and synapses are equally important.

As should now be clear, I view the space of modernist poetry as synaptic space, capable of unifying heterogeneous content and communicating or modifying semantic information. In this dissertation, however, I am interested in synaptic space not only as a formal concept, a physical quality of the nervous system or a formal property of modern poetry, but as a new means of viewing the relationship between the mind and the body, the self and the world, and the poet and the reader. The synapse fragmented the nervous system, revealing the complex nature of each apparently “instinctual” thought or simple behavior. In this way, the discovery of the synapse simultaneously brought modern neuroscience closer to a general understanding of experience and farther from an actual understanding of the intricate mechanisms that underlie that experience. However, the synapse not only introduced necessary complications into the system, but also—though its power to connect and associate—satisfied the desire for a unified theory of nervous behavior. As the neuronists fought against, and eventually disproved, the reticular view of nerve function, they also put in place a new structure that displayed both a recognition of fragmentation and a nostalgia for unity. Both “modern” neuroscience and modernist poetry thus faced similar growing pains, shattering experience into pieces while recognizing that, somehow, these pieces needed to be put back together again if their spatial revolution was to have any meaning.



This dissertation will consist of three chapters, each of which will focus on a single poet and a different manifestation of synaptic space. Each poet in this study viewed the problems of modernization differently, and each used space in a way that both defined these problems and pointed to their solution. Thus, each poet's interpretation of synaptic space reflects his or her individual nostalgia for the past, whether it be Stein and Williams' search for "bottom natures" or essences, Stevens' rehabilitation of the Romantic imagination, or Eliot's lament for cultural and intellectual unity. In each case, space not only introduces the fragmentation that prevents this unity from being recovered, but also provides that associational and connective power to create compensatory structures of meaning. These poets divide "things" from "ideas," the "imagination" from "reality," and "higher" thinking from "lower" instinct, but in doing so expose the rich associational space, the synaptic space, between these ideas.

Unlike subsequent chapters, the first chapter will explore synaptic space in two poets, describing Gertrude Stein's search for "bottom natures" and revealing that how this search is both extended and transformed in William Carlos Williams construction of "ideas" from "things." The first part of the chapter will provide a brief overview of Stein's work with habit and attention under the tutelage of William James. James' career is marked by two different versions of nervous function: an earlier psychological model that described identity as emerging from the physical structure and properties of the nerve network and a later, radical empiricist model that viewed identity as fluid and emerging from the transitions between moments of experience. In a similar way, Stein's work moved from attempts to classify and define identity (in *Three Lives* and *The Making of Americans*) to a focus on transitions and

the associational spaces between words. Although Stein's work has often been viewed as "post-modern" in its interrogation of language and its questioning of identity, I argue that Stein's poetry retains her early focus on "bottom nature" and, by her own standards, fails to reveal the underlying connections that form identity. While critics such as Steven Meyers characterize Stein's neuroscientific and literary careers as "deliberate failures," I argue that Stein's poetry, like her neurological drawings, ultimately became preoccupied with surface connections—either grammatical or neuronal—that prevented her from depicting the "true" nature of the objects she is describing. Stein's continued attempts to fix and classify identity ended in failure because they tended to multiply, rather than limit meaning. Finally, Stein's work stands uneasily between two visions of the nervous system, holding on to the nineteenth-century concept of "bottom natures" while exposing identity as an ever-multiplying system of connections and associations.

I argue that, unlike Stein, Williams was comfortable with the idea that the mind is nothing more than a system of nerves and recognized the close similarity between the composition of the mind and the world that surrounds it. This systematic view of the mind is closely related to Williams' training as a physician, resulting both from diagnostic practices that describe disease as a system of symptoms and from an anatomical understanding of the body as a system of organs. However, I want to suggest that Williams' interest in neurology during medical school gave him direct access to another type of system, to neuroscientific research that described the mind as a network of interconnected objects. This systematic arrangement of objects provides a new way of approaching Williams' dictum "no ideas but in things" and his description of the poem as a "small (or large) machine made of words" (*CP* 1:263; 2:54). I will argue that William's belief in the fundamental equality of objects

allowed him to use the imagination to bring together the objects within the poem (words and space) with the objects of the external world. In this way, Williams deconstructs abstract ideas only to rebuild them again, rearranging and connecting objects from traditionally divided domains to reform the content of ideas.

Like Williams, Wallace Stevens was concerned with the relationship between mental processes and the real objects of the external world, but Stevens viewed this relationship as a problem of perception, rather than cognition. The second chapter will argue that Stevens viewed the eye itself as a synaptic space, physically separating reality (the light that enters the eye) from the mind (the visual cortex that receives these images). In the late nineteenth century, neuroscientists such as Max Schultze, Santiago Ramón y Cajal, and Hermann von Helmholtz had shown that that the process of perception consists of a series of refractions and concentrations, making vision an interpretive act even at the level of the retina. Reflecting a “modern” understanding of visual anatomy, Stevens recognized that the interpretive nature of visual perception prevented the mind from seeing “the thing itself”. However, he also realized that this opaque vision of reality was the only possible approach to truth, arguing that the synaptic space of the eye could be a rich source of meaning even though it orders and “colors” reality.

The first half of this chapter will provide a brief history of visual anatomy and physiological optics, a history framed through the classical debate between the “emanation theory” and “emission theory” of vision. These theories, which are the physiological counterparts to the “mirror” and the “lamp,” viewed the eye as either passively receiving light from the external world or actively emitting the perceiver’s spirit. Although these simplified theories of vision still appear in many interpretations of Stevens’ poetry, I will use

poems such as “A Glass of Water” to show that Stevens not only understood the physiological mechanisms of vision, but also described visual perception in “modern” terms, as a process dependent on both light-images and the “imagining” of the eye. The second half of the chapter will extend this discussion by questioning how this understanding of vision limits and facilitates Stevens’ poetic search for truth. After providing an overview of retinal anatomy as it was understood in Stevens’ time, I will use the work of Hermann von Helmholtz, a nineteenth-century physiologist, physicist, and philosopher, to show how this understanding of visual anatomy transformed essential visual properties (like color, form, and movement) into products or interpretations of the retina. While phenomenologists like Husserl and Heidegger argued that the observer must overcome these subjective visual limitations, I will show that Stevens used these limitations to both challenge our existing “ideas of order” and catalogue a diverse array of poetic “truths” that worked toward, but never completed, the Supreme Fiction.

The last and longest chapter will be devoted to the work of T.S. Eliot, viewing two key concepts in Eliot’s work—“tradition” and the “dissociation of sensibility”—through the lens of neuroscience. I will argue that Eliot’s understanding of both of these concepts reflects a larger “dissociation” in his work between “higher” and “lower” mental function. In the first section of the chapter, I will show how this distinction between mental functions emerged from the work of Herbert Spencer, whose evolutionary theories located “civilized” mental functions such as reason and consciousness in the cerebrum but also argued that “primitive,” instinctual mental functions were retained in the lower brain. Because Spencer placed the civilized mind precariously above its evolutionary past, he allowed neurologists such as John Hughlings Jackson to theorize that diseases (such as epilepsy) and drugs (such as alcohol and

tobacco) caused the temporary de-volution or “dissolution” of the mind as the weakened higher centers were overthrown by the stronger, automatic lower centers. The mind’s primitive past lurks under the surface of Eliot’s poetry, emerging most prominently in characters such as Sweeney, and challenges the intellectual and cultural advancements that define modernism. I will argue that Eliot’s theory of tradition, like his “definition of culture,” builds upon the past while seeking to supersede it. In a way similar to the mind itself, tradition and culture can experience “dissolution,” falling back into the fragments that form their foundation. For this reason, Eliot’s poetry and critical writing reveals a constant tension between his desire to purify and protect language and his understanding that this language contains, within itself, the seeds of its own destruction. As in my earlier reading of *The Waste Land*, I argue that Eliot’s theory of tradition is marked by both fragmentation and connection, attempting to form meaningful connections with the past and thus always looking “Over the shoulder, toward the primitive terror” (“The Dry Salvages” *CPP* 113).

The second section of this chapter will show that a similar higher/lower division underlies Eliot’s description of the “dissociation of sensibility.” During Eliot’s time in the Harvard philosophy department, he was taught two fundamentally different definitions of consciousness. The first, reflected in the work of Eliot’s Harvard instructor Dr. Sidney Langfeld, viewed conscious as a psychological entity that organized nervous activity while remaining “above” the physiological mechanisms of the body. The second, made popular by experimental psychologists like Ivan Pavlov, Edward Thorndike, and John B. Watson, viewed consciousness as an abstract entity that had no effect on physical nerve function; thus, the body responded to its environment through a series of reflexes as it constantly tried to maintain equilibrium. Although Eliot sought to unify sensibility—merging conscious

thought with sensation—his skepticism prevented him from accepting an idealized vision of consciousness while his poetry warned against the descent of human behavior into soulless mechanization. Thus, the “way up” and the “way down” were the same, and early poems such as “Introspection” and “The First Debate between Body and Soul” show Eliot trying to navigate the space between the higher and lower mind, finding a place for “thought” without denying its physiological basis in “sensibility.” Finally, I will argue that Eliot found this unity in Remy de Gourmont’s revisionary interpretation of instinct, which viewed true “intelligence” as the cumulative, embodied knowledge of previous generations. Gourmont’s model of intelligence not only unifies sensibility, but also provides the link between Eliot’s concept of “dissociated sensibility” and his hereditary interpretation of “tradition.”

The chapter on T.S. Eliot will conclude with a detailed reading of “The Love Song of J. Alfred Prufrock,” a poem that brings together the tension between higher and lower models of mind and the tension between abstract and physiological forms of consciousness. I argue that Prufrock, like his creator, is caught between deflated ideals that can no longer unify and the harsh reality of dissociation—a self that is purely physiological and, thus, fragmented and mechanistic. Eliot’s poem borrows concepts from philosophers such as Henri Bergson and T.H. Bradley and clinical psychologists such as Pierre Janet; however, it ultimately merges the philosophical and clinical perspective as it diagnoses modern solipsism and offers the synthesizing power of poetry as a cure. While representing Prufrock’s fragmented consciousness, Eliot’s poetics of impersonality and his use of synaptic space transform both Prufrock and the poem itself into a unified whole. By the end of the poem, the solipsistic Prufrock has finally heard “human voices,” merging the “You and I” that opens the poem into a unified “We.”

Eliot's work, like the poetry of Stein, Williams, and Stevens, uses space to reassert poetry's ability to make meaning. These poets use space in a way that not only represents the fragmentation of modern life, recognizing the impossibility of returning to naïve nineteenth-century ideals, but also escapes that fragmentation through connection, building large, complex systems of meaning from the ruins of these ideals. Like the neuroscientists of their day, these poets were torn between the material facts of the twentieth century (the neuron-like bits that figuratively compose modern experience and literally compose the modern mind) and the memory of the ideal systems of the nineteenth century with complexity and meaning beyond human inquiry. As I will show in this dissertation, synaptic space provided a way to bridge the gap between ideas and things, imagination and reality, and thought and sensibility. In this way, the words of modern poetry are "nerves in patterns," fragments artfully "shored" against ruin.

Chapter 1: Gertrude Stein and William Carlos Williams: A Tale of Two Chickens and Two Nervous Systems

so much depends
upon

a red wheel
barrow

glazed with rain
water

beside the white
chickens.

William Carlos Williams, "The Red Wheelbarrow" (*Collected Poems* 1:224)

Brian Bremen begins his book on William Carlos Williams with a discussion of chickens, an opening gambit altogether fitting for a poet most remembered for a poem about a red wheelbarrow, some rain water, and white chickens. In passing, Bremen calls Williams "perhaps the most famous poet to write about chickens," a seemingly innocuous assertion—were his audience not literary critics. Inevitably, Bremen's statement calls to mind other poems and other chickens (most of which are certainly more obscure than Williams' famous fowls).¹² For this reader, Bremen's statement summoned thoughts of Williams' fellow-

¹² According to a search for "chicken" on the Columbia Granger's World of Poetry Online, there are over three hundred poems that include a mention of chickens somewhere in the text. Other figures who found chickens appropriate subject-matter for poetry include Theocritus, William Shakespeare, Jonathan Swift, Robert Burns, Samuel Taylor Coleridge, Christina Rossetti, Robert Browning, Paul Laurence Dunbar, Carl Sandburg, and Charles Reznikoff. My personal favorite is John Reed's "The Chicken, a parody of Poe's "The Raven" that includes the line, "Open wide I flung the shutter, when, with many a flirt and flutter, / In there stepped a stately chicken of the saintly days of yore" (l. 21-22).

modernist Gertrude Stein, who includes four separate entries in *Tender Buttons* (1914) on “Chicken”:

Chicken.

Pheasant and chicken, chicken is a peculiar third.

Chicken.

Alas a dirty word, alas a dirty third alas a dirty third, alas a dirty bird.

Chicken.

Alas a doubt in case of more go to say what it is cress. What is it. Mean. Potato. Loaves.

Chicken.

Stick stick call then, stick stick sticking, sticking with a chicken. Sticking in an extra succession, sticking in (341).¹³

It seems that Williams may not even be the most famous *modernist* poet to write about chickens.

Questions of fame put aside, the difference between the two chicken poems is striking, especially considering the critical consensus that the two poets share the same aesthetic goals. While both Stein and Williams use space to manipulate the reader’s attention, breaking habits of reading and thinking, their understanding of that space is radically different. In Stein’s poem, the spaces between words call attention to the grammar and syntax of the sentence, exposing our assumptions about how language operates and highlighting the existence of words as words (rather than signifiers of real objects). Instead of making logical connections, Stein’s spaces connect words based on sound (“sticking” and “chicken” or “word,” “bird,” and “third”), connections that challenge our ability to make meaning. Likewise, Stein uses space to refute our conception of language as a transparent medium, making words just as physical as the objects they describe. Repeatedly in her

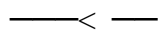
¹³ Barbara Will identifies another significant chicken in Stein’s work, appearing at the end of Stein’s prose poem “To Call it a Day.” In this poem, Will argues, Stein moves “from greater to smaller things, from monuments and war to the shockingly discordant chickens” (89).

entries for “Chicken,” phrases signify themselves in a way that emphasizes their physical presence on the page; chicken is a “peculiar third” and a “dirty third” because the *word* chicken appears in a list of objects or attributes, breaking what appears to be a logical series. She “sticks in an extra succession” to pull the reader from the deeper significance of objects back to the surface, to the physical spaces on the typewritten page.

As a consequence of this wordplay, Stein’s poem foregrounds language while the chicken itself fades into the background, revealing itself only if the reader successfully bridges Stein’s grammatical spaces. It is only when one views the spaces between words as connective, rather than divisive, that the words are allowed to combine and become almost legible signifiers. Nouns appear from prepositions and verbs, “more go” and “what it is cress” become Marengo (site of a Napoleonic victory and a traditional French recipe for chicken) and watercress, completing the meal that also includes “potato” and “loaves.” Michael Hoffman claims that Stein’s work is “a series of black symbols on a white page; its symbols are letters which, when combined, become words, and the combination of words become sentences” (68). According to Hoffman, “We are to admire, along with the author, the wonders of creation and to join her in what seems like the initial naming of the parts that make up the totality of that creation which she has called *Tender Buttons*” (68). Despite the claims of sympathetic critics, it cannot be ignored that Stein’s attention to language obscures the real objects that inspired her descriptions, contradicting her stated goal in *Tender Buttons* to make “a things that could be named without using its name” so that “something that was not the name of that thing but was in a way that actual thing would come to be written” (“Poetry and Grammar” 236-7)

Compared to Stein's chickens, stuffed as they are with grammatical and semantic complexity, Williams' white chickens in "The Red Wheelbarrow" are both more vital and more humble. Painting an impressionistic picture of the scene, Williams refuses to choose a focal point and instead reproduces the visual components that shape his perception. The strength of Williams' poem comes from its lack of poetic adornment and its ability to shift the expectations of the reader through a sinuous trail of conjunctions, prepositions and participles: "so much," "upon," "glazed," "beside." Like the poetry of Wallace Stevens, Williams' poem asserts the ability of the artist to implant an artificial center on the natural world, to place a jar on a hill in Tennessee and provide order (however dubious) to the wilderness. Also similar to Stevens, Williams constantly shifts this center so that every aspect of his vision achieves temporary dominion. However, Williams pays much more attention to the physical location of objects on the page, making these shifts spatial as well as mental. The chickens play only a supporting role, but through their placement at the end of the poem become the frustrating and empowering fulfillment to the expectations raised in the first stanza; so much depends on these significantly insignificant chickens brought to prominence by Williams' imagination. As Williams' prepositional language indicates, however, the chickens achieve value not only through their inclusion in the poem but also through their relationship with the other elements (both verbal and visual) that compose the artist's vision. Everything in the poem is stripped to bare materialism, "thingness," and brought into the poem's system of meaning. Even the poem's single verb, "depends," is quantified and materialized—there is "so much" depends "upon" (up on) the red wheelbarrow.

Both Stein's definition of "chicken" and Williams' poem thus emphasize the connective aspects of language, the semantic, phonetic, and grammatical associations that transform their work from a collection of words on a page to an idea formed within the reader's mind. In making this connection between the associative spaces on the page and the associative spaces of the mind, both Stein and Williams borrowed from new conceptions of mental processing that evolved from research into the anatomy of the mind. As neuroscientists began to view the mind as a system of anatomical units arranged across connective space, new problems and possibilities arose: How can these basic units combine to create complex functions? Are the connections between units plastic, or is the activity of the brain rigidly fixed and deterministic? Is there a center in the system that provides consciousness or will, or is consciousness a by-product of nervous activity? That these questions about form, habit, and consciousness also lie at the center of Stein and Williams' work is a testament to their understanding of the modern nervous system, an understanding gained in medical school classrooms and scientific laboratories. Before understanding how these two authors attempted to modernize language, transforming it into a system of units and connective space, it will be helpful to understand the issues surrounding the "modernization" of the nervous system as it similarly transformed into a system of nerves and synapses .



In 1839, Theodor Schwann and Matthias Schlieden formulated cell theory, which held that all animal and plants were composed of basic units with structural similarities.¹⁴ For the rest of the century, however, anatomists debated whether or not cell theory applied to

¹⁴ Matthias Schleiden published a paper in 1838 proposing that all plants were composed of individual cells. After attending a dinner party with Schlieden, Theodor Schwann applied Schlieden's theory to his own observations on animal cells. Schwann's application of cell theory to animals was published in 1839.

nervous tissue. Advances in staining and microscopy revealed that all nerves contain similar features; Otto Deiters showed in 1865 that each cell contained many “protoplasmic processes” (the tree-like structures later called “dendrites”) and a single “axis cylinder” (axon) (Shepherd 42).¹⁵ Unfortunately, the staining techniques of the early nineteenth century were often faulty or incomplete, and microscopes lacked the power to observe the extremely fine endings of the dendrites and axons. As a result, anatomists were forced to combine modest scientific evidence with expansive theory, making educated guesses as to whether the dendrites and axons formed connections (“anastomoses”) or merely made contact with other cells—whether the components of the nervous system were connected by continuity or contiguity.

Those who believed in the continuity of the nervous system hypothesized that the endings of each nerve dissolved into a fine mesh, a network or reticulum. “Reticularists” suggested that within the nerve “net,” each nerve lost its singularity as it became part of an impenetrable system of connections. In an 1872 article, anatomist Joseph von Gerlach argued that both axons and dendrites enter into “a wide-meshed network” that connects all cells (qtd. in Clarke 89).¹⁶ Gerlach’s theory appealed to many scientists because it gave the nervous system a complexity that matched the complex nature of thought and behavior. Because Gerlach’s theories were supported by clear images produced with gold chloride stain, images that seemed to show the elusive fine branches of the dendrites, his work built momentum for the network theory.

¹⁵ Shepherd refers to Otto Deiters as “The Keats of the Nerve Cell,” a title that suggests both the brilliance and brevity of Deiter’s career. Shepherd proposes that Deiters was working towards a version of neuron theory before his death at the age of 29.

¹⁶ Many of the articles integral to the development of neuron theory are republished and translated in Edwin Clarke and C.D. O’Malley’s *The Human Brain and Spinal Cord: A Historical Study Illustrated by Writings from Antiquity to the Twentieth Century*. Clarke and O’Malley used experts in the field to translate the archaic scientific idiom of the original documents, which were written in a diverse array of languages including German, French, Spanish, Italian, and Russian.

Ironically, it was a more famous reticularist who produced a better stain and disproved the existence of the dendritic net. Although he discovered the intracellular “Golgi apparatus” that bears his name, Italian scientist Camillo Golgi is best known today for his stubborn defense of the network theory, a defense that culminated in his embarrassing attack on Santiago Ramón y Cajal and the neuron theory at the 1905 Nobel prize award ceremony. Golgi and Cajal were co-recipients of the Nobel Prize in Physiology or Medicine for their discovery of the silver nitrate stain. This stain produced beautiful and clear silhouettes of nerve cells and definitively disproved the existence of Gerlach’s dendritic net. As Golgi wrote in an 1883 article, “Researches sur l’histologie des centres nerveux,” “I have never succeeded in discovering a single [dendritic] anastomosis in these preparations (although I have examined several hundred of them with the greatest care)” (qtd. in Clarke 92). While able to confirm the endings of the dendrites visually, Golgi was less successful in observing the ends of the axons and therefore hypothesized that these extensions, not the dendrites, composed the nervous net. Scientific historian Gordon Shepherd shrewdly notes, “Golgi’s imagination was most stimulated by those aspects he could see least well,” leading Golgi to inaccurate and unsupported speculations about the functions of the dendrites (Golgi supposed they were nutritive) and the structure of the axon terminals (91). Instead of leveling the playing field by refuting Gerlach, Golgi became an ardent supporter of his own version of neuron theory based on axonal extensions.

As noted in the introduction, the man who shared the stage in Stockholm with Golgi in 1905 delivered the final blow against reticular theory and effectively “modernized” neuroscience. Cajal’s improvements allowed him to see terminals of both dendrites and axons, and his careful drawings showed a nervous system composed of individual units that

made contact, but not connection, with each other. Although Cajal produced irrefutable evidence for the neuron theory (despite the continued protests of Golgi and such other reticularists as Hans Held), his work built upon the ideas of Wilhelm His and Auguste Forel. Both His and Forel had imagined that the nerves might communicate across space, criticizing those who insisted that communication required connection. As His wrote in an 1887 article, “I believe that one can also arrive at simple concepts regarding the nervous system if one abandons the ideas that nerve fibres, in order to affect a part, must necessarily be in continuity with each other” (qtd. in Clarke 102). Forel used the technique of “retrograde degeneration,” a process in which a sensory structure is damaged to reveal the path of its transmission and its associated cells in the central nervous system.¹⁷ According to principles discovered by Augustus Waller, the cells in the central nervous system would deteriorate from the damage, but Forel observed that the deterioration was limited and predictable. This finding seemed to eliminate the possibility of cell contiguity required by the network theory. If such a net existed, Forel proposed, it existed not in nerves but in the space between them, creating a “phantom net” that allowed a complex information network without a complex net-work of connected nerves (Shepherd 117). This “phantom net,” composed of both nerves and space, was finally revealed to the scientific world when Cajal made his famous trip to the Berlin Conference in 1889.

When Wilhelm Waldeyer wrote his widely read review of the neuron theory in 1891, consolidating the findings of His, Forel, and Cajal, it seemed to mark the end of the debate between the neuronists and reticularists. Waldeyer’s review confidently states “The axis cylinders of all nerve fibers...have been shown to originate directly from cells. There is

¹⁷ Wilhelm His arrived at the same conclusion as Forel after studying the generation of nerve cells, noting that all cells begin as independent units. His argued that the reticularist’s hypothesis, which claimed that these individual units grow to form a unitary net, was both illogical and unsupported.

no connection with a network of fibers or any origin from such a network” (qtd. in Shepherd 181). Yet the reluctance of Golgi and Held testifies to the enormous issues at stake, placing the neuron debate within the larger battle between scientific positivism and the vestiges of a Cartesian dualism that separated matter and spirit. To posit a reticulum too complex to analyze is to place the “mind” beyond the field of human inquiry, preserving it from neuronists who were all-too-willing to reduce and demystify higher thought. American neuroscientist Lwellys Barker, under whom Gertrude Stein worked for several years after leaving medical school, noted that the “*rete mirabile*” of the reticularists placed strict limitations on scientific research into the nervous system:

A more unsatisfactory condition of knowledge or a more prohibitive hypothesis can scarcely be conceived; all ideas of tracing out definite conduction paths or of localization of function within the central nervous system seemed well-nigh hopeless; in the general diffuse network investigators were halted by what appeared to be an insuperable barrier (Barker 7-8).

Early in his research, Cajal had recognized the same problem, arguing that the network represented a “sort of unfathomable physiological sea” that “did away with all need for analytical effort involved in determining in each case the course through the gray matter followed by the nervous impulse” (qtd in Shepherd 156). By “pretending to explain everything easily and simply,” Cajal claims, the reticular theory “explains nothing; and what is more serious, it hinders and almost makes superfluous future inquiries regarding the intimate organization of the centres” (qtd. in Shepherd 156).

The reticular theory, then, preserves an unfathomable “character” at the base of the nervous system, a complex network that determines an individual’s thought and action. In his autobiography, Cajal would phrase it more strongly: “To affirm that everything communicates with everything else is equivalent to declaring the absolute unsearchability for

the organ of the soul” (338). Cajal’s statement is complex, for it not only suggests that reticular theory declared the “absolute unsearchability” for a neurological soul, but also implies that reticularists wanted this vast network of communication to stand in for a soul. While not discounting the possibility of an “organ of the soul,” Cajal displays skepticism about the reticularists’ nostalgia for a Romantic soul that combined body and spirit, material nerves and immeasurable complexity. Just as William James criticized psychologists searching for a spiritual dimension to consciousness, Cajal argues that the reticular theory represents the “faint rumor left behind by the disappearing ‘soul’” upon neuroscience (James, “Does Consciousness Exist?” 4).

I would argue that what separates Stein from Williams is precisely this “faint rumor” of the soul in her work, the belief in an essential essence that Stein calls a “bottom nature.” Because their studies of the nervous system began nearly a decade apart (Stein in the early 1890s and Williams in the early 1900s), the two authors experienced different stages in the reticular/neuronal debate. While Williams was more willing to accept a nervous system, and a mind, composed entirely of individual units and existing in a plastic structure, Stein never abandoned a holistic, reticular concept of self. Even as Stein emphasizes grammatical units and space, she retains a belief in a fixed character capable of being revealed by the author. This fixed character is always associated with a fixed nervous system, characterized by nerve channels shaped at birth, passed through families, and worn into hardened habits. In Williams’ work, ideas are structures of things—physical things, mental perceptions, and grammatical objects—ordered into a system. In Stein’s work, the central idea becomes increasingly divorced from a system of language that emphasizes grammatical connections instead of meaning.

Stein's definition of "chicken," which foregrounds phonetic and grammatical play while allowing the real chicken to dissolve into the background, is indicative of a larger divide in Stein's work between her artistic goals and the execution of those goals. Although Stein is often viewed as "post-modern," deliberately deconstructing the foundations of language upon which her fellow modernists build, her initial statements about her work often exhibit a nineteenth-century realist aesthetic that pre-dates modernism. Stein began her psychological experiments under William James and her literary experiments in *Q.E.D.*, *Three Lives*, and *The Making of Americans*, with the belief that the character of consciousness could be fixed by an acute observer.¹⁸ It is only when these experiments failed, when consciousness proved too transient and changeable, that Stein began to cultivate the myth of "deliberate error" that informs deconstructionist readings of her work.

In contrast to Stein, Williams' early and complete acceptance of the mind as a system of nerves allowed him to recognize the close similarity between the composition of the mind and the world that surrounds it. In works like *The Embodiment of Knowledge*, Williams describes the "embodied" nature of mind and associates it with the poet's power to form concrete and meaningful connections with the objects of the world. Williams' imagination thus bridges the gap between the mind and world, and the formal space of his poetry works to create "synaptic" connections between mental, physical, and grammatical objects. As he underlines the fundamental similarity of "things," he calls attention to seemingly insignificant objects (chickens and wheelbarrows) and overlooked parts of speech (the articles and prepositions upon which so much depends). Williams uses synaptic space to organize these physical and grammatical things into larger systems of ideas, a process that

¹⁸ In *The Autobiography of Alice B. Toklas*, Stein claims that her early articles are "very interesting to read because the method of writing to be afterwards developed in *Three Lives* and *Making of Americans* already shows itself" (111)

not only mimics the neuronal organization of the brain but also restructures the mind through the imagination's power of arrangement and connection. Unlike Stein, whose search for "bottom natures" depends on the division of the perceptive genius from the objects of perception, Williams' poetic imagination denies the division of abstract ideas and physical objects, noting that there can be no ideas and no mind apart from the things that compose them. The difference between Stein's and Williams' chickens is really a difference between two visions of the mind and two understandings of the nervous system.

From Mental Networks to Grammatical Spaces: The Failure of Gertrude Stein

A careful reading of the psychological and philosophical writings of William James reveals two distinct descriptions of consciousness. The first, more prevalent early in his career, views consciousness as a material entity that parallels the nervous system, acting on and reacting against the processes of the body. Later, James refined this position and explained consciousness as a relationship *between* processes, suggesting that the self arises from the associative interactions between the objects of experience.¹⁹ As Stein critic Donald Sutherland notes, a minor scandal was created when James redefined the nature of consciousness and other "complex mental states" in 1895 (5).²⁰ In "The Knowing of Things Together," James defected from the intellectualist position (and his own position in *Principles of Psychology*), which held that consciousness was a complex entity reflecting the structural complexity of the brain. Instead, he argued that the complexity of mental states results from the complex relations they contain, and, accordingly, that consciousness exists

¹⁹ James' definition of consciousness is addressed more fully in introduction to the final chapter of this dissertation.

²⁰ Sutherland does not name the 1895 text that signals James' break from the intellectualist position. Presumably, he is referring to the essay "The Knowing of Things Together," published in the *Psychological Review* in 1895 but actually first delivered to the American Psychological Association in 1894.

as an aggregate of relations between objects of mental and physical experience. Once intimately tied to brain structure, consciousness is now located in the space between “things,” the meaningful gaps that “point toward” objects and assign value to them. While Sutherland attributes this change to an evolution in James’ thought, it also reflects an evolution in the understanding of the nervous system that occurred during the same period. Indeed, between the publication of the *Principles of Psychology* in 1890 and the essays later collected in *Essays in Radical Empiricism* (1912), the dominant model of the nervous system shifted from the reticular to the neuronal, from a model that focused on materiality to one that focused on space and the relationship between material units. Viewed in this light, the conflict in James’s explanation of consciousness is really between two incompatible interpretations of the nervous system.

This conflict also lies at the heart of Stein’s early writing, eventually leading to a theory of “bottom natures” and a theory of composition that are fundamentally incompatible. While Stein’s search for an individual’s bottom nature depends on the revelation of a fixed character through habitual repetition, and, implicitly, on fixed patterns of nervous transmission and inheritance, Stein’s later focus on grammar relies on connecting the objects of experience and language into a complete, but fluid, description of character. Stein begins her career, in works such as *The Making of Americans* (written between 1906 and 1908 but not published until 1925), with a belief that the self is composed of the material objects of the nervous system. By *Tender Buttons* (1914), however, she has become aware how much the self is created or “composed” by a fluctuating system of relations imposed from within and without. Ultimately, Stein’s work attempts—and, I think, fails—to reconcile a pre-modern positivism that purports to predict and categorize human nature with a post-modern

interrogation of the cognitive processes that compose the self and the grammatical relations that compose language.

Indeed, James' view of the self underwent a transformation that was comparable, and concurrent, with the modernization of neuroscience provided by neuron theory. He similarly left behind the notion of a self intimately tied to brain structure and instead viewed consciousness as a relation between concrete entities, a connective synapse between moments of experience. Once viewing both habit and attention as manifestations of a single, connected nervous system, repetitions of behavior that revealed a person's neurological character, James' later work views the self as plastic, composed of the synaptic relations that tie together nervous and mental elements. James' study of psychology and his philosophy of radical empiricism present a conflict between two versions of the self and, as Sutherland notes, Stein was at Radcliffe "during the first and worst of the agitation, before James had really developed his new positions" (5).²¹

In *Principles of Psychology*, James argues that character is largely based on habit, which is in turn determined by "the fundamental properties of matter" (104). It is the plasticity of the nervous system that allows it to simultaneously change and resist change: the nerves undergo minor alterations with the passage of each current, but not enough to change their behavior fundamentally. Despite this capacity for change, James emphasizes that the nerves are a "closed" system, and must follow the principle of equilibrium. As a result, any stimulus entering the system must produce an equal and opposite discharge manifested in either physical or psychological behavior. Within this closed system, the

²¹ It will become apparent that I disagree with Sutherland's claim that any connection between Stein's work and James' is "absurd" because of James' attempts to provoke "his students to do their own thinking and insisting that ultimately one's philosophical beliefs are determined by personal temperament" (5). It is certainly significant that Stein encountered both versions of James' thought, and that Stein's psychology teacher and mentor was grappling with the limits of psychological research.

nervous system does not modulate meaning but channels impulses to control movement and determine behavior by varying degrees of resistance. James describes the nervous system using the analogy of a “drainage channel”:

For the entire nervous system is nothing but a system of paths between a sensory *terminus a quo* and a muscular, glandular, and other *terminus ad quem*. A path once traversed by a nerve current might be expected to follow the law of most of the paths we know, and to be scooped out and made more permeable than before (108).

It follows, then, that repeated currents through a nerve decrease its resistance, “scooping” out paths to allow currents to flow more easily. Because any current chooses the path of least resistance, this scooping action also increases the probability that a current will flow through a particular pathway and, consequently, increases the probability of the behavior associated with that nervous pathway. Significantly, James limits the ability of currents to produce meaning, claiming that “the only thing they [the currents] *can* do, in short, is to deepen old paths or to make new ones” (107). The nervous system does not develop new pathways but is only a mediator between “a sensory *terminus a quo* and a muscular, glandular, or other *terminus ad quem*,” reflecting the larger function of habit to “simplif[y] the movements achieve to reach a given result” (112). While James uses the properties of matter to explain how pre-arranged or “given” paths might be “deepened,” his explanation of how new paths (and thus new actions and ideas) might be created is less clear. A complete understanding of how new nervous pathways might be created requires a complete understanding of James’ description of “attention,” but the more one understands attention, the more one questions whether James’ nervous system can ever generate anything “new.”

In contrast to habit, which allows an individual to react to stimuli unconsciously, attention involves a conscious selection of stimuli from the individual’s environment. The primary function of habit is to reduce conscious attention, freeing the mind from attending to

mundane activities and allowing space for higher thought. To illustrate the role of habit, James compares a concert pianist, whose actions are dictated by habit, with a beginning student, who must think before striking each key.²² For the concert pianist, the initiation of each note is occasioned by the muscular contraction that preceded it—striking one note initiates the next—but for the student there is space between each note for thought to insert itself, causing mistakes and hesitation. Habit is a property of matter, but attention operates in the spaces between matter to bring unconscious mental activity to the level of consciousness. Such changes in habit require will or mental effort; James writes that attention pushes the stream of thought against the current and, as a result, works to

deepen and prolong the stay in consciousness of innumerable ideas which else would fade more quickly away. The delay thus gained might not be more than a second in duration—but that second might be critical (453).

Although James includes space in his system, anticipating his later model of consciousness based on relational intervals, these examples confuse change with choice. An act of attention serves only to break old habits or initiate new ones, operating within the closed system of the nerves and the “innumerable” pathways it contains and determining “whether one system shall gain force to occupy the field and develop itself, and exclude the other, or be excluded by the other” (453).

In this model, James only provisionally allows for the state of extreme plasticity that might be called “free will,” and is willing to acknowledge that even attention might be an artifact of the material nervous system, a cognitive effect of abnormal processes. As he notes, habit constantly diminishes the amount of attention required when performing acts, closing the spaces in the nervous system. Indeed, it could be argued that the spaces in James’

²² James borrows the example of the piano from William Carpenter’s *Principles of Mental Physiology* (1874), a work he quotes extensively in the chapter on “Habit.”

nervous system are illusory, providing a choice between the pre-existing pathways that define a person's "character." As Norman Weinstein notes, Stein borrowed from James a definition of character that views "the personality in terms of a fixed nature, a central 'core' subject to alteration by experience, but only subject to change within the limitation imposed by the entire character structure" (14). This central core, closely associated with a centralized network of nerves, determines a person's behavior throughout his or her lifetime. In the early work of both James and Stein, experience does not shape character, but is shaped by it.

Despite the addition of attention to James' psychology, which seems to introduce the promise of will and choice, James' early theory of character is ultimately determined by the network of nerve channels that produces habitual and stereotyped behaviors. For James, attention always operates within a network of pre-existing hardened pathways, a network that determines the range of habits that an individual will display during a lifetime. As a consequence, James views habit as largely conservative, calling it "the enormous fly-wheel of society, its most precious conservative agent" (121). In a famous passage, James speaks of the role of habit in society, implying that nervous structure and environment combine to create the American class system:

It alone is what keeps us all within the bounds of ordinance, and saves the children of fortune from the envious uprisings of the poor. It alone prevents the hardest and most repulsive walks of life from being deserted by those brought up to tread therein. It keeps the fisherman and the deck-hand at sea through the winter; it holds the miner in his darkness, and nails the countryman to his log-cabin and his lonely farm through all the months of snow; it protects us from invasion by the natives of the desert and the frozen zone. It dooms us all to fight out the battle of life upon the lines of our nurture or our early choice, and to make the best of a pursuit that disagrees, because there is no other for which we are fitted, and it is too late to begin again. It keeps different social strata from mixing (121).

To a twentieth-century reader, the passage is troubling not only because of James' use of psychology to justify an American caste system, but also because of his implication that such behaviors are unconscious—that the most “repulsive” conditions are tolerated without a thought by the lower classes. By conflating the battle lines of class warfare with nerve pathways, the “lines of our nurture of early choice,” James naturalizes economic exploitation. As Liesl Olson notes, James' industrial metaphor (the flywheel moderates the speed of machinery) both mechanizes and dehumanizes the working class; James' glorification of order and stability is thus “unabashedly elitist” (333). Just as James' emphasis on the limited plasticity of the material nerves prohibits real change, his identification of character with a fixed nerve network denies personal growth or social mobility.

Almost a decade later, when James began to shape his philosophy of radical empiricism in earnest, the ability of a system to grow and change became a major focus of his work. In contrast to his physiological interpretation of character, which works to eliminate the attentional spaces within habits, James' later work emphasizes the importance of process and connection. In his book on Stein, Steven Meyer suggests that the major contribution of James' radical empiricism to philosophy was its premise that not only facts, but also the relation between facts, should be studied empirically (12). In contrast to the fixed pathways of habit, James later viewed the material objects of the universe and the nervous system as “chaotic,” achieving order and meaning only through the “conjunctive relations” that join these objects together. Radical empiricism thus recognizes both unity and disconnection, dismissing any fictional abstraction that claims to unify experience, but also claiming that disconnection itself is a fiction. James suggests that that spaces or relations between experiences are themselves objects of experience:

What I do feel simply when a later moment of my experience succeeds an earlier one is that tho[sic] they are two moments, the transition from the one to the other is *continuous*. Continuity here is a definite sort of experience; just as definite as is the *discontinuity-experience* (“A World of Pure Experience” 25).

Although the subject-matter is the philosophical connection of experience, rather than the physiological connection of nerves, James’ argument is fundamentally the same as that of Wilhelm His: unity does not necessitate continuity. Both argue for a form of contiguity, suggesting that the objects of experience or the material objects of nerve function are *structurally* discontinuous, but are connected by transitive spaces that make them *functionally* continuous.

Because James’ doctrine of radical empiricism was inextricable from his doctrine of pragmatism, it required, if not a reversal, at least a revision of his earlier materialist tendencies. Simply put (admittedly too simply), such pragmatists as C.S. Peirce, John Dewey, George Herbert Mead, and James sought to elevate effect over cause, proposing that the truth or validity of any causal principle cannot and should not be evaluated independently of its effect. As a result, James’ earlier assertion that nerve networks can produce only fixed effects, rigidly repeated habits, is questioned by the fluidity and diversity of activity. Rather than viewing these anomalous behaviors as outliers, isolated acts of attention in a largely fixed system, James now considered that the complexity of behavior might indicate a definition of character much more plastic, taking into account both material nerves and the immaterial relations between them. This new direction in James’ thinking was supported by the discoveries of Forel, His, and Cajal; in his 1904 address to the American Psychological Association, later reprinted as “The Experience of Activity,” James reveals his knowledge of neuron theory, suggesting that the nerves use chemical messages to communicate across

space: “my brain-cells are believed to excite each other from next to next (by *contiguous* transmission of katabolic action...)” (88, italics added).

As James notes later in “The Experience of Activity,” the new spaces in the nervous system make their results less predictable, and make them a less reliable predictor of surface behavior:

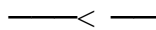
The activity of a nerve-cell must be conceived of as a tendency of exceedingly short reach, an ‘impulse’ barely spanning the way to the next cell—for surely that amount of actual ‘process’ must be experienced by the cells if what happens between them is to deserve the name of activity at all. But here again the gross resultant, as I perceive it, is indifferent to the agents, and neither wished nor willed or foreseen. Their being agents now congruous with my will gives me no guarantee that like results will recur again from their activity. In point of fact, all sorts of other results do occur (90).

When individual neurons are isolated, the activity of each unit has an “exceedingly short reach,” and cannot cohere into a stable structure called “human nature” or “the self.” Under the lens of James’ pragmatism, the fact that behavior (the “gross resultant” of nervous action) is often “indifferent” to the nervous agents that initiated it drives a wedge between physiological causes and behavioral effects. Removing habit, the link between structure and behavior, forces James to seek new connective links to unify the self. Unlike habit, these new links are not located within the physical nerves, but in the various internal and external “conjunctive relations” that connect the isolated objects of experience.

In a larger sense, however, habit is still alive and well in James’ system. Once a material property of the nerves, habit re-emerges more abstractly as a property of conjunctive relations. In a “world of pure experience” where all relations are possible, the only way to determine real or true relations is by their repetition and reliability, their “stubbornness” or tendency to “cohere.” Viewing isolated moments of experience in relation to other experiences by the self and others provides a test of the real, allowing some relations to

harden into truth and other to “loosen,” exposing their fictional nature (12). Nowhere is this more important than in the evaluation of entity called “the self,” for it is only by means of observation through time—either by self-awareness of the stream of consciousness or by the repeated observation of the self by another—that the real content or nature of the self can be separated from the fictional. Significantly, this change in the definition of habit means that the nature of this self can be revealed only to an outsider, requiring either a dissociated aspect of consciousness or an outside observer to tie the moments of experience into a coherent character.

Although the function of repetition remained constant between James’ *Principles of Psychology* and *Essays in Radical Empiricism*, the quality of repetition underwent an important change. Where once the self was revealed by the habitual repetition of *behavior* of the individual, it is now revealed through repeated *observation* by another self or consciousness. The relatively fixed sense of self supplied by habit has been replaced by a self that is more fluid, changing in the face of new experiences or even under the gaze of a new observer. As will become clear, the difference between these two types of repetition is crucial to an understanding of Stein’s work. If the formal evolution of Stein’s work can be traced (as George B. Moore argues) from the first type of repetition to the second, the thematic struggles Stein faced resulted from her unwillingness to abandon the static sense of self, the “bottom nature,” supplied by fixed nervous networks.



The connections between James and Stein have often been discussed, but critics rarely consider which version of James’ philosophy Stein encountered. The year Stein arrived at the Harvard annex, 1893, placed her in the middle of James’ transition from

psychologist to radical empiricist. She was given James' *Principles of Psychology* as a textbook in Hugo Münsterberg's course, but she also studied directly under James in his psychological laboratory and in a year-long seminar on topics such as "consciousness" and "the relation of the mind and body" (Wagner-Martin 34-5). As evidenced by his 1897 lecture, "The Will to Believe," James was already on the path towards pragmatism and radical empiricism when Stein took his courses, placing her in contact with him during a significant transition in his thinking.²³ James was moving from a description of the self largely determined by the material "nature" of the nervous system to a description of the self emphasizing the relation between experiences and downplaying the physiological causes of behavior. As I have shown, this shift in focus from nervous structure to spatial relations within the structure parallels the transition in neuroscience between reticular and neuron theory. Interestingly, Stein's own psychological publications seem to move in the opposite direction as she became increasingly intent on classifying people into fixed neurological "types."

The significance of Stein's early psychological publications have been acknowledged by most readers of Stein's work (including hostile readers like B.F. Skinner), and have been discussed at length elsewhere.²⁴ Rather than attempting to explain their implications in Stein's literary writings fully, I want to trace a general trend in Stein's thought that seems to

²³ For a discussion of James' "The Will to Believe" and his understanding of belief in relation to Stein's work, see Stephanie L. Hawkins, "The Science of Superstition: Gertrude Stein, William James, and the Formation of Belief" *Modern Fiction Studies* 51.1 (Spring 2005): 60-86.

²⁴ The first criticism to connect Stein's experimental psychology and her experimental writing (after Stein herself in "The Gradual Making of *The Making of Americans*") was B.F. Skinner. Skinner's article, "Has Gertrude Stein a Secret?" argued that Stein practiced a form of automatic writing that she had learned in her experiments on automatism. The earliest and most influential book-length studies of Stein's work, critical biographies by Donald Sutherland *Gertrude Stein: A Biography of Her Work* (1951) Elisabeth Sprigge *Gertrude Stein: Her Life and Work* (1957), place great significance on Stein's experiments in attention. Other important works such as Richard Bridgman's *Gertrude Stein in Pieces* (1970), Allegra Stewart's *Gertrude Stein and the Present* (1967) and Norman Weinstein's *Gertrude Stein and the Literature of Modern Consciousness* (1970) all base their arguments on Stein's special knowledge of consciousness and attention.

begin with an extra-material conception of consciousness—what Stein called “xtra” consciousness— and end with the kind of rigid materialism that initially informs *The Making of Americans*. Stein’s first publication, “Normal Motor Automatism” (1896), sets out to demonstrate that consciousness can exist outside the “habitual brain paths” of the nervous system. Through a series of experiments, Stein and her co-author, graduate student Leon Solomons, showed that a distracted individual can perform a number of activities automatically, without the intervention of consciousness but with awareness of the body’s activity. Traditionally considered a pathological condition, the “splitting of personality” is shown by Stein and Solomons to be a normal function of the attention. Barbara Will suggests that these experiments shaped Stein’s notion of genius, defining a dialectic between the “talking” self and the “listening” self that lies at the center of Stein’s aesthetic. According to Will, “Stein begins ‘knowing’ that she is a ‘genius’ at a moment in which she begins to think of herself less as a bounded ‘self’ and more as a processual[sic] and relational ‘being’ emerging in and through textual practice” (8). With an emphasis on processes and relations, coupled with a view that the self “is not singular and unified by but radically fragmented and dispersed,” Will’s interpretation of Stein’s first publication reveals its close affinity to James’ radical empiricism (8). Like James, Stein viewed the self as a set of isolated experiences and interactions united by a dissociated “xtra consciousness” or a perceptive genius with an attentive listening ear.

Will explains that Stein’s identification of genius with extra consciousness reflects her role as an outsider, insidiously exploiting the chinks in modernism’s armor. Will describes Stein as one who was always “alive to the elisions and gaps of signification” within the dominant tradition (11). It is altogether fitting, then, that Stein’s later work foregrounds

these elisions and gaps, operating through an awareness of grammatical objects and space: the relations between the words on the page, the relations between objects and the ideas that compose them, and, ultimately, the relations between such genres as poetry, prose, and drama. This type of thinking reveals Stein's indebtedness to James' radical empiricism, but also her encounters with modern neuroscience through James and, more importantly, through her medical studies and her scientific work with Lewellys Barker. In his excellent study of Stein's psychological and neurological work, Steven Meyer argues that Stein "substituted writing processes (and more generally procedures of expression) for brain processes understood on the model of the reductionist physiology of the day," transferring her attention to the writing from the information conveyed to the reader (252). As Meyer observes, this writing process, which emphasized the relational space between consciousness (experiential moments) and language (grammatical objects) reflects the neurophysiology of Stein's era. Thus, "Normal Motor Automatism" contains not only the seeds of James' radical empiricism (unsurprising because James himself suggested and directed the experiments) but also the seeds of ideas about grammar and identity that would not fully emerge in Stein's work until two decades later with the publication of *Portraits and Tender Buttons*.

Strangely, this relational understanding of the self, which became so important to Stein's writing, seemed largely uninteresting to Stein in her psychological studies. In her follow-up publication, "Cultivated Motor Automatism: A Study of Character in Relation to Attention" (1898) Stein rejects this dialectal conception of the self. While purporting to expand the experiment begun in her first publication, using the same basic techniques on a

larger pool of subjects, Stein quickly abandoned her initial purpose.²⁵ As Stein would later note, “I was supposed to be interested in their reactions but soon I found that I was not but instead that I was enormously interested in the types of their characters in them that is what I even then thought of as the bottom nature in them” (“The Gradual Making of *The Making of Americans*” 137). Instead of studying the automatic behavior of her subjects under various types of distraction, as she had in “Normal Motor Automatism,” Stein abandons this project (and, one could argue, any gesture towards empirical science) to categorize her subjects based on their overall patterns of response. According to Stein’s categorization, no response stood in isolation, but was instead a reflection of an individual’s “type,” a single expression of the “bottom nature” that determined one’s pattern of attention and behavior.

In the first experiment, attention represented a higher or extra consciousness, the “genius” that listened and brought meaningless automatic activity into a meaningful understanding of the self. In this second publication, Stein reduces the status of attention, making it a component of the fixed character or bottom nature of the individual: “In these descriptions it will be readily observed that habits of attention are reflexes of the complete character of the individual, and again that habits of attention are dependent on the different forms and degrees of automatic writing” (“Cultivated Motor Automatism” 299). Even more explicitly than James, Stein affirms that habits of behavior and attention emerge from a “complete character” and that reflexes are isolated expressions of an individual’s entire “nervous” nature. Weinstein explains that, even more than James, Stein “accepts the idea of characterology,” which “implies that those elements most central to the character structure vary little if all during the person’s lifetime” and “underplays the significance of experience

²⁵ Both Steven Meyer and Linda Wagner-Martin note that the first article was written and directed almost entirely by Leon Solomons, which may account for the difference in Stein’s scientific approach in the second article. See Meyer pages 224-5 and Wagner-Martin pages 35-6.

in shaping character” (14). From this belief in a unified character comes Stein’s conviction that repeated habits or reflexes can reveal a person’s bottom nature; each slight variation of habit exposes a new section, a new manifestation of a single nervous network always repeating the same basic message. As she explains,

I then began again to think about the bottom nature in people, I began to get enormously interested in hearing how everybody said the same thing over and over again with infinite variations... not so much by the actual words they said or the thoughts they had but by the movement of their thoughts and words endlessly the same and endlessly different” (“The Gradual Making” 138).

Stein’s psychological work (but not her neurological work, it is important to note) ends where James’ begins, with a single-minded emphasis on habit and its capacity to reveal an essentially fixed character. Perhaps more importantly, the ending of Stein’s work in psychology marks the beginning of her literary career, a beginning that likewise used repetition to reveal a character’s “bottom nature.”

As in “Cultivated Motor Automatism,” Stein’s objective in *The Making of Americans* quickly transforms from providing a “history...of a family and its progress” to providing “a history of all women and all men, of all the men and all the women, of every one of them, of the mixtures in them of the bottom nature and other natures in them” (*MA* 4, 176). The first, more modest, goal hinges on two types of repetition: the habitual repetition of behavior that reveals an individual’s “bottom nature” and the genealogical repetition of character from generation to generation.²⁶ As Stein becomes more ambitious, seeking to tell the story of all Americans and not just the two families she isolates for study, a third type of repetition

²⁶ In “Gertrude Stein’s Brain Work,” *American Literature* 76.1 (March 2004): 117-148, Maria Farland connects Stein’s studies at Johns Hopkins and her interest in descent and inheritance in *The Making of Americans* to the nineteenth-century interest in ethnology and heredity. According to Farland, Stein’s work incorporates and challenges the sex-linked taxonomy that underpins the study of heredity, arguing that *The Making of Americans* “involves two contrasting and sex-specific approaches—the self conceived as a product of heredity versus the self understood within the matrix of a potentially infinite taxonomic system of all conceivable types of individuals” (128). For more on Stein and ethnology, see Daylanne English “Gertrude Stein and the Politics of Literary-Medical Experimentation” *Literature and Medicine* 16.2 (1997): 188-209.

becomes necessary. This type of repetition, drawing directly from Stein's later psychological studies, follows the premise that human nature might be reduced to a few fixed types:

There are many ways of being a man, there are many millions of each kind of them, more and more in ones living they are there repeating themselves around one, every one of them in his own way being the kind of man he has in him, and there are always many millions made just like each one of them (*MA* 115).²⁷

Moore argues that the form of Stein's repetition follows a clear trajectory, beginning with a style (the "prolonged present") that extrapolates being from simple repeated actions and ending with a style (the "continuous present") that uses repetition to capture the contingency or fragmentation of being (8-9). In a sense, however, the simple repetition of the prolonged present is already fragmented between the habitual and the genealogical, and early in *The Making of Americans* a conflict emerges between the single bottom nature revealed by habit and the mixture of inherited "kinds" that compose that nature. As Stein writes of the Hersland children, "The father and the mother mixed up in them made of each one of them a different kind of being from the others of them this will come out more and more in them if they go on living as in old age they go on repeating what is inside them so that any one can know them" (127).

While the hereditary mixing of minds threatens to undermine Stein's conception of a bottom nature, she still maintains faith in a unified being that is revealed through repetition. As this fixed biological self divides into a series of competing impulses and reflexes, however, Stein is forced to modify her definition of bottom nature. In order to unify behavior into fixed types, Stein posited a unified nervous system in which each action was an expression of the "complete character" of the individual, arguing that "Every one always is

²⁷ Stein's attempt to classify psychology identity was probably also influenced by her reading of Otto Weininger. See Barbara Will *Gertrude Stein, Modernism, and the Problem of "Genius"* pages 58-66 and Linda Wagner-Martin pages 91-94.

repeating the whole of them” (MA 308). If this complete character is a genealogical mixture, Stein must deal with each expression of the self individually, determining which aspects of character assert themselves most frequently: “There are many millions of each kind of men and other kinds of being are mixed up in each one of each kind of them but the strongest thing in each one of them is the bottom in them the kind of being in them that makes them” (MA 136). Once the self is fragmented, Stein must concede that the bottom nature is no longer obvious to “any one,” and must switch from passive description of repetition to active interpretation of character.

The increasing presence of Stein’s self-conscious authorial voice, while a precursor to post-modern narrative anxiety, is thus a natural outgrowth of a very nineteenth-century use of science to classify and explain human nature. Likewise, the increasing fragmentation of being in *The Making of Americans* is a natural result of Stein’s own confidence in repetition as scientific method and literary form. In a discovery that becomes crucial—indeed, foundational—to Stein’s work, she begins to understand that simple repetition cannot exist. When a repeated behavior is interpreted by repeated observations, identity multiplies and changes through time. While Stein keeps faith that bottom nature reveals itself through repetition, she loses faith in her ability to form the repeated fragments into a whole:

Every one is a whole one in me and now a little every one is in fragments inside me. There are a very great many not now in me, mostly every one now is in pieces inside me. Mostly not any one now is a whole one inside me....Perhaps not any one really is a whole one inside them to themselves or to any one. Perhaps every one is in pieces inside them and perhaps every one has not completely in them their own being inside in them. Perhaps each one is in pieces and repeating is coming out of them that is certain but as repeating of pieces in them. Repeating is always coming out of each one that is certain, in all moments of despairing that is certain, that every one always is repeating. That every one always is repeating is a certain thing (MA 519).

Stein's despair results from her failure to transform pieces of isolated observation into "whole ones," leading her to question whether "being" itself might be as fragmented as her perception of it. The increasing use of repetition in Stein's literary style reflects her attempt to reproduce this fragmentation, capturing the changing nature of being by literally reproducing each repetition, each moment and instance of observation. Stein writes in "The Gradual Making of *The Making of Americans*,"

it was natural that in the writing of *The Making of Americans* I had proceeded to enlarge my paragraphs so as to include everything. What else could I do. In fact inevitably I made my sentences and my paragraphs do the same thing, made them be one and the same thing (159).

But like the characters themselves, Stein's writing repeats "endlessly the same and endlessly different." It becomes apparent that Stein's conception of sameness and difference has evolved through the text; once asserting a constant bottom nature repeating through time, it now indicates a fragmentation of being that is new in each moment.

Like James, Stein now views being as a "chaotic" collection of fragments given order by patterns of meaning imposed from the outside. Where once repeated habits were signs of the character that executed them, their significance is a mixture of fact and interpretation reflecting the character of both subject and observer. Stein moves closer to a radical empiricism that evaluates both evidence and the processes of interpretation on the same terms, viewing truth and being as fluid concepts dependent on both material entities and the meaningful relations between them.²⁸ In the middle of *The Making of Americans*, Stein shifts

²⁸ At the same time, Stein increasingly adopts a pragmatist position in which a character's being is intimately tied to the efficacy of their actions. In her description of Alfred Hersland she writes, "He has in him only one kind of being but as I was telling pieces of it get separated off from other pieces of it by not being completely acting, flavors, reactions, by-products get disconnected and keeping on going in him and things get all disarranged in him so that this one is a part of a one in living, the bottom in him resisting and engulfing is not rich or thick or solid or ample or active enough in acting to make a complete being in my feeling in him, and always then that is there as being in him" (589). It could be argued that *The Making of Americans* evolves from a study of being into a study of actions such as "loving," "living" and "succeeding."

from a belief that character is composed of a nervous bottom nature to a belief that character is “composed,” an artful creation by an outside consciousness. As she notes in “Composition as Explanation,” composition is both a thing created in the act of living and a thing seen at a specific moment: “Composition is the thing seen by every one living in the living they are doing” (24). In contrast to the physiological determinism inherent in her theory of types, Stein’s theory of composition allows the individual to “compose” character in the process of living. This character is still seen by “every one” who observes carefully, but Stein acknowledges that the process of seeing is also a process of “composition,” differentiating between “the time *of* the composition and the time *in* the composition” (italics added 522). Stein has left behind the fixed reticular view of the self, based only on the structural composition of the nerves, and moved to a theory of character that considers both nervous structure and the extra-material, synaptic connections within that structure, connections that “compose” fluid patterns of meaning.

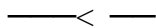
Stein’s changing view of composition is reflected in the change in her writing style in the second half in the novel. Stein’s “beings” and sentences begin to fragment, held together by associative links that become increasingly prominent in her writing. As George Moore notes, “she changes the meaning of ‘being’ to compensate for this new fragmentation of being by suggesting that repeating still manifests ‘being’ but now perhaps only in pieces....What was once the ‘bottom nature’ of an individual has become a less definite set of impressions, essential only by their associations with others’ differences and similarities” (115). While Stein grows more aware of herself as a narrator, making the narrative more personal, the characters in the novel become depersonalized as they are replaced with impersonal pronouns. As Moore’s analysis suggests, once characters are transformed into

stereotyped units, the essence of their “beings” can be revealed only in the spaces between those units, the connective links of association, difference, and similarity. Meaning hinges on the position of these empty nouns within Stein’s syntactical system and the prepositions, conjunctions, and verbs that join that system together: “Everywhere something is done. Everywhere where that this done it is done by some one. Everywhere where the thing that is done by some one comes to be done it is done and done by some one” (920). The repeated functional units of Stein’s language, “everywhere,” “done,” “some one,” are meaningless when removed from the structure of the sentence. Where once these material elements of language revealed “being,” Stein’s change in style reveals that she now views being as a system in which context and association are just as important as the material objects.

Although I argue that Stein increasingly distanced herself from a holistic approach of nervous function—in which the entire network of nerves represented a “bottom nature”—I do not wish to suggest that she abandoned the correlation between material structure and surface behavior. Rather, she replaced a reticular model of the nervous system, which emphasized the material composition of the nerves, with a more radically empiricist (and neuronal model) that described the self as a collection of units joined by connective space. Steven Meyer suggestively explains Stein’s experiments in language as a blend of radical empiricism and neuroanatomy, “studies of exchanges at word junctions and across word membranes, designed to show the ways in which words join together into functional multi-word units” (80).²⁹ As Meyer’s work indicates, this neuronal model revealed not only a way to approach character, connecting individual moments of experience joined in a Jamesian

²⁹ Meyer’s language is borrowed from Jane Maienschein’s article on the history of cell theory, “Cell Theory and Development.” Maienschein points out that “the most serious weakness of the cell theory” is its inability to explain cell-to-cell interaction across membranes (qtd. in Meyer 80).

stream, but also pointed the way towards a new understanding of language.³⁰ For Stein, the spaces or relations between words were never empty, but actively involved in the creation of the work's overall meaning. Meyer argues that during the period from the end of *The Making of Americans* (1908) to *Tender Buttons* (1914) Stein's work began to rely on "'interspaces' that function synaptically as well as syntactically," grammatical forms that contain elided "traces of their compositional landscapes within themselves" (295). It is tempting, following Meyer, to conclude that Stein's work follows a clear trajectory, modernizing itself in a manner parallel with the modernization of the nervous system. While Stein's own comments about her writing suggest such a trajectory, it is important to consider whether or not Stein really abandoned her search for "bottom natures," and whether or not the "traces" of "compositional landscapes" hidden in Stein's writing contain a persistent faith in an underlying essence. This conflict between Stein's own statements about her writing and Meyer's postmodern analysis of her compositional practices raises a fundamental question: is Stein a failed reticularist, playing linguistic games that move her away from the essence of her subject, or a triumphant neuronist, exposing the fragile but all-important spaces within our systems of meaning? Answering this question requires a closer look at Stein's career in medicine and neuroscience.



After William James' insistence that a medical degree would be "particularly helpful in the field of psychology," Stein took her mentor's advice and applied to the Johns Hopkins

³⁰ In her article "Mind, Body and Gertrude Stein," Catherine Stimpson also makes a correlation between Stein's brain work and her experimental writing, arguing that her scientific training "helped her to evolve a modern mimetic literary theory that proclaims the limited possibility of consciousness accurately apprehending the external and internal reality of the historical moment in which it finds itself" (495). Stimpson suggests that Stein's challenge to consciousness exposes problematic "gap" between the increasing intellectual freedom of the female mind and the continued sexual confinement of the female body. See Catharine Stimpson, "Mind, Body, and Gertrude Stein." *Critical Inquiry* 3.3 (Spring 1977): 489-506.

School of Medicine (Schoenberg 251). Although the school was under a mandate to admit female applicants, having received large donations from wealthy Baltimore women eager to see women in the medical field, Stein faced an uphill battle at Johns Hopkins. Stein's perpetual outspokenness and irreverence aggravated her instructors who, despite the donations, were not eager to accept female doctors as colleagues. Despite these obstacles, Stein did well during her first two years in medical school, and seemed especially drawn to the budding field of neuroscience. Stein modeled brain tracts for Dr. Franklin P. Mall and later achieved a considerable degree of success in the laboratory of Dr. Lewellys Barker, where she studied the nucleus of Darkschewitsch. In his seminal textbook, *The Nervous System and its Constituent Neurones* (1899), Barker credits Stein's research and even quotes from his promising protégé directly (a testament to Stein's growing skill in scientific writing):

The nucleus is more or less conical in shape. It lies dorso-medial from the red nucleus, being about as thick in a dorso-ventral direction as the dorso capsule of the red nucleus in which it lies. At this period of medullation the commissural posterior cerebri, considered simply topographically (that is, as a medullated fibre-mass without particular reference to the course of the fibres), appears as a dorso-ventral bundle, solid in the middle, subdivided dorsally into an anterior (proximal) portion and a posterior (distal) portion, while ventrally it expands in the form of a hollow period, which rests directly upon the nucleus of Darkschewitsch (725-6).

Leon Solomons had once complained of Stein's writing style, referring to a draft of "Cultivated Motor Automatism" as "bewildering as a detailed map of a large country on a small scale" (Sprigge 32). In the passage quoted by Barker, however, Stein's detailed description of the connections between brain regions is a strength, creating an accurate picture of the area described and mimicking the detailed connections between neurons and brain tracts in the nucleus.

Barker's textbook made an important contribution to the advancement of neuron theory, outlining the debate between the reticularists and neuronists and presenting insurmountable evidence in support of the neuron doctrine. The textbook synthesized current research as Waldeyer's famous review article had done a few years before, assembling diverse, isolated pieces of research to create a new picture of the nervous system. At Radcliffe, Stein had encountered James during a period of transition and, at Johns Hopkins, Stein entered neuroscience during the birth of neuron theory as scientists were developing ways to understand and map the complex connections between neurons. As evidenced by her language in the Barker textbook, Stein understood the necessity of dealing with neurons and brain tracts as complex systems, recognizing that each segment of the nervous system must be studied in relation to its context. As Stein's career progressed, however, it became clear that she was unable to create models comprehensive enough to capture the intricate connections that defined the structure of the brain. Unlike the passage quoted in Barker's textbook, Stein's visual depictions of brain structures obscured rather than elucidated, becoming overwhelmed by the complexity of the connections Stein attempted to model.

Stein's failure to model brain structures accurately played a small but significant role in her departure from medical school. After a downward spiral that began after her first two years in medical school, it became increasingly apparent that Stein's degree was in jeopardy. In *The Autobiography of Alice B. Toklas*, Stein blamed her falling grades on boredom, describing the last few years at Johns Hopkins as "a difficult situation...it was impossible to apologise and explain to them that she was so bored she could not remember the things that of course the dullest medical student could not forget" (101). When an instructor noted for his hostility toward female students gave Stein a failing grade in his course—significantly, in

obstetrics—it dashed her hopes for a degree. The instructor (Dr. John Whitridge “Bull” Williams) suggested that she could complete a few courses over the summer and earn her degree, but Stein claims to have given him the following, rather tart, assessment of her future as a doctor:

you have no idea how grateful I am to you. I have so much inertia and so little initiative that very possibly if you had not kept me from taking my degree I would have, well, not taken to the practice of medicine, but at any rate to pathological psychology and you don’t know how little I like pathological psychology, and how all medicine bores me (*Autobiography* 102).

In the *Autobiography*, Stein fails to note that she was offered another chance to earn her degree by Franklin Mall, who was impressed with Stein’s work in the research lab. In her early biography of Stein, Elizabeth Sprigge relates a story told by one of Stein’s colleagues in medical school that suggests Stein was far more interested in earning her degree than her (probably fictional) reply to Dr. Williams indicates. According to Dorothy Reed Mendenhall, Mall gave Stein the task of making a model of an embryo human brain, hoping to “make the medical faculty change their mind.” Florence Sabin, who was known for her skill in creating detailed and accurate anatomical drawings of the brain, was presented with Stein’s model for evaluation. Sabin “spent hours working over the model and concluded that Gertrude had bent the spinal cord under the head of the embryo so that every section contained cells of the cerebral cortex and of the cord, so that the reconstruction was fantastic.” After listening to Sabin’s explanation, Mall “chucked the entire model into the wastebasket” (Mendenhall qtd. in Sprigge 40).

Although Stein’s career as a physician was effectively over, she was still reluctant to abandon the sciences, a field in which she had shown great promise. Stein used her connections to secure a position in Lewellys Barker’s laboratory and again impressed her

colleagues with her skill as a scientific researcher. However, when attempting to publish her research, Stein was again faced with the problem of translating her knowledge into accurate models of brain structure. Despite the best efforts of Barker, Stein's article was rejected from the *American Journal of Anatomy*, and the editor complained of figures that failed "to relate the structures described in the setting drawn for them" (qtd in Schoenberg 254). Even Barker himself acknowledged the "rough diagrams" and conceded that Stein's data "seem[ed] inadequately represented in the sketches" (qtd. in Schoenberg 257). Steven Meyer defends Stein's drawings, pointing to her desire to describe both structure and context, making three-dimensional figures that showed "the region's *interconnectedness*, its existence *as a region* rather than a set of interlocking structures" (96).³¹ The fact remains, however, that Stein failed to create images that clearly represented the "interconnectedness" she understood as fundamental to the region, leading Knowler and the *American Journal of Anatomy* (and later Mall and the *Journal of Anatomy*) to reject her findings and effectively end Stein's career in the sciences. As was the case in medical school, Stein failed because she was unable to translate her understanding of the brain to her audience, presenting connections that appeared "fantastic" because of their abnormal connectivity. In both cases, Dr. Franklin Mall, an observer sympathetic to Stein's work who recognized her skill in the laboratory, looked at Stein's representations and saw, not a new understanding of the brain, but failure.

Meyer characterizes Stein's neurological work as "deliberate error," giving Stein a privileged position as an outsider unwilling to accept the formal constraints imposed on scientific experimentation and modeling. By calling Stein's errors "deliberate," Meyer

³¹ Stein responded to Knowler's criticism by claiming that he "is not a good judge of this matter because he does not "know the region and its confusion" (qtd. in Schoenberg 256). Meyer claims that Stein's work attempts to depict both an anatomical region and the confused system of tracts around that region.

protects Stein's status as a "genius," evaluating her based on her self-defined goals (in texts such as *The Autobiography of Alice B. Toklas*) rather than the acknowledged goals of the discipline. By carefully distinguishing "deliberate error" from "deliberate failure," Meyer allows Stein to succeed on her own terms and favors Stein's own stated intentions over the collective opinion of the scientific community. Likewise, Meyers' employment of "deliberate error" to describe both Stein's scientific and literary experimentation continues a critical history that has consistently placed Stein on the fringes of modernism. The origin of this critical history is, of course, Stein herself, who used works such as *Lectures in America* and *The Autobiography of Alice B. Toklas* to explain the development of her genius and to give her corpus a coherent trajectory. In these works, Stein uses "deliberate error" to characterize her encounters with psychology, medicine, and science, telling stories that have been elevated to the status of myth: her refusal to take William James's philosophy final because she wasn't in the mood (still earning the highest mark) and her departure from medical school because of boredom (ending with the triumphant statement to Dr. Williams quoted earlier).

Significantly, however, neither of these stories proves entirely accurate. Linda Wagner-Martin notes that Stein actually earned a C on the examination she left blank (although earning an A for the course) and Meyer himself admits that the exchange with Williams "probably represents what in 1932 Stein believed she should have said to Williams thirty years before" (84). In truth, Stein was making her failures seem deliberate, carefully exempting herself from judgment by the communities that rejected her. As she was explaining her aesthetic goals, Stein was also limiting critical discourse about her work and defining the standards by which it should be evaluated. When Meyer concedes that Stein's

neuroanatomical work looks like failure “when measured against an anatomical yardstick,” he is consciously distinguishing the “anatomical yardstick” of scientists such as Knowler, Barker, and Mall from Stein’s (and his) own standard of measurement. Such a yardstick—perhaps it could be called a “post-modern yardstick”—views Stein’s work as a challenge to the fundamental properties of language in a way later articulated by such philosophers as Ludwig Wittgenstein and Jacques Derrida. By these standards, Stein is ahead of her time, committing grammatical errors (essentially errors in syntactic context and semantic connection) that expose the weak points in our understanding of language, the brain, and the world at large.

As a way of conclusion, I would like to consider the implications of viewing Stein’s work as non-deliberate failure instead of deliberate error. Like Meyer, I use Stein’s neuroscientific and medical career as a microcosm of her career as a whole, proposing that the questions at the center of her research—the questions of connectivity and structure—never left Stein’s work. Unlike Meyer, I want to suggest that Stein *did* fail to represent connections she understood to exist, becoming increasingly focused on surface connections at the expense of the deeper connections she originally sought to explain and expose. As Stein increasingly favored grammatical connections between words over the psychological and ideational connections that create signification, her search for the “bottom nature” of the world was replaced with an incomprehensible and endless play of surfaces. Consequently, the real differences between people, objects, and landscapes disappeared as Stein’s language games made everything appear similar, even genres as different as prose, poetry, and drama. Despite the collapsing of these differences, Stein remained committed to the psychological and typological goals that initiated the project of *The Making of Americans*. Stein’s work,

then, is a continual conflict between a nineteenth-century “reticular” essentialism and a twentieth-century “neuronal” recognition that these essences are composed of plastic and contextual connections. Stein later emphasized the importance of her grammatical play with the plastic and contextual spaces between words only to de-emphasize the failure of her work to achieve its central goal: the description of the “bottom nature” of people and the objects they encounter.

To understand how Stein came to embrace conflicting aesthetic goals—the revelation of essential character and the deformation and revaluation of language—one needs only to trace the evolution of *The Making of Americans*. The final section of Stein’s novel display a gradual increase in authorial presence, a depersonalization of her subjects caused by an increased use of pronouns, and a emphasis on the connective structures of language. But while the form of Stein’s novel changes, her goal remains a complete description of the psychological character of two families, a fact that makes the chapter titles (named after central characters) increasingly discordant and misleading. Despite the evolution in Stein’s style from *Three Lives* (written from 1905-1906 and published in 1909) to the portraits written around the time *Tender Buttons* (1914) was published, her objective remains the same whether she is describing Melanctha or Mabel Dodge and, I would argue, whether she is describing roast beef or the American South. In her book on Stein, *Gertrude Stein: From Three Lives to Tender Buttons*, Jayne Walker argues that Stein’s “desire to reinvent literary realism” eventually led to “her brilliantly subversive demonstration of the unbreachable gulf that separates the chaotic plentitude of the sensory world from the arbitrary order of language” (ix). In other words, Stein creates an ever widening distance between the

essential connections that define the sensory world (people, objects, and landscapes) and the grammatical connections that describe them.

The result of this gap between signifier and signified is that the objects of Stein's perception grow increasingly similar, taking on the character of Stein's authorial voice rather than their individual character. Stein's words no longer reveal any truth about the objects they signify; they reveal only surface connections to other words. In Stein's portraits, this often means that her subject is reduced to bare nominalism, as in "Guillaume Apollinaire":

Give know or pin ware.
Fancy teeth, gas strips.
Elbow elect, sour stout pore, pore Caesar, pour state at.
Leave eye lessons I. Leave I. Lessons I. Leave I lessons, I.
(*Writings 1903-1932* 385)

In her excellent study of Stein, Ulla Dydo does most of the heavy lifting in interpreting Stein's poem, revealing its extensive punning on French and English nouns (English "lessons" echoes the French *laissons* and *leçons*), its blurring of parts of speech (the English nouns "pore" and "pour" bringing to mind the French preposition *pour*), and its intentional confusion of spatial connections ("pour state at" could be read *pour l'état*). Dydo argues that "Stein plays endlessly, but always with a purpose and always with her subject in her eye and ear" (279). However, Dydo's own analysis suggests that it is primarily Guillaume Apollinaire's *name* that Stein keeps in her ear, a name that appears in the poem in the first line, "Give Known or pin ware" and also in "Caesar," which leads from the Latin Caesar to the German Kaiser to Apollinaire's birth name, Wilhelm. A generous critic might suggest that Stein's blurring of French, German, and Italian/Latin represents Apollinaire's ambiguous nationality: born in Italy to a Polish mother before immigrating to France. Likewise, Stein's play with formal spaces and transmutation and repetition of phrases or "planes" ("Leave I.

Lessons I”) could be an homage to Apollinaire’s literary cubism and the kind of typographical experimentation found in his *Calligrammes* (1918). Yet if such biographical connections exist, encapsulating the essence of Apollinaire’s life and work in the poem, they are subordinated to grammatical connections. Stein’s play with punning, grammar, and syntax highlights the connective links of language, but Stein can incorporate her subject into this play only by reducing Apollinaire to a word himself, stripping him of psychological and physical identity.

Because Stein’s grammatical play reveals more about her own mental processes than her subject’s, Stein’s portraits tend to look and sound similar. It is not surprising, then, that the portraits of Apollinaire and Picasso, Susie Asado and Mabel Dodge, all express the distinctive genius of Stein much more than the individual genius of her subjects. More surprising, perhaps, is that these portraits of living subjects—new in each moment—are almost indistinguishable from the inanimate objects in *Tender Buttons*:

A dog.

A little monkey goes like a donkey that means to say that means to say that more sighs last goes. Leave with it. A little monkey goes like a donkey (325).

As in Stein’s portrait of Apollinaire, Stein’s emphasis is on the connective space of language: the consonance of “monkey” and “donkey,” the logical links implied by “goes” and “that means to say,” and the blurring of space between words (“last goes” and “lassos”?). In both the case of Apollinaire and the dog, Stein’s status as observer not only highlights the repetition of perception (the object is new in each moment) but also reveals the constant presence of Stein’s distinctive creative genius. As Stein described it in “Composition as Explanation,” *Tender Buttons* builds on the fundamental paradox she discovered in *The Making of Americans* that “everything being alike it was simply different” (27). For Stein,

this paradox meant that the only way to show the essential integrity of people and objects, the fact that nothing inside them that is “connectedly different” from their central natures, is to isolate what makes them simply different from all other natures (22). Stein attempts to isolate the “simply different” in the midst of complex similarities.

However, to express this simple difference in *Tender Buttons*, Stein employs a relatively fixed set of syntactical and grammatical devices that foreground the connections between words while blurring the differences between the objects they signify. The logical coherence of sentences and objects gives way to a syntax in which all connections are equally privileged and equally *illogical*. As Susan E. Hawkins explains, Stein “uses the logic of syntax against itself, not so much because she wishes to hide all sense and pleasure from her readers, but because she wishes us to see how arbitrary, how odd and silly our syntax—and hence propensity for logical constructions—frequently is” (122). Stein’s entry for dog may express a logical paradox in the nature of a dog’s behavior, which is, as Sonja Samberger notes, sometimes playful like a monkey and sometimes stubborn as a donkey. Following this reading, the dog’s behavior logically implies (“means to say”) that the unfortunate leash carrier, who “last goes” and lassos, “sighs” with frustration. This logical meaning of Stein’s poem, which is intended to describe the individual essence of “a dog,” is obscured by non-logical connections of sound and syntax that make the dog superficially similar to all other people and objects.

In the case of *Tender Buttons*, such wordplay has been retrospectively viewed as “deliberate error” by those seeking to appropriate Stein’s work for post-modernism. According to these readings, Stein’s attack on logic and grammar, an attack located in a text ostensibly intending definition and explication, exposes the fundamental shortcomings of

language and the fluid nature of identity. Neil Schmitz argues that Stein's *Tender Buttons* shows remarkable "prescience," viewing in 1914 the "blind alley" of modern narrative later described by post-modern novelists such as Barth and Beckett (1217). For Schmitz, *Tender Buttons* depicts a mode of perception in which reality, meaning and truth are constantly changing, pressing "against the order of language those elements of syntax and signification that provide philosophical and scientific discourse with its stability" (1206). Schmitz is not alone in describing Stein's views on language as prescient of post-modern theory. Shari Benstock claims that Stein "arrived at readings of language that have more recently been attributed to deconstructionist thought" and "anticipated all the ways in which the sign could block rather than reveal meaning" (186). Because Stein's work challenges the foundations of modernism, "the equation between sign and substance, form and meaning," Benstock and Schmitz both argue that Stein cannot be judged against the same patriarchy her language critiques (Benstock 186). Although recent critics have questioned whether placing Stein ahead of, or outside of, the dominant strain of modernism isn't just another form of marginalization, she continues to be removed from the historical context in which her ideas developed.³²

This removal of Stein from modernism, while protecting her from being misjudged as a failed modernist, also seems to misjudge Stein's goals as an artist. To shape Stein into a post-modern author requires the detachment of her grammatical play, the surface connections of language, from its referential content, the deeper connections that form essence or identity. Marianne DeKoven describes Stein's writing as "experimental," positing "principles of literary incoherence or indeterminacy; of 'pluridimensionality' or polysemy" and

³² For a criticism of readings that place Stein "outside" of modernism, see Nicola Pritchard "Unlikely Modernism, Unlikely Postmodernism: Stein's *Tender Buttons*" *American Literary History* 11.4 (Winter 1999): 642-667.

“attack[ing] “the cultural hegemony of sense, order linearity, unitary coherence” (7). In this view, Stein’s work abandons “referential content” as it plays upon the surface; it “not only undermines or fragments coherent meaning, it also subordinates meaning altogether to the linguistic surface, the signified to the signifier” (11). Just as Meyer casts Stein’s error (if not her failure) to reproduce accurate depictions of nervous structure as deliberate, emphasizing the prescience of her artistic connections while downplaying the unintelligibility of the brain connections they are supposed to model, DeKoven and other recent critics of Stein foreground the grammatical surface while deliberately ignoring its referential failure.

Such descriptions of Stein’s experiments, both scientific and literary experiments, fail to acknowledge a conflict at the center of Stein’s work, a conflict between surface play and the essential structures that play is intended to reveal, a post-modern challenge to representation and a nineteenth-century desire to describe, explain, and classify. Even DeKoven writes that Stein “elaborates two central, contradictory threads of argument,” a conflict between pure play and “composition” that drives her texts to “both renounce the world and embody the deepest nature, the essence, of its cultural moment” (24).

It is revealing that Stein, when asked to provide her own reading of “A Dog” in “A Transatlantic Interview—1946,” focuses solely on the mimetic achievement of her language: “That was an effort to illustrate the movement of a donkey going up a hill, you can see it plainly. ‘A little monkey goes like a donkey.’ An effort to make the movement of a donkey, and so the picture hangs complete” (24). Stein’s work is revolutionary in its recognition that all attempts to describe a psychological “bottom” or essential truth must be communicated through grammatical objects and linguistic structures that are far from transparent. As William Carlos Williams would later claim, all ideas must come through

things, the concrete neurons that connect to form the abstract “mind,” the objects that together compose the phenomenal world, as well as the words and spaces that combine to form a poem’s meaning.

To call Stein’s work a glorification of things without underlying ideas, a deliberate error that circumvents communication and meanings, does not do justice to her lifelong attempt to capture the fundamental but ever-changing essence of the world around her. However, to acknowledge the importance of “bottom natures” in Stein’s writing—whether they be the psychological and genealogical drives that govern personality or the sensory and conceptual structures that define “coffee”—would also be to question the success of Stein’s representational efforts.

Unlike William Carlos Williams, Stein fails to maintain a balance between ideas and things, challenging our understanding of surface structure while increasingly obscuring the deeper structures her work seeks to uncover. While Stein understood that modern poetry, like the modern nervous system, must be composed of a complex system of objects and space, Stein’s attempts to capture that system privilege grammatical connections at the expense of the connections that join “things” into “ideas.” Ultimately, Stein’s work in psychology, medicine, science, and literature reveal the *non-deliberate failure* of a genius who understood the system of connections that underpins our thought and experience but whose attempt to explain those connections created a grammatical system all its own—detached from the “bottom nature” of the mind and the world it inhabits.

The Mind and the Nervous System: Synaptic Space in the Poetry of William Carlos Williams

“‘For ourselves are we not each of us the center of the universe?’” (*Farmers’ Daughters* 38). Williams’ short story “Mind and Body” (1932) begins with this question from a female character apparently suffering from an imaginary illness. She arrives at the doctor’s office fearing she has cancer, suffering stomach pains and telling a series of stories that all seem to point to a delusional state: a family history that contains “several who have spent their last days in the asylum” (40), a doctor who poisons her with mercury and silver nitrate, and a pet spaniel that cures her of bronchitis. Faced with these details, the reader is willing to accept that her condition is mental rather than physical, that she is truly at the center of a universe that is an elaborate and pathological fiction. Yet this diagnosis is not correct, and it is not the diagnosis Williams’ doctor offers. Instead, the woman is found to have “mucous colitis ...a spasm of the large intestine which stimulates all sorts of illnesses” (47-8). The woman’s mind is not controlling her body, but is rather controlled by the body, the blood and guts being literally the “cause of all her unstable nervous phenomena” (48).

In his essay “The Work of Gertrude Stein” (1930), Williams declared, “an art, writing, must stay art, not seeking to be science, philosophy, history, the humanities, or anything else it has been made to carry in the past” (*Imaginations* 353). Despite Williams’ stance against philosophical poetry, it is difficult to read “Mind and Body” purely as medical drama. Demonstrating the importance of human contact, Williams’ doctor not only allays the woman’s fears about cancer but also restores primacy to the body. In this way, the doctor refutes the woman’s egocentrism, her claim that each mind stands at the center of its own universe. However, the reader should not immediately assume that Williams is rejecting the

existence of the mind, implying that the self exists only as a fragmented collection of organs and cells. I would argue that “Mind and Body” overcomes the simple dualism of its title, offering instead a mind that is always embodied in an interconnected system, a meeting of mind and body vividly expressed by the link between spasming intestines and disturbed mental function.

Because traditional readings of Williams tend to compartmentalize mental and physical functions, they cannot fully appreciate the importance of the embodied mind to his poetry and to his concept of the imagination. Williams wrote in his autobiography, “The reason people marvel at works of art and say: ‘How in Christ’s name did he do it?’— is that they know nothing of the physiology of the nervous system and have never in their experience witnessed the larger processes of the imagination” (123).³³ By viewing mind and body from a physiological perspective, grounding the mental processes of the imagination in the neuronal nervous system, Williams denied traditional divisions between the mental and the physical, the “idea” and the “thing.” Instead, Williams viewed the mind as always composed of a series of elements separated by “synaptic space,” a space that mirrors the action of the synapse: dividing to establish separate identity and function but also allowing communication and connection. Because he understood space as synaptic, Williams’ work challenged and redefined abstract compartmentalizations such as “mind” and “body,” bridging potentially divisive spaces to form new systems of meaning. Williams’ conception of the mind as a system of functional units, a system in which things combine to form ideas, provided the foundation for his aesthetics and supplied the imagination’s power to unite the elements that compose the mind, the world, and the poem.

³³ In his autobiography and elsewhere in his prose, Williams often uses unorthodox grammar and punctuation. Because this usage is largely intentional, I have neither noted nor corrected any apparent errors.

Beginning with J. Hillis Miller's influential study *Poets of Reality* (1965), there has been continuing critical interest in the metaphysics of Williams' poetry. There Miller places Williams at the end of his continuum between Romantic idealism and modernist materialism, representing a position furthest from the all-encompassing subjective mind and closest to the bare facts of reality. Miller praises Williams for his early and complete acceptance of a modernist poetics that renounces the ego, writing that Williams "abandoned the private consciousness, that hollow bubble in the midst of the solidity of the world" (287). Despite Williams' "leap into things," Miller's reading allows the poet a type of transcendence: he argues that Williams' poems exist "in the only realm there is, a space both subjective and objective, a region of copresence in which anywhere is everywhere, and all times are one time" (288). By leaving the space of the mind, Miller contends, Williams entered a decentered space where all objects are equal. Although I agree with Miller's emphasis on the equality of objects and the "copresence" of mind and body, I would argue that he casts aside the creative mind too quickly. In doing so, Miller underestimates the role of the imagination in Williams' work, which seeks always to form these material objects into larger unities. Williams did not abandon "mind" and other abstractions, but changed their definitions by rearranging their objective content. As Bill Brown recently noted in *A Sense of Things* (2003), "'no ideas but in things' doesn't mean no ideas" (1).³⁴

Many critics have followed Miller's materialist reading of Williams' poetry.³⁵ However, beginning with Carl Rapp's *William Carlos Williams and Romantic Idealism*

³⁴ In Brown's reading, Williams' statement suggests that things are receptacles of ideas. Brown thus perpetuates Miller's excessive focus on the material over the mental in Williams' poetry, arguing that Williams shows "a willingness to be satisfied with mere things" (1).

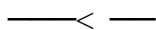
³⁵ For other materialist readings of Williams see Richard Macksey, "A Certainty of Music': Williams' Changes" in *William Carlos Williams: A Collection of Critical Essays* (1966), A.K. Weatherhead, *The Edge of the Image: Marianne Moore, William Carlos Williams, and Some Other Poets* (1967), James Breslin, *William Carlos*

(1984) there have been a number of critical challenges to Miller's conclusions. Rapp sees a strain of Romantic idealism in Williams' poetry, but argues, like Miller, that Williams "does give up his private consciousness or ego, but only because that ego or consciousness has suddenly expanded to a point where it now contains everything within it" (13). Williams' renunciation of the finite self is thus, for Rapp, a means of transcending the body and gaining access to "the whole range of human experience" (16). In *Ideas in Things* (1994), Donald Markos likewise aligns Williams with the Romantic tradition. Markos, however, rejects Rapp's characterization of Williams as a subjective idealist who views reality only as a projection of the ego. According to Markos, Rapp ignores "the importance of things-in-themselves in order to emphasize the priority of the perceiving mind" (26). Markos, then, connects Williams to the objective idealism of Alfred North Whitehead, a philosophy in which "consciousness does not constitute the essence of the world, and yet is an integral part of the world in which perception takes place" (26). In this light, Williams' poetry allowed the immaterial mind and material world to co-exist separately, but bridged the space between the internal and the external through the recognition that "Nature is an index to mind, and both are manifestations of a common source" (27).³⁶ If Miller's argument denies the power of the mind, both Rapp and Markos ignore the presence of the body. These idealist readings view the mind as an abstraction, consisting of something other than the neurons that compose it. Williams—a physician, not a philosopher—always grounded the mind in the physical objects of the body.

Williams: An American Artist (1970), and Joseph N. Riddel, *The Inverted Bell: Modernism and the Counterpoetics of William Carlos Williams* (1974).

³⁶ Another interesting version of this argument can be found in Ron Callan's *William Carlos Williams and Transcendentalism*. Callan describes Williams' poetry as a somewhat uncomfortable marriage between "self" and "Self," a dualism that revolves around the questions: "how lovers can truly love without negating their individual identities, or how the poet can engage his world without manipulating it" (104). Callan's reading achieves a middle ground between Transcendentalism and idealism, showing how Williams might escape the material self without fusing the poetic object and the ego, a process that undermines the object's integrity.

Like the neuroscientists of his time, Williams was content with neither fragmented material things nor an abstract, disembodied mind. Within the emerging fields of psychology and neuroscience it was becoming apparent that the division between body and mind was a philosophical, rather than an anatomical, construct. Because a neuron-based nervous system views the brain as composed of functional units, the manipulation of those elements changes the mind's function and meaning. Similarly, the manipulation of the material objects of the external world, and the grammatical objects of the poem, can be rearranged to create new meaningful structures. Ultimately, however, Williams questioned these artificial divisions and created larger networks that defy compartmentalization into "mind," "world," and "poem" According to Williams, these abstract entities are each composed of individual elements, ideas composed of things. Mimicking the action of the synapse, the imagination uses space to combine these disconnected units into new systems of meaning. Williams' ability to create new meaning thus depended on an underlying similarity between the composition of the poem and the mind, bringing together modernist poetry and modern neuroscience.



Discussing the relationship between medicine and poetry, Williams wrote that "Medicine, as art, never had much attraction for me, although it fascinated me, especially the physiology of the nervous system. That's something" (*Autobiography* 286). Indeed, Williams, first as a medical student and later as a family doctor, was able to witness first-hand one of the most intense and exciting periods of neurological investigation in history. It could be argued that Williams' uniqueness among the modernists is in part a matter of geography: whereas Gertrude Stein (like Wallace Steven and T.S. Eliot) spent her formative years on the Harvard

campus under the influence of William James and other Pragmatist philosophers, Williams studied at the University of Pennsylvania's Medical School under the mentorship of the neurologist William Gibson Spiller.³⁷ To a pathologist, understanding the concrete relationships among the systems of the body was more important than working with the larger abstractions of psychology and philosophy. Williams' fascination with neurology can be directly connected to his interest in medicine, for the nerves, too, were beginning to be understood as an intimately related system.

In my discussion of Gertrude Stein, I noted how the discovery of the neuron refuted previous, reticular conceptions of nervous structure. However, the discovery of the neuron went a long way toward solving another problem. As interest in reflex action grew during the nineteenth century, physiologists were puzzled by the "lost time" in the reflex arc (Finger 222). This predictable delay, first quantified in 1891, accompanied the simplest reflex response, the knee jerk reflex.³⁸ After the birth of neuron theory, physiologists hypothesized that this time might actually represent a gap between cells, a mixture of space and time. As I noted in the introduction, this gap was given a name by Charles Scott Sherrington in 1897, the synapse. Separating these functional units, the neurons, allows them to maintain a remarkable diversity in shape and function and gives plasticity to the system. The synapse thus divides the nervous system into a series of diverse functional units, while simultaneously connecting those units into a larger unity. However, the synapse also modulates those units

³⁷ In his autobiography Williams wrote, "In medical school proper, apart from the wonders of embryology, histology, and anatomy, my one enthusiasm was for Professor Spiller in neurology" (52). Spiller was one of the neurologists who invited Charles Scott Sherrington to speak in Pennsylvania in 1904, during Williams' tenure as a medical student. See Eccles and Gibson, *Sherrington: His Life and Thought*, 19.

³⁸ It was not known at the time, but the knee-jerk reflex is monosynaptic, consisting of only an afferent neuron, an efferent neuron, and a single synapse.

through a chemical potential, providing the possibility for complex behavior. This “synaptic space” not only forms unity through disjunction but also carries or modulates meaning.

Viewing the nervous system as a series of neurons and synapses, Sherrington and other advocates of the neuron doctrine could now describe the basic unit of the nervous system: a receptor (the presynaptic neuron), a conductor (the synapse itself), and an effector (the postsynaptic neuron). This model also described the higher organization of the nervous system, which is likewise divided into receptor areas and effector areas, reflex arcs of stimulus and response. In a series of lectures published in 1906 under the title *The Integrative Action of the Nervous System*, Sherrington offered the following foundational principle: “the reflex arc is the unit mechanism of the nervous system when that system is regarded in its integrative function” (7). Viewed as an integrated system, the nerves thus follow the reflexive model on a larger scale: a chain of neurons can behave as a conductor like the synapse, connecting receptor areas to effector areas. Because a chain of neurons behaves similarly to a synapse, modifying activity and connecting regions of the brain and peripheral nervous system, it also represents a form of synaptic space. At both the local and global level, the mind consists only of individual “things” and connective space.

The discoveries of Cajal and Sherrington shaped the nervous system of the late-nineteenth century, the neuroanatomical model presented to Williams during his tenure as a medical student. Whereas early nineteenth-century neuroscientists described a single anatomical object, the brain, as the center of consciousness, the modern nervous system dispersed the mind throughout the body. As Williams wrote, “consciousness, which is of all things thinkable the most immaterial, is placed in the breast of man. To think of it as detached, separately operable is impossible” (*Embodiment* 131-2). Like Cajal and

Sherrington, Williams viewed “mind” as not a single object that could be isolated, but as a system of functional units. As I will show, this anatomical model provided Williams with his unique understanding of the systematic arrangement of elements that composed the mind, the external world, and the poem itself.

Although Stein also attempted to ground psychology in the anatomy of the nervous system, recognizing the importance of connective space in language, her work continued to privilege mental and grammatical objects over the “things” of the real world. Attempting to call the reader’s attention to the “bottom nature” of objects and to break habitual associations between words and things, Stein instead made the objects of the real world more subjective and abstract. Stein’s things are lost in a sea of ideas as her grammatical associations become more prominent and her mental associations become more private. Williams quoted a telling passage in his essay on Stein, in which she said of *Tender Buttons*, “It was my first conscious struggle with the problems of correlating sight, sound, and sense, and eliminating rhythm; now I am trying grammar and eliminating sight and sound” (qtd. in *Imaginations* 349). Characteristically, Stein’s “conscious struggle” operated at the higher level of abstractions, ultimately eliminating lower-order sensations such as “sight and sound.” Stein’s struggle was characteristic of many authors whose experimental work has come to define “high” modernism. For these authors, as for Stein, this aesthetic required a move toward linguistic play and disembodied consciousness, toward the pure expression of mind and away from the sensual body.

Williams earned his distinctive place among modernists, and his special place in Miller’s continuum, by choosing to fight the battle against habit at the site of the body, rather than attempting to rehabilitate an outdated model of consciousness that privileged the mind.

Instead of viewing the physiological foundations of the mind as a threat against its freedom and sovereignty, Williams highlighted the physicality of mind to ground mental life in immediate sensual experience. In “The Clouds” (1948), Williams compared a disembodied brain with a shell-less crab, vulnerable and ridiculous:

The poor brain unwilling to own the obtrusive body
would crawl from it like a crab and
because it succeeds, at times, in doffing that,
by its wiles of drugs or other “ecstasies,” thinks

at last that it is quite free—exulted, scurrying to
some slightly larger shell some snail
has lost (where it will live). And so, thinking,
pretends a mystery! (*Collected Poems*, 2:173)

The poem provides a critique of those who view the mind as “free” from the body, noting that the transformation of the mind into a transcendental abstraction “pretends a mystery.” Cleverly, Williams’ syntax replicates this process of “subjectless” thinking by leaving the participle stranded in the sentence and implying that “thinking,” not the brain itself, is the source of the false mystery. William’s poem suggests that the mind always exists in the context of the body, that thought cannot be separated from the physical brain; to deny, or ignore, the embodiment of mind is, for Williams, to divorce knowledge from its origins in the human body: “knowledge is human, thus humanized, purely—and nothing else” (*Embodiment* 83). This idea provides the unifying theme for a collection of essays and fragments Williams titled *The Embodiment of Knowledge*, a collection published posthumously but composed between 1928 and 1930. In it, Williams railed tirelessly, and often tiresomely, against the twin evils of Science and Philosophy, fields of study that privilege abstract forms of knowledge over human experience.

Williams' pairing of science and philosophy is initially problematic, seeming to cut off both empirical and rational sources of knowledge. However, his conception of science viewed the scientific method as a rational construct that distorts the body's immediate understanding of nature; science "changes nothing, invents nothing, takes away nothing, adds nothing to the material world....it does one thing only—it brings the material world into a certain relationship with the intelligence" (*Embodiment* 29). Science and philosophy thus merge into a single, rationalistic unit: "both...set out with designs on a solution of life and cannot become realizable as categories of thought until they renounce those early mistaken, transcendental starts and limit themselves to being departments of function in man" (87). These fields attempt to explain experience through transcendental abstractions, but in doing so ignore the diverse "departments of function" that compose human life. According to Williams, both science and philosophy perpetuate habits of thinking that ignore the diversity of experience, using abstractions to limit meaning. In *The Embodiment of Knowledge*, Williams advocated a reversal of this process, using the objects of sensual experience to restructure and expand the meaning of abstractions.

This "restructuring" of the mind shares kinship with James' alteration of mental habits through attention, but exhibits a focus on physiology that distinguishes Williams from the more psychologically minded James. In James's description of mental plasticity, the unconscious responses of the body, reflexes, are always subject to control by consciousness in the form of attention. As I noted in my discussion of Stein, this combination of material nerves and immaterial consciousness exposes a fundamental tension in James' work, a reluctance to abandon abstract conceptions of mind despite a confidence in the neural basis of thought and behavior. For both James and his pupil Stein, this reluctance tended to elevate

mind over body, highlighting the mind's ability to synthesize experience and control the objects of its environment. As it did to the character in Williams' story, this conception of mind places the individual "at the center of the universe," viewing the physical objects of the world mainly as stimuli to provoke neural activity and inspire mental associations.

Once a stimulus sets the nerves in motion, they follow pre-established pathways in which the individual identity of the object is lost in a mechanism of association and classification. According to James, the brain of the animal is "an extremely complex machine whose actions, so far as they go, tend to self-preservation; but still a *machine* in this sense—that it seems to contain no incalculable element" (*Principles of Psychology* I.17). As James illustrates using the example of a child's response to a candle, these mechanical associations decrease mental effort by making hot things, candles, torches, and lamps, all mean the same thing: pain. Although the child initially seeks to grasp the flame, a "reflex tendency common of babies of a certain age," the child learns to associate the "retinal image" of the flame with the pain caused by burning" (I.25). The neurological association of the visual reflex and the pain reflex cause the suppression of the grasping reflex, and thus the mind comes to a seemingly complex understanding through simple combinations of stimulus and response.

For James and Stein, the increasing complexity of mental responses provided hope that our ever-growing understanding would someday match the complex but static environment. In James' model, the mind can eventually reveal the true or "bottom nature" of a flame by a process of trial and error, expressing true associations and suppressing false ones. As revealed by Stein's entry for "A Fire" in *Tender Buttons*, this was a problematic proposition:

What was the use of a whole time to send and not send
if there was to be the kind of thing that made that come in.
A letter was nicely sent (323).

As I argued in the first section of this chapter, such “definitions” reveal more of their author than the objects they attempt to define. Stein’s entry reveals a personal association between fire and letters, possibly representing an instance in which one such “nicely sent letter” met its final end in the fireplace, but it fails to bring the “bottom nature” of the fire to the surface. If anything, the burning fire seems rather “cold” in comparison with the passionate, emotionally “hot,” letter, the kind of letter that makes an author wonder whether “to send or not send” it. In its failure, however, Stein’s work comes to an important truth that upsets her mimetic goals but pushes her closer to postmodernism, the truth that the mind doesn’t just react to the environment, but changes the environment in the act of perception.

This view of the mind and environment was first expressed by James’ fellow pragmatist John Dewey in his contentious and famous analysis of the reflex arc: “The Reflex Arc Concept of Psychology” (1896). Dewey claimed that the reflex arc, pretending to unify the physiological study of the nerves and the psychological study of mind, instead perpetuated an outdated dualism between stimulus and response, sensation and idea. In James’ psychology, each new experience added new complexity to thought and allowed our mental concept of the world to form a more perfect correspondence with its static environment. Dewey argued that this understanding of the reflex arc required an artificial disjunction between the process of sensation, the central nervous activity that represents the idea, and the response or motor discharge. This disjunction made the reflex arc “not a comprehensive or organic unity, but a patchwork of disjointed parts, a mechanical conjunction of unallied processes” (97). To replace this disjointed patchwork, Dewey proposed a “circuit...more truly termed organic than reflex,” a more fitting representation “because the motor response determines the

stimulus, just as truly as sensory stimulus determines movement” (102). Because the stimulus and response, the sensation and the idea, are part of a concrete, circular whole, they must be considered different in function and not, as James argued, different in nature: “The ‘stimulus,’ the excitation of the nerve ending and of the sensory nerve, the central change, are just as much, or just as little, motion as the events taking place in the motor nerve and the muscles” (103). In this model, the sensory stimulus, the central activity, and the motor response all consist of energy transferences between physical objects. Dewey removes the mind from its position of prominence and declares a fundamental equality between the thinking organism and its environment.

To make his point, Dewey re-interprets James’ example of the child touching a candle flame, noting that the reflex arc only begins with the candle-stimulus because of a pre-conceived hierarchy that gives primacy to the mind. Prior to the touching of the candle comes the “act of seeing,” the mental and physiological act that gives the act value and “determines the quality of what is experienced” (97). Before the initial contact, the candle does not have a fixed value or identity to be uncovered because its qualities are determined in the act of seeing; the physical system that includes the candle is always shaped by the mental (and equally physical) system of the mind. Likewise, the response to the candle assigns it a new value and determines the quality of its existence: “the so-called response is not merely *to* the stimulus but *into* it. The burn is the original seeing, the original optical-ocular experience enlarged and transformed in its value. It is no longer merely seeing; it is seeing-of-a-light-that-means-pain-when-contact-occurs” (98). In other words, the environment exerts control over the body just as much as the body exerts control over the environment. Although James highlights the mind’s growing ability to interpret experience, Dewey turns

this interpretation on its head by declaring that the candle controls the mind even as it is controlled by the body, that “the seeing, in a word, remains to control the reaching, and is, in turn, interpreted by the burning” (99). By viewing the stimulus and response as a circuit rather than a disjointed arc, Dewey establishes unity between the objects outside the body and the mental activity within it, arguing that their difference in function is subsumed within a larger unity. Both the mind and the environment, according to Dewey, are systems in which energy is constantly moving and transforming, changing the function (and therefore the meaning) of the objects within them; they are “one uninterrupted, continuous redistribution of mass in motion” (103).

Dewey revised and updated James’ interpretation of the reflex, clearing the vestiges of nineteenth-century psychology that distorted James’ conception of physiology. In a similar way, it could be argued that Williams revised and updated Stein’s theories of representation, adopting her focus on rearranging ideas but rooting himself firmly in the empirical world of things. Unlike Stein, who cultivated, elevated, and refined her genius to explain the world around her more clearly, Williams “lowered” himself by placing the mind within the larger system of the environment. As Dewey noted, the mental activity of the brain shares a fundamental similarity with the things of the world; it is “not a certain kind of existence; it is a sort of sensory experience interpreted, just as is candle flame, or burn from candle flame. All are on a par” (103). Williams’ imagination operates by allowing objects to interpret mind just as much as the mind interprets objects. Although this thinking shows the influence of philosophers such as Dewey and Alfred North Whitehead, it also shows a deep understanding of the implications of the modern nervous system created by Cajal, Sherrington, and others. Sherrington’s description of the reflex is remarkably similar to

Dewey's: "A 'reflex' can be diagrammed as an animal reacting to a cosmical 'field' containing it. Animal and 'field' are of one category, both being comprised within the physicist's term 'energy'. They are machines which interact" (x). Williams' description of the imagination likewise places the mind and world "on a par," reducing both to the "things" that compose them. However, it also borrows another important idea from modern neurophysiology by suggesting that these things can be connected through space to form a larger system. The imagination reduces ideas to things, but it also joins these things to form ideas. Williams' imagination, like Sherrington's nervous system, is "integrative."

Williams' work aspires to reshape habits of thinking, a goal also shared by Stein, but it does so by restructuring the constitutive elements of those habits, the things that form our ideas. Although early twentieth-century psychologists tended to blend conscious "habit" with unconscious reflex, Williams clearly distinguished between the psychological habit, the patterns of thinking that form the problem, and the physiological reflex, the immediate and systematic bodily experience that provided the solution. Whereas habit operates at the level of complex behavior, the reflex allows changes in the composition of that complex behavior. Sherrington noted that habit and reflex are not interchangeable:

As life develops it would seem that in the field of external relation 'conscious' behavior tends to replace reflex, and conscious acts to bulk larger and larger. Along with this change, and indeed as part of it, would seem an increased role for 'habit'. Habit arises always in conscious action; reflex behavior never arises in conscious action. Habit is always acquired behavior, reflex behavior is always inherent and innately given. Habit is not to be confounded with reflex action (xiii).

Sherrington's critique differentiates unconscious reflex action from conscious habit, noting that the physical reflexes of the body are gradually replaced by the more complex mental "reflexes" of the brain. However, the "integrative" nature of both reflex and habit make

them fundamentally similar, alternate patterns produced by the same neurons. Although James' approach focused on manipulating habit through conscious attention, replacing maladaptive ideas with willed alternatives, Sherrington's model of nervous function allows mental habits to be transformed through bodily reflexes, noting that the rearrangement of neuronal units can change conscious behavior. Thus, a modern scientist, or a modernist author, might start from the body and move upwards, isolating the neuronal components of the reflex and using them to reorganize the material composition of consciousness. This alternative reflects the central principle of Williams' aesthetic, which is likewise based on using aggregates to create wholes, rearranging things to create ideas.

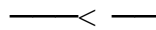
By manipulating the elements of the body, effectively rearranging the nervous pathways, Williams can affect the composition of consciousness. However, Williams also believed that the external world could be similarly rearranged. As he writes in *To Daphne and Virginia* (1954),

A new world
is only a new mind.
and the mind and the poem
are all apiece (*Collected Poems* 2:247).

This is a significant statement, and one that needs to be carefully unpacked. It would be easy to misread the lines as a form of Romantic idealism, a claim that reality is dependent on the mind. However, for Williams, "world" and "mind" had no meaning by themselves, but consisted only as an aggregate of objects. To rearrange those objects is to redefine the abstractions they comprise, creating a "new mind" and a "new world." Because both the mind and reality are systems of objects, systems tied together by the fundamental similarity of their composition, altering one system affects the other. Sherrington noted that "the organism itself, like the world itself, is a field of ceaseless change...It is a microcosm in

which forces which can act as stimuli are at work as in the macrocosm around” (132).

Rearranging the “field” of forces that compose the nervous system changes consciousness, and, in turn, changes the way that the mind groups together the corresponding field of objects in the external world: “A new world / is only a new mind.” I will have more to say about the relationship between mind and world later in the essay, but I would first like to explore the second important claim made by Williams, that the “mind and the poem / are all apiece.” Not only does Williams’ use of the word “apiece” suggest that the mind and poem are parallel entities, but it also slyly hints that both the mind and the poem are in pieces--built from fundamentally similar “things.” As Williams would claim in a 1948 lecture, the poem, like the mind and world, is “a field of action” (*Selected Essays* 280)



In *Spring and All* (1923), Williams wrote, “the inevitable flux of the seeing eye toward measuring itself by the world it inhabits can only result in himself crushing humiliation unless the individual raise to some approximate co-extension with the universe. This is possible by aid of the imagination” (*Imaginations* 105). Williams seems uncomfortable here with a strictly material vision of the universe. Although convinced that the mind consists of nothing other than the objects that compose it, Williams also understood that these objects are constantly changing their conformation, resulting in an inconstant, “humiliated” sense of self. However, the imagination allows the self to achieve “co-extension” with the objects of the material universe, combining or “raising” the two sets of “things” into a larger system. The material world is no longer an index to mind, but a structure of connected objects indistinguishable from the structure of the mind itself. The

imagination thus bridges the space between physically separated mental and material elements:

The mind cannot have to do with that which lies beyond its comprehension, therefore it behooves us to bring that which we wish to understand within the sphere of comprehension before we attempt to undo it. And thus before the mind goes always—and by necessity—the imagination (*Embodiment* 49).

The primary role of the imagination is to bring external things within the “sphere of comprehension,” into contact with the things that compose the mind. Williams described this process as both an “undoing” and an “understanding,” breaking down traditional groupings of objects to reform them into new wholes. The imagination not only places the objects of perception within a system, but also makes connections between those objects to create new and meaningful relationships. In this way, the imaginative process uses a form of synaptic space to connect the objects of the mind and material world while modulating their meaning. The nervous system brings together mind and body, and the imagination brings together the elements that compose the self with the objects that compose the external world.

By providing the meeting place for the objects of consciousness and those of the material world, the poem plays the same role as the body as it brings together sensory stimulus and mental or motor response. Williams wrote that “the great or actual poem is one which in its body is an increase in knowledge” (*Embodiment* 74). Like knowledge itself, the poem is humanized, thus embodied—an organic structure composed of systematically arranged images and part of a systematically arranged environment. The mind achieves its meaning from the systems of neurons that compose it, and each poem achieves its individual character through the composition of its grammatical objects: “It is their bodies as poems, as with men, that is their destiny” (*Embodiment* 74). Perhaps the most dramatic example of the

poem-as-body occurs in “Navajo” (1948), in which Williams shaped the poem to resemble a woman carrying a child on her back:

Red woman,
 (Keep Christ out
 of this—and
 his mountains:
 Sangre de Cristo
 red rocks that make
 the water run
 blood-red)
squaw in red
red woman
walking the desert
I suspected
I should remember
you this way:
 walking the brain
 eyes cast down
 to escape ME!
 with fixed sight
 stalking
 the gray brush
 paralleling
 the highway...
 —head mobbled
 red, red
 to the ground—
 sweeping the ground—
 the blood walking
 erect, the desert animating
 the blood to walk
 erect by choice
 through
 the pale green
 of the starveling
 sage (*Collected Poems* 2:150).

The poem’s body is shaped through space, and is given life through anatomical imagery of the circulatory and nervous system. Williams’ images of blood and brain infuse the poem, replicating the pervasive structure of these anatomical systems; he describes the “red rocks

that make / the water run / blood-red,” and “the blood walking/ erect, the / desert animating / the blood” (*Collected Poems* 2:150). The poem’s body is composed by anatomical objects.

Despite the internal/external divide created by the shaping, the external space of the body is also the internal space of the sentence: the contours of the woman’s body are also gaps in the single sentence that comprises the poem. Similarly, Williams’ use of color breaks down the barrier between the woman’s interior (red blood) and her exterior (red skin). She is a “squaw in red” and a “red woman,” an individual created by the systems that compose her, literally “blood walking erect.” Composed of systems, the woman is also part of an ecosystem; the body-poem includes the “grey brush,” “the pale green / of the starveling / sage,” and the desert that surround the woman. Even the mountains, significantly named “Sangre de Cristo,” become incorporated into the woman’s anatomy through their name (“Blood of Christ”) and their location within the body-shaped poem. Most importantly, the body’s interior includes the external perceptions of the narrator: “I should remember / you this way.” The interjection of the narrator into the private thoughts of the Navajo woman becomes the central act of the poem, a penetration of the brain and body that seems uncomfortably sexual:

walking the brain
eyes cast down
to escape ME!

Although the woman walks with “eyes cast down,” the narrator’s capitalized, triumphal “ME!” signals that he has broken into his subject’s consciousness, becoming an object in an anatomical system that includes the brain and the eyes. Yet this slightly sinister invasion of the woman’s body may represent something more benign: the imagination’s power to link together the internal movements of the woman’s blood and brain and the internal movements

of the narrator's consciousness. Through its form, "Navajo" highlights the boundary between the woman's body and the narrator's mind; however, the poem ultimately interrogates and overcomes that boundary. Ultimately, "Navajo" is a poem about the imagination's power to bridge cultural, physical, and mental divisions and its ability to shape a compelling picture (both spatial and poetic) of the woman despite the perceptual limitations of the artist. Williams showed that these abstract divisions are subsumed within a larger network that includes the mind, the external world, and the poem itself.

Because abstractions such as "mind," "world," and "poem" create arbitrary divisions, Williams' grounding of ideas in things allowed him to expand the content of these abstractions by blurring traditional distinctions between physical and mental objects. As shown in "Navajo," the poem can borrow its meaning from both the objects that compose the mind (the blood and brain), and those that compose experience. Williams wrote in *The Embodiment of Knowledge*, "As far as man is concerned, science, poetry, philosophy—are no more than material manifestations of his brain, of equal value whether in clay, iron, or words—provided only that they keep at a stretch the bounds of his comprehension" (130). Through the imagination, Williams expanded the "bounds of his comprehension" to incorporate the objects of the outside world into the objective system that composes consciousness. Although this expansion might connect Williams to a Romantic tradition, it is also distinctly modern in its willingness to equate thought to "material manifestations" of the brain. Williams expanded consciousness not by replacing material objects with mental abstractions, but by recognizing the materiality of brain, mind and reality. Instead, Williams elevated objects such as neurons, clay, iron, and words, using them to extend the boundaries of comprehension and meaning.

Like other abstractions, however, the poem has no meaning apart from the objects that compose it. Williams' emphasis on poetic structure reflects his belief that the poem exists only a system of functional units and meaningful spaces:

Language is made up of words and their configurations, (the clause, the sentence, the poetic line—as well as the subtler, style); to these might be added the spaces between the words (for measurement's sake) were these not properly to be considered themselves words—of a sort (*Embodiment* 141).

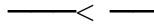
Williams believed that words have no meaning by themselves, but rather achieve meaning through their relationship with other objects, both words and the spaces between them. The old poetic forms, like the reticular nervous system that Cajal's findings supplanted, tended to dissolve the words in order to unify a fixed form. Because a poem's idea is established through its formal structure, these pre-established forms implied predetermined meanings: “Why not write sonnets? Because, unless the idea implied in the configuration can be deformed it has not been used but copied. All sonnets mean the same thing because it is the configuration of words that is the major significance” (*Embodiment* 17). Traditional forms such as the sonnet limit the restructuring power of the imagination, but by escaping from the tyranny of fixed form, the poem also escapes fixed ideas. Instead, the form and the idea emerge from the particular arrangement of objects--thus, “no ideas but in things” (*Collected Poems* 1:263). Williams' poetry, by accentuating conjunctions, prepositions, and meaningful space, also emphasized poetic form as an aggregate of functional units, things, linked by the imagination.

In a neuron-based nervous system, the success of mental processing depends on the individual participation of each functional unit. This interdependency can be humbling, reminding us that major changes in brain processing can result from a small area of malfunctioning neurons. On the other hand, even as it humbles our conception of mind, this

model elevates the importance of the individual neuron, creating a system in which no unit can be ignored. In Williams' work, this egalitarian view of objects led him to a certain modesty about his ability to rationalize and explain the world around him. Likewise, it led to the elevation of unpoetic or non-poetic subjects—wheelbarrows and white chickens, the broken bottle behind a hospital and the young daughter of a murderer. Perhaps more significantly, it led to a view of poetry in which each grammatical object plays an equally important role, acting like a neuron in the nervous system or a cog in a machine. Williams famously described poetry as a machine in *The Wedge* (1944): “There’s nothing sentimental about a machine, and: A poem is a small (or large) machine made of words. When I say there’s nothing sentimental about a poem I mean that there can be no part, as in any other machine, that is redundant” (*Collected Poems* 2:54). James described the mind as a machine with “no incalculable element,” but the ghost in Williams’ poetic machine is the imagination, which rearranges the elements to determine the function or meaning of the constituent parts. In such mechanistic poetry, each component takes an equal role and, thus, each component can be the center on which the entire machine depends. For this reason, the preposition or conjunction becomes as important as the noun or verb, and, more importantly, every material object has an integral place in the formation of the poem’s idea. As Sherrington noted, the mind and environment are “machines which interact,” but Williams describes poetry as a third machine that affects our mental conception of the world around us. At both the level of form and content, one can understand why

so much depends
upon

a red wheel
barrow (*Collected Poems* 1:224).



As I have shown, Williams viewed the mind, world, and poem as abstract entities composed of systems of individual elements. He also defined the work of the imagination as the unification and redistribution of those objects. But how exactly does this unification occur? Williams suggested that the operation of the imagination mirrors the processes of nature, but he also carefully distinguished between mimesis and “organic form.” The poem is not “like” the body because it is composed of objects related by fundamental, rather than superficial, similarities. Similarly, the imagination is not “like” nature; instead, “the work of the imagination is not like anything but transfused with the same forces that transfuse the earth” (*Imaginations* 121). Recognizing that the design of the mind follows the systematic design of the external world allowed Williams to imitate the creative forces of nature:

—to place myself (in
my nature) beside nature

—to imitate
nature (for to copy nature would be a
shameful thing) (*Collected Poems* 2:276).

In nature, cells combine to become organisms and organisms combine to create ecosystems, and in Williams’ organic form the poet arranges objects to create a larger structural and functional whole. By placing the narrator’s “nature,” his personality or character, beside “nature,” the natural world, Williams purposefully confused the nervous system and the ecosystem. The passage, through the excessive repetition of “nature,” further blurs this distinction, seeming to warn simultaneously against copying the natural world and self-imitation. For Williams, the imagination fails when it creates distinctions between the self and nature, refusing to view the self as material or idealizing the natural world. To understand the processes of nature and the imagination as analogous, the ideal of organic

form, Williams relied on a deeper structural similarity between the natural world and human nature. Both natures, in the end, are material systems.

Finally, then, the imagination depends not only on “the forces that transfuse the earth,” but also on the spaces that permeate the nervous system—both transform fragmentation into structure and meaning. The fragmentation of the above lines in “The Desert Music” (1954) simultaneously suggests the discrete objects that compose the natural world and the discrete thoughts that compose his mind. Despite this fragmentation, the narrator comes to understand that this apparently disordered experience forms a larger whole:

I am that he whose brains
are scattered
aimlessly (*Collected Poems* 2:282).

Indeed, the poem becomes evidence that the poet’s mind can include a multitude of diverse objects seemingly “scattered aimlessly.” Williams highlighted this diversity through the poem’s use of formal space, which scatters the brains into two lines with unpredictable or “aimless” spacing. Yet the poem also uses synaptic space to connect the brain, bringing together the objects of the poem into a single sentence. Even as these objects threaten to fall apart into mere “things,” Williams’ narrator rescues them from fragmentation by placing them within a system. Williams’ use of the word “brains,” significantly both singular and plural, highlights the poem’s mixture of unity and diversity, a mixture that also characterizes the anatomical brain formed through an aggregate of neurons. Further, the poem suggests that the unified brain is indistinguishable from the unified self (“I am that he whose brains”), allowing the narrator to find self-affirmation in the fragmented objects of experience. Ultimately, Williams showed that these objects are linked by their inclusion in the narrator’s consciousness and, more immediately, by their inclusion in the poem itself. “Desert Music,”

despite its fragmentary nature, thus expresses the power of the imagination to bring objects within its comprehension, to view normally divisive space as synaptic.

Although Williams' poetry depended on the similarity between objects, he was careful to distinguish between superficial and structural similarities. Because Williams asserted a deeper connection between the self and the world, he disparaged the superficial likeness implied by the simile. In his Prologue to *Kora in Hell* (1918) he wrote, "Although it is a quality of the imagination that it seeks to place together those things which have a common relationship, the coining of similes is a pastime of very low order, depending as it does upon a nearly vegetable coincidence" (*Imaginations* 18). The imagination instead recognizes a closer relationship between these things: "On the level of the imagination all things and ages meet in fellowship. Thus only can they, peculiar and perfect, find their release" (*Imaginations* 19). Williams' art thus respected the distinct identity of each object, but viewed all things in "fellowship," united by latent similarities. Nowhere is this close relationship between the imaginative mind and the material objects of the world more evident than in the widely anthologized poem "Spring and All."³⁹ Like "The Red Wheelbarrow," Williams' "Spring and All" hinges on prepositions that indicate the connection between the objects of nature, the structure of mind, and the idea of "spring."

The most important of these prepositions is the initial "By," which indicates the context of the narrator's meditation on spring:

By the road to the contagious hospital
under the surge of the blue
mottled clouds driven from the
northeast—a cold wind. Beyond, the
waste of broad, muddy fields
brown with dried weeds, standing and fallen (*Collected Poems* 1:183).

³⁹ Like the other poems in *Spring and All* (1923), the poem usually referred to as "Spring and All" or "By the road to the contagious hospital" was initially untitled.

Williams places prepositions in prominent positions at the beginning of sentences and lines, and in doing so indicates that his “Waste Land” is merely an element of scenery, an accessory to the hospital visit that is the real purpose of the narrator’s journey. At the same time, however, the prepositions indicates kinship between the “waste of broad, muddy fields” and the thoughts of disease and death that surely must occupy the narrator’s mind on such a visit. The waste is both “beyond” the business of daily life, an irrelevant roadside distraction, and also the “Beyond,” the all-important destination at the end of life’s road. The contagious thought of death, a nothingness closely related to the empty waste by the side of the road, presents a blank canvas full of both terror and creative potential.

Brushstroke by brushstroke, object by object, Williams fills the emptiness with the individual items of his perception. A barrage of adjectives separated by divisive commas outlines the objects that enter the narrator’s vision, the “reddish / purplish, forked, upstanding, twiggy / stuff of bushes and small trees.” Central to Williams’ poem is the understanding that these words and the “stuff” they represent not only physically signal the approach of spring but also, more subtly and significantly, come to form the very idea of spring itself. The poem retains the individual identity of the objects by the side of the road, the “dried weeds, “the scattering of tall trees,” and the “leafless” and “lifeless” vines, but simultaneously bridges the space between these things to form a larger idea. Further, because of Williams’ syntactical connection between the landscape by the road and the landscape of the narrator’s mind, the aggregation and reformation of these objects transform both physical and mental space. Forced to confront the possibility of death, and the termination and emptiness it suggests, Williams’ narrator uses the objective proof of spring’s resurrection to counter the thought of annihilation with a similar mental rebirth.

Like the natural transformation, this intellectual transformation is a small miracle that requires a unique use of space. Williams divides or “quarantines” the living and the dead, but reveals an underlying connection in the form of a “cold wind” that is both destructive and creative, life-draining and invigorating. Miraculously conceived, both the objects of spring and the ideas they generate are “naked,” born without a memory of the coldness that preceded them, while paradoxically arising from a coldness that is already “familiar” at birth:

They enter the new world naked,
cold, uncertain of all
save that they enter. All about them
the cold, familiar wind—

On the road to the contagious hospital, these images of parturition transport Williams’ thoughts and those of his doctor-narrator to the maternity ward. We all, Williams’ poem suggests, enter the world without a knowledge of the past, born into the cold company of strangers whom we somehow, miraculously, already know as family. The circle of the narrator’s thought is completed as the patients at the hospital and the objects by the side of the road, “they,” are connected into a larger, life-giving system: “they” wither and approach death, but “it quickens.” “Spring and All” thus builds its message through a collection of irreconcilable and opposing forces--winter and spring, birth and death, memory and ignorance—that are shown to have a deeper kinship.

In the collection that gives the poem its name, *Spring and All*, Williams argued, “To say the inorganic, organic, and the ethical world are absolutely separate is not true—for an analogy of ‘truth’ runs through all three. They are like each other in many respects, such as the capability of being divided into primary units which are basic, etc” (*Imaginations* 132). Williams’ poem succeeds because it recognizes no distinction between the physical things that constitute the landscape (organic), the grammatical objects that constitute the poem

(inorganic), and the functional units that constitute the mind (ethical). Because these objects remain distinct and individual, bearing no inherent allegiance to the inorganic, inorganic, or ethical world, the imagination can form connections between them that fundamentally change their associations. Although we are often tempted to divide the waste of winter from the fullness of spring, the final exit of death from “the stark dignity of / entrance,” Williams shows the fellowship of these ideas at the level of the “primary” or “basic” unit. In Williams’ imagination, these are “profound changes” of a single system, variations produced by altering the meaningful connections, the synaptic spaces, between objects. “Spring and All” exposes Williams’ process of composition as it forges connections between grammatical, physical, and mental elements, joining them into single system that reveals their similarity.

By emphasizing similarity in his poetry, Williams brought external objects into a position of equality with the objects of the mind. Miller wrote that Williams broke the “hollow bubble” of consciousness, but I would argue that he did so not by abandoning consciousness, but by removing it from a privileged space and bringing it into contact with the objects of the external world. Following Miller’s own description of modernist poetry, one could argue that in Williams’ poetry “the mind is dispersed everywhere in things and forms one with them” (Miller 8). To Miller, this means replacing the abstract “mind” with a concrete “thing-ness.” Yet, this replacement is unnecessary if the mind itself is concrete. Because Williams viewed both the mind and material world as systems of objects, they can maintain their separate identities but still be connected by the fundamental similarity of their composition. Williams affirmed that all ideas are composed of concrete things, refuting the primacy of mental abstractions in the way Miller describes. At the same time, however,

Williams expanded the semantic reach of these abstractions, what he called the “radiant gist,” by asserting that their content can be both mental and physical, subjective and objective. Finally, the mind and nature are not two separate systems, but a single system connected by synaptic space and marked by intercommunication and interdependency.

By understanding space as synaptic, Williams’ poetry connected rather than divided, uniting the objects of mind, body, and nature. In this way, Williams also connected the space of the nervous system with the space of the imagination, understanding that the power of both lies in their ability to bring diverse objects into a common system. In both the conceptual space of his critical writings and the formal space of his poetry, Williams showed how objects combine to form systems with complex functions and meanings, how things become ideas. However, as I have argued, “no ideas but in things” does not eliminate or even necessarily limit the scope of abstract ideas. Instead, it extends the nervous system outside the body and, consequently, expands ideational content outside the mind. Williams’ concept of the imagination thus achieved the effortless unity of mental and material objects, something elusive to modernist poets but fundamental to modern neuroscience.

Chapter 2: “The Eye’s Plain Version”: Wallace Stevens and the Anatomical Prejudices of Perception

Some poets, like William Carlos Williams, write poetry of construction and build brick by brick; others, like T.S. Eliot, write poetry of destruction and search for salvage amongst the ruins. Wallace Stevens wrote blueprints and stood in the glittering foyer of a structure never to be completed. In the anteroom of the Supreme Fiction, Stevens became caught in the synaptic space between reality and the imagination, between facts that could not be abandoned and ordering fictions that could not be trusted. Despite his acknowledgement that our vision is determined by a changeable outer light, the “the old chaos of the sun,” Stevens was reluctant to rely on an inner light that would erase “the old dependency of day and night” (“Sunday Morning”, *CP* 70). He thus recognized that an absolute division between fiction and fact impoverished both spheres, leaving poetry meaningless and reality colorless. Stevens refused to close the door on reality, a refusal that likewise precluded his passage into the airy spaces of the imagination.

In a later poem, “Crude Foyer,” Stevens wrote that any thinking that retreats from reality becomes lost in “false happiness,” the superstitious belief

that there lies at the end of thought
A foyer of the spirit in a landscape
Of the mind, in which we sit
And wear humanity’s bleak crown (*CP* 305).

Such an act of intellectual arrogance replaces the physical landscape with a mental one, a misguided optimism that gives man dominion over an imaginary kingdom, a “bleak crown”

in the realm of pure spirit. As Joseph Carroll notes, this paradise is “‘imperfect’ not only because it is bleak but also because those who reside there can reject but cannot altogether suppress the critique that pronounces this paradise false” (158). Disguised as spiritual aspiration, an accession of the pure paradise of the mind, this brand of humanism is really the zenith of complacency; the mind subsists only to “sit and breathe / an innocence of the absolute.” To leave this space, realizing spirit in action, one must reconcile the ideal landscape of the mind with the physical geography of reality, an impossible demand in a world marked by change and flux. Because it is barred from reality, the freedom of pure spirit is no freedom at all—the throne is a prison.

While the territory between mind and spirit proves meaningless, Stevens’ poetry testifies to the rich meaning located in the space between reality and the mind. Having presented his fallacious foyer, Stevens immediately translates his terms to produce the “Crude Foyer” of the title, the central space from which his poetry originates:

we know that we use
Only the eye as faculty, that the mind
Is the eye, and that this landscape of the mind
Is a landscape only of the eye (*CP* 305).

Epistemologically, there is no landscape of the mind that is not also a physical landscape rooted in the physiological act of perception. In her reading of the poem, Beverly Maeder notes that the word “foyer” resonates with “optical meaning,” combining the English meaning of “anteroom” with “its Latin etymology in *focus*” and the French foyer meaning ‘hearth,’ then ‘home’ (53).⁴⁰ In this sense, then, the content of the mind is dictated by the origin of perception in the focusing of the eye. The “Crude Foyer” is revealed to be the eye itself, standing between the real world and the equally-real physical landscape of the mind

⁴⁰ Maeder also notes that in Latin *focus* means fire, an etymological connection explained by the emanation hypothesis of vision discussed later in this chapter.

with its map of nerves. As Stevens claims, the mind is satisfied only when the mental landscape is an extension of the physical one; the “eye” divides, but the “I” rests only when these geographies are overlaid and is “content / At last, there, when it turns out to be here.” In Stevens’ poetry, however, this contentment is never achieved, instead becoming the driving force of the imaginative mind, of which he writes in another poem, “It can never be satisfied, the mind, never (“The Well Dressed Man with a Beard”, *CP* 247)

Although Stevens’ repeated use of images provokes translation, a tendency to replace the real images in the poem with a compendium of interrelated symbols, it is important to recognize that the eye never “stands in” for perception in the abstract sense. As I hope to show, Stevens was highly aware of the physiological process of vision, understanding how the anatomy of the eye and brain facilitated and limited our understanding of the real world. An anatomical “faculty,” the eye embodies the division between reality and the imagination: it captures a real image on the retina and also, in the very process of capture, imposes an order on the meaningless mosaic of light, “a constellation/ Of patches and pitches” that is the true nature of reality (“July Mountain”, *OP* 140). Although they cannot provide an ideal order on that mosaic, in isolation each photoreceptor does provide something true, what Stevens calls in “Crude Foyer” a “minor, vital metaphor” for reality. As a wavelength of light is converted into the neurological language of the action potential and neurotransmitter, the eye creates a physiological “metaphor” that translates and explicates the movements of the real world. In this way, the synaptic space between the lens and the retina, an anatomical division between external and internal life, paradoxically enables the connection between physical and the mental. Neuroanatomists would point out that the eye is the only sense organ that is actually “mind,”

an extension of the cortex and consequently part of the brain itself. It is the only place where the brain directly touches the real world.

In “Peter Quince at the Clavier,” Stevens famously described the process by which sounds “play” upon the spirit, concluding that “music is feeling, then, not sound” (CP 89). Like a telegraph, the vibrations upon the ear become electrical signals, and, as in “Peter Quince,” become etched in the memory centers of the cortex and permanently associated with the “green evening” and its visions of Susanna (CP 90). According to Stevens’ formulation,

Beauty is momentary in the mind—
The fitful tracing of a portal;
But in the flesh it is immortal (CP 91).

The perception and the action potentials they produce are merely momentary “tracings” in the mind, but the images they imprint on the flesh of the brain persist through time. Insofar as these images are invulnerable to the degradation of the flesh, so vividly represented by the voyeuristic “red-eyed elders,” they are *im*-mortal—“the body dies; the body’s beauty lives” (CP 92). Music is feeling, but poetry is the return of feeling into sound, the translation of fitful tracings into permanent images and rhythms.

If feeling is the body’s physiological response to stimuli such as sound and light, the tracings of action potentials on the visual cortex, then vision is also “feeling.” Indeed, Stevens would write “The truth must be / That you do not see, you experience, you feel” (“Poem Written at Morning,” CP 248). By describing these processes as feeling, Stevens’ highlights the fact that all perception contains an element of preconception, being affected by anatomical attitudes and interpreted at every step in the process.. Following a process similar to sound perception, the light that plays upon the retina strikes the photoreceptors, which pick

out certain “meaningful” frequencies and pass them onto the next layer. Through context and combination, the layer of bipolar cells adjacent to the photoreceptors combines these primary signals into more complex images before passing them onto the cortex. In the visual cortex, these images are compared to previous forms, producing associations that evoke physical and emotional responses, a quickening heartbeat and feeling of pleasure of a familiar face.

Much has been written regarding Stevens’ “auditory imagination,” the expressive techniques of sound and rhythm characteristic of Stevens’ poetry.⁴¹ Comparatively little has been written about the role of visual perception in Stevens’ poetry, unless this perception is phrased through the abstract dialectic of reality and the imagination. With the exception of a few isolated close readings, and three short chapters in James Baird’s *The Dome and the Rock: Structure in the Poetry of Wallace Stevens* (a work now over forty years old), the visual system has been almost ignored by Stevens’ critics. This neglect is made more troublesome by the critical consensus that images, colors, and light play a central role in Stevens’ poetry. The words “eye” or “eyes” appear one hundred seventy-eight times in Stevens’ *Collected Poems*, often preceded by tantalizing and confounding adjectives such as “buxom,” “angelic,” and “clairvoyant.” (CP 248, 414, 374)⁴² Despite this fact, many critics

⁴¹ For discussions of sound in Stevens’ poetry, see the series of recent articles by Lisa Goldfarb, “Erotics of Sound in Stevens Poetry” *Wallace Stevens Journal* 30.2 (Fall 2006): 138-58, “‘The Figure Concealed’: Valeryian echoes in Stevens’ Ideas of Music” *Wallace Stevens Journal* 28.1 (Spring 2004): 38-58, and “‘Pure Rhetoric of a Language Without Words’: Stevens’ Musical Creations in ‘Credences of Summer’” *Journal of Modern Literature* 27.1/2 (Fall 2003): 122-36, as well as Mervyn Nicholson “‘The Slightest Sound Matters’: Stevens’ Sound Cosmology” *Wallace Stevens Journal* 18.1 (Spring 1994): 63-80. For a book-length study, see Anca Rosu *The Metaphysics of Sound in Stevens’ Poetry*. Tuscaloosa, University of Alabama Press, 1995. The recent article by Tim Armstrong, “Player Piano: Poetry and Sonic Modernity” *Modernism/Modernity* 14.1 (Jan 2007): 1-19, which connects Stevens’ theory of sound to that of Hermann von Helmholtz, is especially useful for a neurological understanding of Stevens’ “auditory imagination.”

⁴² To put these numbers in perspective, Stevens’ use of the word “eye” (119 times) is comparable to his use of the word “summer” (121 times), and his use of the word “eyes” (59 times) is comparable to his use of the word “winter” (61 times). His use of “eye” and “eyes” both outnumber “ear,” which is only used 43 times. All

discuss vision only in an abstract sense, finding Emerson's disembodied "transparent eyeball" more relevant than Stevens' own grossly physical "eyeball in the mud" (*OP* 10).⁴³

Both Harold Bloom and Helen Vendler, towering figures in Stevens' criticism, view the physical process of vision as a burden to be lifted on the pathway to Romantic transcendence. Bloom points to anatomical images of the eye in Stevens' poetry, the "pupil / Of the gorgeous wheel" in "Sailing after Lunch" and the "shallowest iris on the emptiest eye" in "Owl's Clover," among others, but his attention to the physical space of the eye is overwhelmed by his own theoretical concern with aporias, disjunctions, and "crossings" (*CP* 121; *OP* 99). According to Bloom, the visual aspect of Stevens' poetry is only a massive metaphor that hides his ideological indebtedness, his "anxiety of influence," to Romantic precursors such as Emerson and Whitman: "Reality or the eye's plain version thus turns out to be only a crossing between turnings, a continual troping in, through, and with the eye" (307). As Bloom places Stevens within his own theoretical framework, finally revealed in his last chapter, it becomes obvious that Bloom seeks to add additional layers of obscuration to Stevens' already opaque poetry, even transforming the "eye's plain version" into an illegible abstraction.

A more attentive and sympathetic critic of Stevens, Vendler has done a great service by shifting discussion away from endless figurations of reality and the imagination and repeated attempts to decode Stevens' often inconsistent symbolism. However, her attempt to craft Stevens as a poet of physical desire is often thwarted by the same abstract terminology she criticizes. According to Vendler, feeling is the organizing principle of Stevens' poetry,

counts are based on Thomas F. Walsh *Concordance to the Poetry of Wallace Stevens*. University Park, PA: Pennsylvania State University Press, 1963.

⁴³ Emerson's "transparent eyeball" is used to describe Stevens' poetics of decreation or self-abnegation by Harold Bloom (109), Joseph Carroll (90), and Pat Righelato (82), and by Helen Vendler in both of her books on Stevens (*On Extended Wings*, 285; *Words Chosen Out of Desire*, 49).

shaping experience and re-shaping that experience into poetic form. Because vision is the source of form, poetry is fundamentally the transformation of the visual into the rhythmic and temporal: “The transformation of a spatial object into a temporal event is for Stevens the axis on which poetry turns. The world presents itself in visual terms; and yet poetry turned the visual object into the temporal integration; into that musical score of experience that we call a poem” (7). Whereas Bloom places vision at the beginning of the aesthetic experience, Vendler locates it between the moment of organization and the moment of creation, a position that simultaneously asserts its centrality and its insignificance. For both Bloom and Vendler, the physical process of vision is secondary to the transcendent or meditative experience sought in poems such as “The Snow Man,” poems in which Stevens’ deconstruction of perception exposes “true” but disembodied visions of reality. For Vendler, “The Snow Man” “reveals the very moment in which Stevens first discovered that the self, pursued to invisibility, makes itself metaphysically visible again, if only in the form of a terrifying blank” (49). Despite Vendler’s attempt to re-craft Stevens as a poet of desire, she ultimately asserts that Stevens’ strategies for overcoming the physical limitations of the body—and vision in particular—involve an abolition of the body as vision is “pursued to invisibility.”

This chapter will argue that any understanding of Stevens’ poetry that eliminates the physicality of the body, viewing it as an obstacle to transcendence, ignores the extent to which the physiological process of vision enables and limits the imagination. Put another way, I will argue that the struggle between reality and the imagination, the “war between the mind / and sky,” is really a struggle between the rich creative possibilities offered by our perception of reality and the limitations imposed by the anatomical structure of the retina and

visual cortex. (CP 407) In a letter written a year before his death, Stevens revealed that he considered writing a fourth section, *It Must be Human*, to his tripartite masterpiece *Notes Toward a Supreme Fiction* (Letters 863). In a sense, this condition is already a fundamental part of Stevens' theory of perception: Poetry must be abstract, translating flux into form; it must change, adapting to an environment characterized by flux; and it must give pleasure, matching new forms to past images. However, it also must be human, recognizing that all these processes take part within the body. Stevens' corpus is not an escape from the body, but a prolonged attempt to reconcile his desire for a "Supreme Fiction" with his understanding that any such fiction is limited by the physical shortcomings and the fundamentally personal character of human perception.

The first half of this chapter will address Stevens' theory of vision in relation to classical theories of visual anatomy. As in Stevens' poetry, the classical understanding of light and vision viewed perception as either a passive process subject to the structures of reality or an active force shaping and determining the external world. In poems like "A Glass of Water," however, Stevens parts from the classical theories of Plato and Aristotle and views perception as both mirror and lamp, dependent on the light of reality but always viewing that light through a series of refractions. In the second half of the chapter, I will show how this more "modern" understanding of vision enables Stevens' poetic imagination while placing strict limits on its capacity to generate "real" images. Nineteenth-century developments in neuroanatomy showed that all aspects of vision, from the formation of images to the perception of color, were actually neurological interpretations of reality occurring in the retina itself. These anatomical prejudices, what scientist Hermann von Helmholtz called "distortions of reality," force us to recognize that our ideas are bounded by

the limitations of the visual apparatus. In poems like “Tattoo” and “Bouquet of Roses in Sunlight,” Stevens considers whether the poet should attempt to overcome the “more than rational distortions” of vision, ultimately concluding that these subjective perceptions not only give poetry its personality and vibrancy, but also provide the only available path to truth (*Notes, CP* 398).

Revolutions in Crystal: Theories of Vision and Theories of Aesthetics

M.H. Abrams described the history of critical theory as a tension between the mimetic and the expressive, the mirror and the lamp. This divide, in turn, is part of an overarching struggle between Platonic and Aristotelian philosophies, each of which has held sway during different eras in history, ages of reason and ages of science. Most importantly, however, the mirror and the lamp express two competing theories of vision, theories that originated during Plato and Aristotle’s time and, to some extent, have never been completely reconciled. Abrams traces the mirror metaphor back to the Tenth Book of Plato’s *Republic*, in which Socrates describes the artist’s approach to truth:

turning a mirror round and round—you would soon make the sun and the heavens, and the earth and yourself, and other animals and plants, and all the other things of which we were now just speaking, in the mirror (X.362).

While Plato (429-347 B.C.E.) may be the originator of the mirror metaphor, he distances himself from this empirical model, arguing that the artist creates appearances rather than reality. Plato instead proposes that truth is the realization of the ideal, the lamp-like projection of the individual’s mental vision outward.

Although Plato’s description of vision seems more metaphorical than anatomical, it reflected the dominant theory of perception during his time. Like other contemporary Greek

thinkers, notably Galen (ca. 130-200 A.D.) and Rufus of Ephesus (ca. 1st century A.D.), Plato described the eye as the counterpart to the sun; the nerves conduct and then emit the visual spirit, or pneuma, into the outer surface of the eye, the crystalline lens. The pneuma provides the crystalline lens with its photoreceptive properties, allowing it to capture the external light of nature and then send the resulting combination of spirit and matter back to the brain.

According to Plato,

Whenever the ray that flows through the eyes issues forth into surrounding daylight, like meets like and coalesces with it, until a single undifferentiated stuff is formed, in alignment with the direction of the eyes, wherever the fire from inside strikes and pushes up against an external object...it transmits the object's impulses right through itself and all the way up to the soul, and the result is the perception we call seeing (*Timaeus* 36).

This concept, later called the emanation theory, asserted the eye's ability to produce its own light and described vision as a "coalescence" of internal and external emissions in the crystalline lens (Polyak, *The Retina* 102). Art may attempt to mirror nature, but for Plato the eye is a lamp that illuminates the world, fashioning the truth of reality in subjective, preconceived, and often misguided forms.

Plato's parallel between the eye and sun offers Stevens one of his most important metaphors for the artistic imagination, providing a ready description of the mind's power to illuminate and enrich reality. For Stevens, the sun is "The fire eye in the clouds" and our perceptions are "rhapsodies of fire and fire" (*CP* 222; *CP* 138). In "Three Academic Pieces" Stevens writes that "the eye does not beget in resemblance. It sees. But the mind begets in resemblance as the painter begets in representation; that is to say, as the painter makes his world within a world" (*NA* 76). As in Plato, the act of perception is always a representation that combines external reality and internal forms, resulting in the undifferentiated mingling of objective truth and subjective ideal that comes to constitute appearance. Contemplating

his *Collected Poems* in “The Planet on the Table,” Stevens describes the coalescence that composes poetic truth:

His self and the sun were one
And his poems, although makings of his self,
Were no less makings of the sun (*CP* 532).

In the eye, the “self and the sun” meet, each contributing to, and placing limitations on, the poet’s interpretation of the world. Any act of description incorporates the opposing forces of mind and reality, “a violence from within that protects us from a violence without,” and relies on the perceiver’s ability to generate meaningful analogies between inner and outer existence (*NA* 36). Stevens describes the ideal analogy as a “prismatic crystallization” akin to Plato’s “coalescence” in the crystalline lens, writing in “The Effects of Analogy” that these analogies “combine, inter-act, so that one influences the other and produces an effect similar in kind to the prismatic formations that occur about us in nature in the case of reflections and refractions” (*NA* 109).

Because both Plato and Stevens view perception as an active process, necessitating a spirit strong enough to counter a potentially chaotic world of experience, they both call for a “major man” who can impose an “idea of order” on reality.⁴⁴ While Plato’s “philosopher kings” are noted for the accuracy and strength of their ideals, the vast majority of men lack adequate conceptions of reality, distorting the appearance of things and providing—as in his parable of the cave—only disfigured shadows of the truth. In contrast to Plato, Stevens remains skeptical that any form can fully appreciate a reality whose only constancy is change. There are, after all, “Thirteen Ways of Looking at a Blackbird,” and Stevens’ eye

⁴⁴ The idea of the “major man” probably also owes something to Nietzsche’s *ubermensch*. For Nietzschean readings of Stevens see B.J. Leggett *Early Stevens: The Nietzschean Intertext*, Milton Bates *Wallace Stevens: A Mythology of Self* pages 235-26, and Leonard and Wharton *The Fluent Mundo: Wallace Stevens and the Structure of Poetry* 103-65.

(like the “moving” eye of the blackbird) was reluctant to rest content with a single ordering vision. Plato is certainly in the shadows of this poem, as evident in stanza VI:

Icicles filled the long window
With barbaric glass.
The shadow of the blackbird
Crossed it, to and fro.
The mood
Traced in the shadow
An indecipherable cause (*CP* 93).

Although borrowing Plato’s metaphor, Stevens seems to conclude that the windows of vision, the “barbaric glass” of the eye, will never be clear and that despite our best efforts, the final form will always be indecipherable. The desire to organize, to think metaphorically, hinders the eye’s ability to describe a world moving like the Heraclitan river where every moment contains in it the seeds of the next. Eliot argued that time present and time past are contained in time future, but twenty years earlier Stevens claimed,

It was evening all afternoon.
It was snowing
And it was going to snow (*CP* 95).

Time is the element of vision that cannot be reconciled with Plato’s static model, and the individual perceiver is revealed to be subject to forces of change outside himself: “The blackbird whirled in the autumn winds / It was a small part of the pantomime” (*CP* 93). The “major weather,” the variable landscape of reality, resists compartmentalization in any form. Even as vision is an act of description or representation, it also must be an act of “decreation,” a combination of creation and dissolution that Stevens would later describe as “A tune upon the blue guitar/ Of things exactly as they are” (“The Man with the Blue Guitar”, *CP* 165).⁴⁵ Stevens’ “weather eye” is a passive and transparent glass that transmits a

⁴⁵ Stevens uses the term “decreation” in “The Relations between Poetry and Painting” (NA 174), where he borrows it from Simone Weil’s “*La Pensateur et La Grâce*.” Although the term has become central to Stevens’

reflection of the changing world rather than refracting or “coloring” experience.⁴⁶ In this view of vision, truth consists of the totality of reflected experience rather than the adequacy of the ideal form. Returning to the mimetic vision rejected by Plato, Stevens seems to hold that the perfect eye is a perfect mirror and that poetic creation is a process of cleansing vision, the “rubbings of a glass in which we peer” (*Notes, CP* 398).

The possibility that one can “see the sun again with an ignorant eye,” an eye devoid of idealistic distortions, suggests that form might exist independently of the mind (*Notes, CP* 380). This concept of form, in turn, suggests an alternate theory of vision in which images might be passively imprinted on the eye. Whereas Plato and other proponents of the emanation theory asserted the eye’s ability to light its own way, a small minority claimed that the eye’s anatomy was designed to collect light. This “emission theory” was based on the concept that light consisted of atomic particles “believed to be exact replicas of objects,” reduced images of real things (Kelsey 34). This was the theory advanced by Democritus (ca. 460-370 B.C.E.) and Aristotle (384-322 B.C.E), who refuted Plato’s conception of the eye-as-lamp by noting the vulnerability of vision to changes in external light. In *De Sensu et Sensibili* Aristotle claims that

if vision were the result of light issuing from the eye as from a lantern, why should the eye not have had the power of seeing even in the dark? It is totally idle to say, as the *Timaeus* does, that the visual ray coming forth in the darkness is quenched (I.437).

criticism, George S. Lensing notes that Weil’s term “has a religious application that Stevens simply ignored” (Wallace Stevens and the Seasons 31). For more on Stevens and Simone Weil, see James R. Lindroth “Wallace Stevens and Simone Weil: The Notion of Decreation as Subtext in ‘An Ordinary Evening in New Haven.’” *The Beauty that Saves: Essays on Aesthetics and Language in Simone Weil*. Edited by John M. Dunaway and Eric O. Springsted. Macon: Mercer University Press, 1996: 151-171.

⁴⁶ To have a “weather eye” literally means to be able to recognize changes in the weather, but it also has the idiomatic meaning “to be watchful and alert.” A letter from Stevens’ father advised the young scholar to “keep his weather eye skinned for anything which may offer” (*Letters* 19).

In this “Domination of Black,” the eye is powerless, an impotence that reveals that light moves through the eye in only one direction. Rejecting the notion that inner and outer light “coalesce” near the outer surface of the eye—presumably in the crystalline lens, thought by Plato and Galen to be the true photoreceptor—Aristotle suggests that the eye is filled with a transparent medium that allows light to pass through without distortion. However, while Aristotle agrees with Democritus that this medium is likely water, he rejects his description of “seeing as mirroring” (I.438). Vision accurately “reflects” the real world, but it does so by bringing unfiltered images to the “soul or perceptive” part at the back of the eye. The eye is thus “ignorant” in the sense Stevens suggests, interpreting light as much as a glass of water on a table.

Joan Richardson shrewdly points to the fact that the word “ideal” always carries etymological echoes in Stevens, carrying within it “idea” or literally, “what is seen” (88). Likewise, this theory of vision proposes that the process of “imagination” originates in the “image.” Because the content of the image is light and the form of the image is created by the eye, the imagination is both within and without, existing in the space between the mind and reality. In “The Figure of Youth as the Virile Poet,” Stevens uses this distinction to dismiss the Platonic version of the ideal, which argues that ideas are created in the mind and imposed upon reality. Because Stevens believes that visual images, and not mental forms, are primary, he argues that “it is important to believe that the visible is the equivalent of the invisible; and once we believe it, we have destroyed the imagination; that is to say, we have destroyed the false imagination, the false conception of the imagination as some incalculable *vates* within us” (NA 61). The poet is dependent on images just as the eye is dependent on the sun, “we are men of the sun / And men of day and never of pointed night” (CP 137).

Stevens follows this assertion in “Evening Without Angels” with an even more direct statement of light’s primacy:

Light, too, encrusts us making visible
The motions of the mind and giving form
To moodiest nothings (*CP* 137).

Here, light and form do not emanate from the mind but rather make visible the “motions of the mind,” transforming disconnected, “moodiest nothings” into meaning. In this passive process of perception, the ideas of the major man become inseparable from the forms of major weather. The snow man, in developing the mind of winter, learns to see objects “in the distant glitter of the January sun” and not the “nothings” imposed by the mind. Like the imagination, Stevens, argues, “Light adds nothing, except itself” (*NA* 61).

In this most extreme position of subjugation, where the eye is nothing more than a mechanical instrument and the mind is nothing but a passive mirror of reality, Stevens has come full circle. While asserting that the eye mirrors the process of light, Stevens simultaneously implies the shaping power of the mind that “colors, increases, brings to a beginning and end, invents languages, crushes men, and, for that matter, gods in its hands” (*NA* 62). Even though it is “important to *believe*”—an important qualification—that the visible is the equivalent of the invisible, the eye and mind are much more actively involved in perception than Stevens would sometimes like. In a late poem, “The Plain Sense of Things,” he writes that

the absence of the imagination had
Itself to be imagined. The great pond,
The plain sense of it, without reflections, leaves,
Mud, water like dirty glass, expressing silence (*CP* 503).

The mental process of decreation is itself an imaginative process, and the “plain sense” of the great pond is created through a piecemeal cleansing of the objects of vision—“reflections,

leaves, mud, and water like dirty glass”—until only silence is left. Yet as he reveals in the next strophe, this is only silence “of a sort,” an imagining of the object of vision abstracted from human interests. The “silence of a rat” can only be viewed through the eyes of a rat, the eyes of an animal that see clearly without the “necessity” of removing the ideas and emotions that distort and humanize vision. In a long letter to his Cuban friend José Rodríguez Feo, Stevens describes Pompilio, a mule owned by Rodríguez Feo’s mother, as a model of artistic vision:

the ignorant man has no ideas. His trouble is that he still feels. Pompilio does not even feel. Pompilio is the blank realist who sees only what there is to see without feeling, without imagination, but with large eyes that require no spectacles (*Letters* 512).

According to Stevens, Pompilio “does not divest himself of anything to see things as they are,” but only because he has no unfulfilled desires and, thus, no need to imagine a truth beyond his knowledge. “We color out language,” Stevens wrote in a much earlier letter, “and Truth [,] being white, becomes blotched in transmission” (*Letters* 122).⁴⁷ The imagination adds nothing except itself, but still adds something as it colors, increases, and generally illuminates the visible world.

Problematically, then, Stevens’ poetry presents the eye as both lamp and mirror, as an active battlefield where ideal forms meet disordered reality and the soul’s passive window to the world. In his biography of Stevens, Milton Bates provides a quotation from Ezra Pound that summarizes the divide:

There are two opposed ways of thinking of a man...firstly, you may think of him as that toward which perception moves, as the toy of circumstance, as the plastic

⁴⁷ If Pompilio, the mule, is the model realist, than Lucera (a cow also discussed in the letter) is Stevens’ model poet. Viewing Rodríguez Feo talking and desiring herself to be eating, she creates a metaphorical explanation for his behavior, “wonder[ing] whether he is eating words” (*Letters* 513). Stevens claims to take “pride in now knowing Pompilio” but does “not care much about Lucera” (*Letters* 513). However irrational mules may seem, his distinction between the mental capabilities of the two animals seems arbitrary.

substance *receiving* impression; secondly, you may think of him as directing a certain fluid force against circumstance, as *conceiving* instead of merely reflecting and observing (“Vorticism,” 467-8).

Bates, like many critics, views Stevens’ work as a progression from one type of perception to the other, from the imaginative hedonism of *Harmonium* (1923) to the bare “rock” of reality unearthed in his last poems.⁴⁸ In many ways, however, Stevens’ career defies such a linear progression, and any attempt to trace the development of his thought is hampered by the “qualified assertions” that Vendler describes as characteristic of Stevens’ “pensive style.”⁴⁹

Accompanying these longitudinal descriptions of Stevens’ corpus is an equal number of critics who view his poetry as cyclical, a movement between winter and summer, light and dark, north and south. Some, like J. Hillis Miller, argue that such movements can eventually achieve fusion, noting that

An oscillation rapid enough becomes a blur in which opposites are touched simultaneously, an alternating current produces a steady beam of light, and the cycle of decreation and imagining, hopelessly false if the poet goes through it at leisure, becomes true at last to things as they are if he moves fast enough” (“Wallace Stevens’ Poetry of Being” 151).

Miller’s reading of Stevens, particularly his influential essay in *Poets of Reality* (1965), provided the framework for Stevens’ criticism for the last part of the century. Often, however, it is Miller himself who seems to be moving rapidly, becoming a “Sleight of hand man” as he fits Stevens into his theoretical framework. Because Miller views the absence of God as the driving force behind early twentieth-century poetry, he reads Stevens’ attempts to

⁴⁸ The biographies of Stevens by Joan Richardson, Milton J. Bates, and Samuel French Morse all view his development as progressive. Other studies focusing on Stevens’ earlier or later poetry like Robert Buttel’s *Wallace Stevens: The Making of Harmonium*. Princeton, NJ: Princeton University Press, 1967 and Thomas J. Hines’ *The Later Poetry of Wallace Stevens*. Lewisburg: Bucknell University Press, 1976 also implicitly view Stevens as progressing from decadence to deconstruction. Yvor Winters views Stevens’ progress in a negative light in “Wallace Stevens, or the Hedonist’s Progress.” 1943. *In Defense of Reason*. New York: The Swallow Press & William Morrow and Company, 1947.

⁴⁹ One of the first articles to discuss the polar nature of Stevens’ work was John Finch’s “North and South in Stevens’ America” *Harvard Advocate*, 127 (December 1940): 23-26. The seasonal approach to Stevens’ work was first outlined in Macksey “The Climates of Wallace Stevens” but is given definitive treatment in George S. Lensing’s *Wallace Stevens and the Seasons*. Baton Rouge: Louisiana State University Press, 2001.

describe “things as they are” as an attempt to provide “a vision of being—in the moment of its disappearance” (151).

Whatever Miller’s shortcomings, his work reveals the need of replacing the either/or tendency in Stevens’ criticism with a theory of vision congruent with Stevens’ own both/and approach. Ultimately, the Supreme Fiction

must be visible or invisible
Invisible or visible or both
A seeing and unseeing in the eye (*CP* 385).

For Stevens, true vision involves both decreation, the transparent apperception of visible forms permitted by “unseeing” previous arrangements and categorizations, and abstraction, the transformation of a disordered mosaic into a fictional and invisible formal order.

Following neuroscientists of his time, Stevens rejected the over-simplified dualism of Plato and Aristotle and viewed the eye as a synaptic space where the mind and reality, though never meeting with complete transparency, form a meaningful connection to reveal the truest vision of the external world. By necessity, the eye divides the imagination and reality, but it also provides the only place where the mind can catch a glimpse of truth—however transient, subjective, and limited. Although the debate between the emanation and emission theories of vision continued well into the nineteenth century, by 1957 neurologist Stephen Polyak could describe the eye as both mirror and lamp:

“vision” is no more than an abstraction, the concrete reality of which is our bodily visual mechanism. We see as our visual system sees, that is, within the limits and capacities of its intrinsic, inherent organization. “Vision,” in fact, is nothing more than our visual apparatus working under adequate physiological conditions (*The Vertebrate Visual System 2*).

In language reminiscent of Stevens, Polyak describes any act of vision as a fictional “abstraction” of reality, limited by the structure and organization of the perceiver. Vision is a

meeting of the “concrete reality” of the body and the other, more changeable, reality outside the body.

One could thus describe the modern theory of vision as the combination of the “physiological conditions” of the body with the external conditions under which that vision takes place. In Stevens’ terminology, this is a meeting of

The weather and the giant of the weather,
Say the weather, the mere weather, the mere air:
An abstraction blooded, as a man by thought (*CP* 385).

The conditions of vision, whittled down by Stevens’ language to the “mere weather” or even the nothing/something that is “mere air”, still circumscribe the domain of the “giant of the weather.” “Reality is only the base” Stevens once wrote, “but it is the base” (*Letters* 917). Because of this interdependency between the shaping eye and its substance, perception is a meeting of the physical geographical landscape and the equally physical mental/anatomical landscape, “an abstraction blooded.” Stevens’ placement of the word “blooded,” which hovers synaptically between the man and the abstraction, allows it to take on the character of both adjective and verb: abstractions are delimited, “blooded,” by the physiology of the eye just as the scope of human thought is defined by the structure of the brain (and visual anatomy) that generates it. In paraphrase, the line becomes a chiasmus—reality is limited by the eye and the eye limits thought—indicating the marriage of reality and the imagination at the site of the eye.

Finally, then, Stevens’ system of metaphysics embraces both theories of vision, conceding that perception always involves abstraction while affirming that the eye ultimately depends on a light outside itself; the eye shapes images according to its unique anatomical prejudices, but must borrow these images from a source outside itself. As Joseph Riddel

claims, Stevens “advocates no metaphysics of imagination, except that which accounts for the refraction of perception into arrangements of value, causing in its transformations a transformation of the self” (32). There is no better example of this refraction in Stevens’ poetry than in “The Glass of Water,” a poem that outlines the process of visual perception. Stevens’ borrows Aristotle’s description of the eye as a glass of water, and begins with a basic chemistry lesson:

That the glass would melt in heat,
That the water would freeze in cold,
Shows that this object is merely a state,
One of many, between two poles (*CP* 197).

Chemically, the glass and water remained unchanged when exposed to extreme temperatures, but their state—and their identity—begin to take on their character of their surroundings. These physical facts are only a smaller version of the “metaphysical” poles that define vision, which likewise stands uneasily between the “mind of winter” and the “rock of summer” (“The Snow Man,” *CP* 9; “Credences of Summer,” *CP* 375) In the synaptic space of the eye, these two poles are divided, but the image that is created between them is a combination of the light of reality and the anatomical structures designed to make sense of or “illuminate” that light. The next stanza makes the connection between the glass of water and the centrally located eye more explicit while adding an additional metaphorical layer. Stevens writes,

Here in the centre stands the glass. Light
Is the lion that comes down to drink. There
And in that state, the glass is a pool.
Ruddy are his eyes and ruddy are his claws
When light comes down to wet his frothy jaws (*CP* 197).

The lion is an earlier permutation of the “rock” of reality and appears here to be a living representation of the physical pressure of reality. The lion, as light, exerts its will to transform the passive glass of water into a mirroring pool. For a transient moment, “there”

and “in that place,” the eye takes the form dictated by the light before the pressure of imagination pushes back. As the rhyme structure indicates, the central line of the stanza is the axis on which vision turns. In the last two lines, the eye is the source of light, “wetting” the jaws of the lion and coloring his eyes and claws a bloody red. The lion is truly an “abstraction blooded,” altered by the body and painted in the color of its thoughts. Thus, the stanza is a mirror, a meeting of light and a visual representation of the moment when the “lion in the lute” stands “before the “lion in stone” (“The Man with the Blue Guitar” XIX, *CP* 175).

While the eye may be a mirror, passively receiving the forceful impressions of a dynamic reality, Stevens is careful to note that this position is a “state,” one property of a perceptual apparatus that is equally dynamic. Likewise, the “state” in which the lion is illuminated—wetted and colored by the force of the perceiver’s vision—is only another form of vision, one end of the spectrum of functions that characterize vision. The glass of water “in which winding reeds move round” is the true center, the physical, fluid-filled eye with its winding nervous network; however, this center is a battlefield that cannot hold. Even as the lion of reality, a potentially violent force, attempts to overwhelm perception, the equally violent force of the imagination pushes back. Behind the eye, the alterations, the “refractions, / *The metaphysica*, the plastic parts of poems / Crash in the mind.” If the eye is a center, it is a tenuous one located between the reflections of reality and the refractions of the imagination. As he declared earlier in the poem, it is “merely a state, / One of many, between two poles.”

Ultimately, Stevens’ poem transforms the two theories of vision into competing, but complementing extremes in precarious tension. However, “The Glass of Water” ends by

shattering the fragile instrument it has so carefully constructed. Reality comes to the eye in the form of light, and the eye “colors” and “increases” that reality. This perceptual process generates poetry, which Stevens describes in “The Noble Rider and the Sound of Words” (1942) as the addition of “nobility” to the bare facts of nature. Yet he also notes that such “nobility exists in art today only in degenerate forms or in a much diminished state” (NA 13). Stevens’ lecture is primarily about the failure of the imagination, the degradation of poetry and myth in the face of the “pressure of reality...the pressure of an external event or events on the consciousness to the exclusion of the power of contemplation” (NA 20). Unquestionably, Stevens has in mind the politically conscious poetry of the 1930s that had transformed poetry into an instrument of propaganda and the escalating violence in Europe that threatened to make poetic “contemplation” irrelevant and anachronistic. Like the contemporaneous lecture, “The Glass of Water” must finally lament the replacement of the imaginative center, the eye, with another, more materially-minded “centre”:

Fat Jocundus, worrying
 About what stands here in the centre, not the glass,

 But in the centre of our lives, this time, this day,
 It is a state, this spring among the politicians
 Playing cards (CP 197-98).

As he shifts centers, Stevens also dissolves the chemical metaphor from the first stanza, which he used to describe the changing “states” of perception, to expose the grossly materialistic connotation of “state” on the lips of politicians and poets throughout the ‘30s. The violent stalemate between the noble lion of reality, and his counterpart, the “lion in the lute,” gives way to real bloodshed, the ugly facts of “dogs and dung.”

In *Wallace Stevens: Words Chosen Out of Desire* (1986), Helen Vendler warns potential readers to be wary of the beginnings of Stevens’ poems, which are often mis-steps

rather than first steps. Yet in “The Glass of Water,” the initial assertion that all states are transitory and contingent finally rescues Stevens’ poetic vision. The “State” of the politicians is still a “state,” dependent on a perspective tied to “this time, this day.” As in “The Noble Rider and the Sound of Worlds,” the pressure of the imagination pushes back against the pressure of reality, and even “Among the dogs and dung, / One would continue to contend with one’s ideas” (198). Because this state, “this spring among the politicians,” shall someday pass, the political war between ideals becomes a smaller version of his own struggle to order an endlessly shifting reality. The alliterative dogs and dung, the rhetorical card games of the politicians, are just another type of poetry, and, like poetry, must change with the changing face of reality.

Stevens recognized the complex nature of vision, and by doing so, became one of the first poets to understand that the eye both illuminates and mirrors reality. However, by making change the second condition of the Supreme Fiction, he also conceded that all acts of vision are failures. “We never see reality immediately,” he wrote, “but always the moment after it is a poetic idea” (*Letters* 722). Because of change, the mind must “continue to contend with [its] ideas,” refashioning its ordering fictions to match the dynamic nature of reality. Yet, one cannot simply find truth by “turning a mirror round and round” if both the mirror and the reality it reflects are shifting. Indeed, when Stevens uses a similar image at the end of *Notes Toward a Supreme Fiction*, it is significantly more complex and ambiguous:

flicked by feeling, in a gilded street,
I call you by name, my green, my fluent mundo.
You will have stopped revolving except in crystal (*CP* 407).

The caesura in the first line signals the moment of perception, a synaptic space in which the eye “flicked by feeling,” meets the uncertain light of the sun on the “gilded street.” As

such, this vision is a culmination of the desire expressed in the poem's epigraph, the marriage of inner and outer light, "the uncertain light of single, certain truth, / Equal in living changingness to the light / In which I meet you, in which we sit at rest." While the last line indicates a sort of rest, a "vivid transparence," it agonizingly promises both stasis—a world momentarily fixed in the crystal of the eye—and leaves open the possibility ("except") that both the "fluent mundo" and the "crystal" are revolving in a kaleidoscopic multiplication of meaning. Stevens' use of the word "flicked" seems to borrow not only from "flick" (to push lightly and suddenly) but also "flicker," which alludes to the flame-like light, the "living changingness" of the poet's perception. Like Stevens' theory of aesthetics, the poem ends divided, suggesting an experience of the sublime, a vision of infinite regress, and pushing for a limitation of vision, a subtraction of the self to reveal things as they are.

The "More Than Rational Distortion" of the Retina

Stevens recognized that the eye can be neither a passive receiver of light nor a lamp that can envision a reality independently of an external source. Instead, perception is characterized by both dependency and distortion; the eye cannot function without light and the mind cannot receive light except through a series of refractions, concentrations, and interpretations. While these processes are usually associated with cognitive functions occurring in the cortex, these processes also occur in the eye itself: the light is refracted by the cornea and lens; concentrated into the fovea where a few meaningful qualities (red, green blue) are isolated by the cones; and then interpreted by ganglion and bipolar cells based on the location and intensity of the signal. The retina "creates" colors through the association of different cones, and creates rudimentary images as it collects and synthesizes information.

To appreciate Stevens' concept of vision fully, however, one must also understand that the refractions of the crystalline lens are designed to create a predictable and purposeful pattern on the retina. In a similar way, the concentrations of the retina are designed to limit visual information to improve clarity and efficiency. In other words, the eye distorts so that it can see more clearly. In a similar way, the poet creates fictional arrangements, "aesthetic integrations," of reality to make it more visible. As Stevens argues, "the structure of poetry and the structure of reality are one, or should be" (*NA* 81). It is not too much to say that the structure of Stevens' imagination, with its emphasis on analogy and integration, is one with the structure of vision, which is similarly dependent on the "metaphorical" capabilities of the rods and cones and the integrations of the retinal layers of bipolar and ganglion cells.

Because the "mind is smaller than the eye," the imagination is constantly attempting to understand and circumvent the physiological restrictions that shape and color our ideas ("A Fish-Scale Sunrise", *CP* 161). Thus, the eye and the imagination are engaged in a struggle that mirrors the process of vision: the mind not only depends on the images of the eye, but also attempts to shape these personal distortions of reality into something beyond itself.

Once Stevens realized that vision is "a more than rational distortion," he also understood that "the difficultest rigor is forthwith, / On the image of what we see, to catch from that // Irrational moment its unreasoning (*Notes*, *CP* 398).

Although the role of the retina and its photosensitive rods and cones is now a fundamental part of our understanding of vision, these essential facts of vision only emerged at the end of the nineteenth century. After the fall of the Roman Empire, the emanation theory of vision persisted for over a millennium, helped along by religious restrictions during the Dark Ages that banned dissection. Scientists were forced out of the laboratories and into

the libraries, re-interpreting evidence collected during the classical period rather than gathering their own.⁵⁰ Yet the centuries-long halt in our understanding cannot be blamed entirely on the proscriptions of the Church. Although the advent of the Renaissance ended these draconian limitations on science, it was not until the end of the nineteenth century that anatomists were able to describe the visual apparatus with any kind of accuracy. Scientists were initially hampered by a basic lack of understanding of light physics and this, in turn, restricted development in the field of optics and limited the strength of microscopes for centuries.

Despite these hindrances, anatomists developed clever experiments to show that the retina and not the crystalline lens was the true photoreceptor. Swiss scientist Felix Platter (1536-1614) observed that the removal of the connective tissue between the crystalline lens and the retina (the araneal tunic or Zonule of Zinn) did not eliminate vision. This proved that the crystalline lens played a much smaller part in vision than originally believed and showed that it served mainly a mechanical role in the collection and refraction of light. (Polyak, “The Vertebrate Visual System” 35-6) By effectively removing the foundations of the emanation hypothesis, Platter’s discovery allowed physicist Johannes Kepler to reformulate the emission theory of perception. Applying recent theories in the study of light, Kepler proposed a dioptrical theory of vision that accounted for the two chambers of the eye (36). In the first chamber, the pupil restricts the amount of light passing onto the lens in a way similar to the aperture of a camera. In the second chamber, the light, refracted by the crystalline lens, falls on the retina to create a real (although reduced and inverted) image. As Aristotle

⁵⁰ It is important to note that these restrictions did not affect the Muslim world, which became the center of science and technology during the Dark Ages. The work of Ibn al-Haitham Al Hazan (Alhazan; 965-1040 AD) was particularly notable. Although Alhazan effectively proved that light travels in straight lines, and developed a remarkable accurate theory of vision, it would take centuries before Western scientists made these same discoveries. See Polyak, *The Vertebrate Visual System* 14-21.

had suggested centuries earlier, the anterior chamber (before the lens) is filled with a transparent, water-like fluid, the aqueous humor. Likewise, the posterior chamber is filled a transparent, though more viscous fluid called vitreous (glass-like) humor (Helmholtz I.4). These fluids conduct light while exerting pressure on the walls of the eye, maintaining the shape of both chambers so that refraction is constant and predictable.

These studies shifted focus from the crystalline lens to the retina, a structure that revealed increasing complexity with each advance in microscopic technology. During the classical period, the retina was thought to serve a nutritive function, keeping the eye supplied with necessary nutrients through its dense network of blood vessels. Because these vessels are the feature most apparent to the naked eye, Greek physicians gave the retinal layer (or “tunic”) a number of names based on its web- or net-like appearance. By the first century AD, the Greek physician Rufus of Ephesus could provide no fewer than three names for the retina:

The third [tunic] contains the “glasslike humor”; its ancient name is the “spider-web membrane,” coming from its thinness; as Herophilos compared it to a fishing net being collected, some physicians call it the “net-like tunic.” Others call it the “glassy tunic” because of the humor which it contains (*On the Naming of Parts* par. 153 translated from French by the author).

By the nineteenth century, scientists had discovered that the retinal layer was actually many layers, each with a separate function. Again, however, the structure of the eye would prove counter-intuitive. Just as Greek physicians had hypothesized that the crystalline lens, being the first struck by light, was the true photoreceptor, anatomists held to the belief that the first layer of the retina, not the embedded layer of rods and cones, was the site where photoreception took place. Although Gottfried Reinhold Treviranus (1776-1837) identified the “papillae” (rods and cones) and hypothesized that they played a role in photoreception, he

guessed that this layer of cells must face toward the light and adjusted (or fabricated) his illustrations of the retina accordingly. Soon after, Freidrich Heinrich Bidder (1810-1894) proved that the rods and cones were located in the deepest layer of the retina but made a similar mistake when he concluded that their role in photoreception was limited to mirroring or intensifying light for the “true” photoreceptors at the surface (Finger, *Origins* 79).

As microscopic power increased, the understanding of the retina advanced rapidly. In 1852 Heinrich Muller (1820-1964) and Albert Von Kölliker (1817-1905) distinguished two types of photoreceptive cells, the rods and cones, and correctly described the layers of the retina (Finger, *Origins* 79; Polyak, *The Retina* 164). Soon after, Max Schultze (1825-1874) hypothesized that the rods were responsible for night vision (which lacked color) and the cones provided color vision in the daylight (Finger, *Origins* 80). Again, however, it was Santiago Ramón y Cajal who made the most substantial contribution to the study of the retina. The retina played a major role in the advancement of neuron theory, as Cajal used it to show that the retina was divided into a number of structurally and functionally distinct cells and, furthermore, that the information in the retina moved in only a single direction (dynamic polarization).

Cajal identified ten retinal layers, composed of three major types of nerve cells: the photoreceptors (rods and cones), the bipolar cells, and the ganglion cells (*The Structure of the Retina* 18). As Cajal described it, the process of image-formation begins when light strikes the photoreceptors, the cells deepest in the retina and the only ones sensitive to light. The information from a number of photoreceptor cells is sent to the bipolar cells; one set of bipolar cells synthesizes information from the cones, forming complex perception of color, while the other set synthesizes information from the rods to provide information about light

intensity and movement. The last group of cells, the ganglion cells, synthesizes information from the bipolar cells and sends it to the visual cortex. Cajal hypothesized that these cells further refine perception of light and color and “make connection exclusively with either the bipolar cells destined for the cones or with the bipolar cells destined for the rods” (*The Structure of the Retina* 156). Significantly, the actual image sent to the visual cortex results from a combination of a refracted light pattern projected on the retina and the interpretation of that image through the spatial organization of rods and cones.

By Stevens’ time, it was thus understood that there is never a “real” image sent to the mind but that the process of vision involves an interpretation of the rods and cones and the bipolar cells. These anatomical revelations lurk in the background of Stevens’ description of visual perception but often come to the foreground in poems directly dealing with physiological process of vision. While not medically trained like Stein and Williams, Stevens had both personal and philosophical reasons to be preoccupied with visual anatomy. In her biography of Stevens, Joan Richardson notes that he experienced “blurring of vision” during a trip to Florida in 1926. Upon returning home, Stevens was diagnosed with “sclerotic changes in the retinal vessels as a result of a series of hemorrhages” (*Later Years* 46). This condition, now referred to as “copper wiring,” occurs when hemorrhages harden the capillaries in the retina and starve the nervous tissue, slowly killing nerve cells and preventing the eye’s normal operation. Whether fueled by the stress of the insurance business or Stevens’ culinary indulgences, this condition would reappear intermittently throughout his life, forcing him to diet and ensuring the regularity of his walks through

Elizabeth Park.⁵¹ One can only guess what Stevens learned about the visual system during and after his diagnosis, but it seems that Stevens—a poet faced with blindness and an insurance lawyer whose career depended on statistics and fine print—equipped himself with the essential anatomy of the eye.

While we may never know the extent of Stevens’ anatomical knowledge, there is much in his poetry to suggest that his understanding of the eye was deep and detailed even before his 1926 diagnosis. “Tattoo,” a short and little discussed poem from *Harmonium* (1923) reveals that Stevens’ questions about vision were not only metaphysical and psychological, but also physiological. In the most basic sense, “Tattoo” is an anatomical journey through the eye that turns upon the most fundamental question occupying neuroanatomists of the time: the nature of image-formation.

The light is like a spider.
It crawls over the water.
It crawls over the edges of the snow.
It crawls under your eyelids
And spreads its webs there--
Its two webs.

The webs of your eyes
Are fastened
To the flesh and bones of you
As to rafters or grass.

There are filaments of your eyes
On the surface of the water
And in the edges of the snow (*CP* 81)

In the first and second strophes, Stevens parses the process of vision. First, the spider (light) crawls “over the water,” a process analogous to the passage of light through the cornea and into the water-filled anterior chamber of the eye. Next, the light crawls “over the edges of

⁵¹ Stevens mentions trips to the eye doctor several times in his letters. In 1946, he wrote to José Rodríguez Feo, “one reason why I went to New York is to see my eye doctor. At my age trouble with one’s eyes is rather frightening” (*Letters* 544).

the snow” as it is refracted by the crystalline lens—the “icelike” humor. Finally, in the posterior chamber, the spider “spreads its webs,” as light contacts the retina, the arachnoid membrane or “spiderweb tunic.” As Cajal and other neuroanatomists had noted, the retina sends this signal through a mass of axons that closely resemble “rafters or grass,” axons that eventually send the signal deep into the brain, into “the flesh and bones of you.” It is not too much to say, as George Lensing does, that the poem is “almost an exercise in optical physics” (168)

Yet in the process of making such an expanded and explicit physiological metaphor, Stevens also interjects his own concerns about the nature of visual perception. The location of Stevens’ “two webs” is ultimately indeterminate, an ambiguity that confuses the boundary between the physical eye and the retina and makes it difficult to identify where the image originates. Lensing concludes that the spider “spins its webs both within (your eyes) and without (water and snow),” suggesting that only the poet himself can act as arbiter and “superimpose the images of spider and tattoo” (168). In this reading, the poet works in the synaptic space of the eye to create a meaningful reconciliation between real and abstracted images, the thing itself and its tattooed shadow. When the spider “crawls under your eyelids,” it builds a web that is a distorted reflection of its original creation, a secondary impression of light first cast on the world. “Tattoo” thus becomes a poem of winter as the perceiver attempts to erase the subjective distortions that obscure vision, becoming, like the snow man, “nothing himself” to see nothing but the “real” image before the eye. In this reading, the original image (a pool of water ringed with snow) becomes a metaphor for the eye itself in its attempts to achieve a mirror-like surface for reflection.

While this reading is convincing, it hinges on the existence of a “real” or original image for the eye to reflect. However, Stevens’ language suggests that such a primary image never existed and that the eye is an image-making, rather than an image-reflecting, organ. Much like a tattoo itself, the first web spun by the spider is already under the eyelids, underneath the skin. If the first web exists within, rather than without, the eye, there is no original for the eye to copy and no reality beyond the falsifications of the retina. When one considers the possibility that the two webs both exist within the eye (representing the original image on the lens and the refracted image on the retina or, equally likely, the two retinal images that must be consolidated in every act of binocular vision), the poet’s position as arbiter becomes less certain.⁵² Read this way, vision is a projection of the eye outward, just as the “filaments of your eyes” are superimposed on the landscape. Both Lensing (and James Baird, in an earlier reading of the poem), suggest that these filaments might be references to the rods and cones that provide the eye with its image-making properties. Considering the other anatomical imagery in the poem, this seems likely; however, it also seems likely that a poet writing in the age of Edison would understand “filament” in another sense, as the source of illumination in an incandescent light bulb. Once again, Stevens simultaneously describes the eye as a mirror and lamp, passively receiving light and actively projecting images on the surrounding world.

“Tattoo” marks a significant moment in the development of the Supreme Fiction because it explicitly sets limits on the capabilities of human vision and, as a consequence, indicates the boundaries of human knowledge. While acknowledging light as a constant, the

⁵² The problem of binocular vision, which synthesizes dual perspectives of reality, lies in the background of “Le Monocle de Mon Oncle.” Joan Richardson claims that “One of the primary functions of the figure of “Le Monocle de Mon Oncle” was to raise the central problem of perspectival duality that characterizes perception—vision through a monocle being different from vision through the other eye and from normal binocular vision” (503).

poem also underlines the interpretive aspect of vision, the transformation of an impressionistic mosaic of surfaces into an image of reality. The spider spins webs both within and without but, as Baird notes, “the web of light spreads *over* water and snow...the filaments of the eyes are *on the surface* of the water and *in the edges* of the snow” (122).⁵³ The bottom of Stevens’ poetry, the bare reality of the rock under the moss of interpretation, is not truth but a constellation of inherently interpretive “facts.” As Stevens describes it in *Notes Toward a Supreme Fiction*, the nothingness achieved by the icy eye is “a nakedness, a point / Beyond which fact could not exist as fact” (CP 402). Earlier in *Notes*, Stevens seems to clarify this statement, “the bride is never naked. / A fictive covering / Weaves always glistening from the heart and mind” (CP 396). As in “Tattoo,” the weavings of the sun always cover the naked world and the naked perceptions of the eye, preventing a clear vision of Stevens’ bride, his “fat girl” and “fluent mundo.”

With its emphasis on vision as neurological “weavings” of light, Stevens’ poetry reflects the new scientific understanding of the eye, which similarly revealed how much light is interpreted in the physical act of perception. At every step in the process of vision, the anatomy of the eye determines the images imprinted on the retina; muscles variably restrict the light entering the pupil, adjust the refraction of the lens, and determine where light falls on the retina.⁵⁴ Scientists had already begun applying these findings to the fields of philosophy and psychology, calling attention to the physiological limits of perception and knowledge. Hermann von Helmholtz (1821-1894) whose theories of energy were so integral

⁵³ Baird makes a fine, and seemingly unnecessary, distinction between Stevens’ use of prepositions. Because the webs are *over* the water and snow and the filaments are *on* the water and *in* the snow, Baird concludes that the perceiver is allowed to “*possess* the objects” (122). However, these prepositions seem less important than the nouns—“surface” and “edges”—that seem to deny such a possession.

⁵⁴ The brain depends on a very small area of the retina, the fovea, for most of its information about form and color. In the fovea, cones are found with the greatest density, and connect directly to bipolar cells with a one-to-one ratio. Because of this fact, the eye is continually adjusting so that the image is focused directly on the cells of the fovea. See Polyak, *The Retina* 197-210.

to Freud's conception of mind (See Chapter 2), described the process of vision as a series of "unconscious conclusions" formed through a mixture of perceptual data and experience. Not only does the brain create a single binocular image by combining spatial information from both eyes, but it also learns to account for cases of "perspective distortion" where that spatial information is wrong (11). Because our vision is based on "conclusions from analogy," Helmholtz argues that

Our apperceptions and ideas are *effects* wrought on our nervous system and our consciousness by the objects that are thus apprehended and conceived. Each effect, as to its nature, quite necessarily depends both on the nature of what causes the effect and on that of the person on whom the effect is produced (19).

By thus asserting that perception begins with "effects" of reality rather than real images themselves, Helmholtz must ultimately conclude that the eye's truths are "practical truths" dependent on the interests of the perceiver. Finally, then, we can never eliminate the distortions of eye, but through a conscious effort we come to understand the habits of vision the way a "person gazes through a prism and executes movements of his body and hands as they appear in his field of view, [but] soon learns to see through the prism correctly" (537)

Like Stevens, Helmholtz views vision as a distortion of reality, describing the objects of perception as "effects" or "an array of facts" already directed towards a specific purpose. The structure of the retina filters and interprets, limiting the scope of reality and selecting useful information (16). While previous theories argued that vision was empirical (based entirely on experience or Platonic ideals) or intuitive (mirroring the actual structure of reality), Helmholtz identifies the importance of *identity*—the unique physiological characteristics of the eye—in the act of perception. He notes that "vermillion" would be interpreted as red to a human eye but black to a color-blind animal, suggesting that "we should not speak of the light reflected from vermillion as being red, because it is not red

except for certain types of eyes” (22). Like someone viewing the world through a prism (elsewhere Helmholtz uses the analogy of a pair of spectacles), we accept these distortions as truth, “we learn to interpret the world under these changed conditions” (3). These spectacles can never be removed but, Helmholtz claims, we can become aware of the mechanical limitations of vision and our individual habits, allowing us “to acquire the faculty in large measure of overlooking them and of forming our opinions of objects independently of them, even when they are so pronounced that they might easily be noticed” (7). Helmholtz thus advocates a process analogous to Stevens’ “decreation,” the awareness and subtraction of pre-existing distortions of perception.

It is easy to see how Helmholtz’s theory of vision inspired a young Edmund Husserl to develop the method of phenomenology in which the identity of the perceiver was subtracted from perception, and in turn influenced Martin Heidegger’s pursuit of *Dasein*. Both the work of Husserl and Heidegger have been integral to the study of Stevens’ poetry, but in many ways Stevens’ modest goals were more in line with the grandfather of phenomenology than his offspring.⁵⁵ Rather than attempting to discover the “essence” of Being, Stevens’ definition of decreation describes a limitation of truth rooted in the subjective nature in perception: “The greatest truth we could hope to discover, in whatever field we discovered it, is that man’s truth is the final resolution of everything” (NA 175). This is not the same as saying that man’s truth *resolves* everything, for every perception of truth leads back to the same restraints of identity that Husserl and Heidegger seek to overcome. As Stevens claims, the central distinction between poetry and philosophy lies in their methods of seeking truth; poetry is personal not in the “pejorative sense,” not in the

⁵⁵ Although Husserl and Heidegger are almost ubiquitous in Stevens criticism, the most extensive phenomenological reading of Stevens’ poetry is still Thomas J. Hines *The Later Poetry of Wallace Stevens* (1976).

sense of something false or subjective as Husserl or Heidegger would have it. As Stevens writes in “The Figure of Youth as a Virile Poet,”

If it is personal in a pejorative sense its value is slight and it is not the equal of philosophy. What we have under observation, however, is the creative process, the personality of the poet, his individuality, as an element in the creative process; and by process of the personality of the poet we mean, to select what may seem a curious particular, the incidence of the nervous sensitiveness of the poet in the act of creating the poem and, generally speaking, the physical and mental factors that condition him as an individual (NA 48).

Here “personality” seems inseparable from physiology, and the creative process exposes—through the collision of the object of perception and the “nervous sensitiveness” of the poet—the unique “physical and mental factors” that distinguish the self from other selves. The poet recognizes that the images he perceives and the images he creates are, to borrow Helmholtz’s language, *effects* that simultaneously expose the nature of the object and the nature of the person on whom the effect is produced.

Each act of vision thus exposes not only the things perceived but also the self, “the irreducible X / at the bottom of imagined artifice” (“Someone Puts a Pineapple Together” NA 83). While vision attempts to divide the self and the real world, it is also, by necessity, a compound between physiological preconceptions and real objects. Likewise, Stevens’ poetry self-consciously attempts to impose meaningful arrangements on reality, but always finds that that these arrangements reveal his own irrational desire rather than a rational order; as he writes in “So-And-So Reclining on her Couch,” “The arrangement contains the desire of the artist” (CP 298). Again and again, Stevens inserts himself in this synaptic space at the center of the struggle between universal truth and individual physiological limitations.

Nowhere does this struggle between truth and anatomy play out more fully than in “Bouquet of Roses in Sunlight,” a poem in which Stevens questions whether vision (and

poetry) corrupts or creates meaning. If metaphor—whether visual or linguistic—is an irrational distortion, Stevens asks, can it be a source of truth? Initially, he seems to answer in the negative, describing any visual interpretation as an evasion of the truth. In the opening lines of the poem, Stevens describes vision in terms that closely resemble Helmholtz's:

Say that it is a crude effect, black reds,
Pink yellows, orange whites, too much as they are
To be anything else in the sunlight of the room,

Too much as they are to be changed by metaphor,
Too actual, things that in being real
Make any imaginings of them lesser things. (*CP* 430)

The poem begins with a characteristic assertion/evasion; suppose, Stevens proposes, that the colors I see are “crude effects” of nature, the bare reality of sunlight reflecting off the room. In this sense, any act of metaphorical interpretation would not only decrease their real-ness but also diminish their potential truth; these things are “things that in being real / make any imaginings of them lesser things.” If the object of vision is to reveal essential truth, the “actual” nature of things, the imagination is thus a burden rather than a benefit to perception, contaminating an essential thing by making it a compound.

Such a theory of vision attacks the foundation of poetry, making metaphor itself self-destructive as it transforms what is primary into subjective irrelevance. However, even as Stevens claims that reality is too real “To be anything else,” his language suggests that reality is never primary and always something other than a crude effect. Significantly, these effects are already compounded, existing as “black reds / pink yellows, orange whites.” Stevens had a predilection for such color compounds, which seem to indicate an awareness that secondary colors exist only as combinations of primary color (red, yellow, blue). As he notes in “The

Green Plant,” these compounds are evidence that reality (“the effete vocabulary of summer”) is a secondary creation rather than a primary essence:

The effete vocabulary of summer
No longer says anything.
The brown at the bottom of red
The orange far down in yellow,

Are falsifications from a sun
In a mirror, without heat
In a constant secondariness (*CP* 506).

As in “Bouquet of Roses,” the colors in “The Green Plant” are exposed as falsifications of the poorly-reflecting eye, making vision itself a “constant secondariness.” Color cannot say anything about itself, and the sunlight in the room can never be crude effect because it is always understood through the anatomical restrictions of vision.

To appreciate Stevens’ meditations on color, it is important to note that Helmholtz’s theory of perception—with its emphasis on anatomical distortion—came from his work on color vision. Although the actual understanding of how photoreceptors work would not come until after Stevens’ death, it was Helmholtz (along with Thomas Young) who outlined the trichromatic theory that described the eye’s perception of color. The Young-Helmholtz theory proposed that the three types of cones in the retina are associated with three primary colors (red, green, and violet) whose information is combined to produce the full spectrum of human vision. Thus, color vision itself is combinatory and, as Stevens’ poem suggests, the colors perceived by the eye are already joint creations of the sunlight and the anatomy of the eye. Following Helmholtz’s theory, Stevens’ “black reds” are already interpreted by the eye and “changed by metaphor.” The poem’s supposition immediately falls apart, and the fundamental, “crude” effects are exposed as effects in Helmholtz’s sense, as reflections of both the nature of the object and the observer.

Even as he proposes a theory of visual essences, Stevens thus undermines the idea of primary colors and images. Indeed, Stevens signals this change from crude effect, a consequence of sunlight, to complex effect, a consequence of anatomy, in the third and fourth strophes:

And yet this effect is a consequence of the way
We feel and, therefore, is not real, except
In our sense of it, our sense of the fertilest red,

Of yellow of first color and of white,
In which the sense lies still, as a man lies,
Enormous, in the completing of his truth (*CP* 430-1).

The poet's search for something primary is stymied by his own presence, and the things that were once "too actual" or "too real" to be subjected to the imagination are proved themselves to be imaginings—enormous "lies" of the senses. As Helmholtz argued, objects (and colors in particular) do not exist except in our sense of them; the red we see is only the "fertilest red," a color produced through the annihilation of subtle distinctions, the transformation of a mosaic of difference ("black reds" and "pink yellows") into a unified whole. Always alert to double meanings (especially ones that juxtapose seeming opposites), Stevens exploits both meanings of "sense." Not only does reality exist in our sensation of it, but also in the ordering fictions we create to make sense of nature, including the problematic designation of both yellow and white as primary or "first color."⁵⁶ Reality exists as a collaboration of both types of senses, it resides (lies) in sense and the senses rest content (lie still) with their figurations of it.

Of course, as I hinted above, "lies" has a third and perhaps more significant connotation: deception or falsification. The ordering fiction, the Supreme Fiction, that we

⁵⁶ While yellow, along with red and blue, are the fundamental building blocks of higher colors, white represents the full spectrum from which other colors are extracted.

call reality only gains validity through the enormity of its lie; reality is a fiction created by consensus. The pursuit or completion of Truth (certainly it deserves a capital here) to which humanism aspires relies on the elision of the primary fiction, the denial that our observations are in any way “colored” by sense of them. Stevens claims in the fifth strophe,

Our sense of things change and they change,
Not as in metaphor, but in our sense
Of them. So sense exceeds all metaphor.

Once purposefully confusing the dual connotations of “sense,” Stevens now separates these meanings with equal deliberation. The mind makes sense of things through metaphor, meaningful connections between the imagination and reality, but these metaphors cannot hold in a world defined by change. Sensation “exceeds all metaphor” because of its capacity to change with the world, its ability to shift its “sense of things” with each shift in light. One would be wrong, however, to interpret sensation as mirror-like alternative to the illuminating mind. Despite the implied parallelism in the first line of the strophe, the suggestion that reality and sensation change together without interference, the “and” does not stand in for “as” (Our sense of things change *as* they change) but instead indicates a latent cause-and-effect relationship (*Because* our sense of things changes, they change). Consequently, Stevens concludes in the next strophe that, just as sense exceeds metaphor, sensation “exceeds the heavy changes in the light.”

As the title indicates, the ultimate purpose of the poem is to capture, poetically, the “Bouquet of Roses in Sunlight” that were “too much as they are to be changed by metaphor.” The poem concludes that the complex significance of the roses, revealed in the dynamic coloration provided by shifting sunlight, cannot be understood by any single metaphor. Instead of erasing the individual limitations of vision, the filters of perception that color the

world, Stevens suggests that reality is the sum of these limitations. The shifting light on the roses can be matched only by “a flow of meanings with no speech / And as many meanings as of men.” Like Plato’s endlessly shifting mirror, the eye compounds, but never completes, meaning. This is, perhaps, why this meaning itself is speechless, displayed in Stevens’ endless figurations but never named or spoken.

To this point, the speaker’s efforts at description have been a failure, and the roses have existed beautifully, but hypothetically, in the mind of the observer. Having denied that meaning consists either in objective, “crude” reality or in subjective, metaphorical figurations of the mind, the speaker become almost Prufrockian in his endless preparations that never result in description. The poem verges on solipsism, yet, in the style of “The Idea of Order at Key West,” the poem reveals itself as a dialogue in the final strophe:

We are two that use these roses as we are,
In seeing them. This is what makes them seem
So far beyond the rhetorician’s touch (*CP* 431).

Expanding his earlier proposition that there are as “many meanings as of men,” Stevens worries that his failure of description marks an irreconcilable divide between the self and other selves. If one proposes that the eye is mirror, that the images it sees are crude, unadulterated effects of the sunlight, than we might arrive at a common vision. According to Stevens, however, the act of vision is based on selection, on utility, making us see “these roses as we are.” As vision multiplies meaning, changing with the changing light, so our individual anatomical prejudices extend this multiplication to infinity. In a final paradox, the roses are shown to exceed meaning—being too full of potential significance—and thus exceed the limits of signification to be effectively meaningless, “so far beyond the rhetorician’s touch.”

What ultimately rescues “Bouquet of Roses in Sunlight” from failure is the implicit assertion that this potential significance is, itself, significant. Stevens was always more comfortable with “Notes Toward” or “Ideas of” than a poet like Eliot, who was restless for completion. In another sense, the roses are touched by a true “rhetorician,” one who recognizes that the distortions of vision and language are themselves something meaningful, an expression of devotion to reality. While the meaning of the roses may be personal (as it always is between lovers), it is the act of giving, like the act of describing, that endows the roses with emotional significance. Stevens understood that “description is revelation,” and that vision is a fiction resulting from anatomical prejudices and emotional interests (“Description Without Place”, *CP* 344) However, Stevens differed from many of his fellow modernists, and phenomenologists such as Husserl and Heidegger, by embracing those distortions as a celebration of what is human, a part of the “gaudium of being” (*Owl’s Clover, OP* 71)

Above all, Stevens’ poems are hymns to reality, aspiring to express the limitless meaning of Truth while acknowledging the limited nature of human understanding. As he writes in *Notes Toward a Supreme Fiction*, reality is

the soft-footed phantom, the irrational

Distortion, however fragrant, however dear.
That’s it: the more than rational distortion,
The fiction that results from feeling. Yes, that (*CP* 406).

Stevens countered the rational distortions of the mind with the “more than rational distortions” of the eye, exposing the limits of vision in order to question the truth of our ideas of order. In a letter to Barbara Church, Stevens describes the distortions of cubism in a way

that reveals his own artistic goals, writing that “the whole effort of modern art has been about...the attachment to real things.” Stevens muses,

When people were painting cubist pictures: were they not attempting to get at not the invisible but the visible? They assumed that back of the peculiar reality that we see, there lay a more prismatic one of many facets. Apparently, deviating from reality, they were trying to fix it (*Letters* 601).

I would argue that Stevens’ poetry chronicles a lifelong effort to “fix” reality, and effort to replace one type of fixing—in the sense of preserving, classifying, or limiting—with another sort of fixing that removes rational constructions to repair or cleanses the process of vision itself. Although recognizing that each image of the eye is “a fiction that results from feeling,” Stevens understood that these fictions are compounds that disclose neither the truth at the back of appearance nor the essence of the self, but—metaphor by metaphor—provide a glimpse into both (*Notes, CP* 406).

Chapter 3: T.S. Eliot and the Hierarchy of Consciousness

Time past and time future

Allow but a little consciousness.

To be conscious is not to be in time

But only in time can the moment in the rose-garden,

The moment in the arbor where the rain beat,

The moment in the draughty church at smokefall

Be remembered; involved with past and future.

(“Burnt Norton” *CPP* 119-20)

In his *Principles of Psychology* (1890), William James famously described thought as a “stream,” a set of fragmented moments of experience connected through time. According to James, consciousness is fundamentally sensori-motor, consisting in nothing other than the sensory perceptions and motor responses that compose our interactions with the environment around us. Because that environment is constantly changing, our sense experience is discontinuous as it adapts to each new situation, characterized by an “alternation of flights and perchings” as consciousness moves between disconnected moments of experience and interim periods marked by residual nervous activity (I.243). Such an inherently fragmented consciousness represents a dramatic change from a long philosophical history that viewed consciousness as synonymous with unifying abstractions such as “mind” or “soul.” These ideal forms of consciousness were viewed as separate from the nervous system, preserving the self by dividing it from the material processes of the body. James would later claim in “Does Consciousness Exist?” (1904) that this immaterial consciousness is “on the point of disappearing altogether” and that “Those who still cling to it are clinging to a mere echo, the faint rumor left behind by the disappearing 'soul' upon the air of philosophy” (3-4). As consciousness “fell” from the transcendent to the material, the self was transformed into a fragmented collection of sensory stimuli and motor responses.

Despite this rejection of a transcendent consciousness, James' stream metaphor incorporates the type of immaterial component that he would later denounce. While separated into discontinuous moments, each nervous response is surrounded by a "fringe" that sustains consciousness until the next moment, an "echo of the whence" caused by the "dying excitement of processes" involved in brain-action (*Principles* I.257). Even while asserting the primacy of nerve processes, James still separates the physiological from the psychical, noting that we experience a sense of continuity because of the "waxing excitement of tracts or processes whose psychical correlative will a moment hence be the vividly present feature of our thought" (I.165). As James describes it, consciousness appears as a continuous stream only because a higher perspective combines and connects the isolated sensori-motor responses of the nervous system. Although the stream is composed of fragmentary moments of experience located in time, the psychical self seems to operate on a different time frame, located above or outside physical experience. In this way, the self is always prior to experience; the past constantly modifies our present through psychic overtones that alter the physical response of the nervous system. James' stream operates through an opposition between a physiological consciousness, the mechanical nervous activity that composes the lower consciousness, and a psychological consciousness, an awareness of the self seen through time and located above or outside the physical brain.

Eliot's interest in the juxtaposition of time and timelessness reaches its fullest expression in "Burnt Norton" (1936), in which he relates the problem of time to a definition of consciousness: "Time past and time future / Allow but a little consciousness. / To be conscious is not to be in time." Paradoxically, Eliot's poem argues that consciousness exists only in the immediate present, neither time past nor time future, but also "not... in time," in a

space outside sequential experience where “all time is eternally present” (*CPP* 117). In “Burnt Norton,” Eliot struggles to locate himself in the “always present” or “always now” in which the self is no longer divided between the potential (“what might have been”) and the actual (“what has been”) (*CPP*). For the post-conversion Eliot, this problem is viewed through the conflict between the mortal body and the immortal spirit, the purgation of the physical pointing the way to an existence removed from time, “emptying the sensual with deprivation / Cleansing affection from the temporal” (*CPP* 120).

Yet this conflict of consciousness emerges even in Eliot’s early work, in poetry that expresses conflicting visions of the self and prose that worries about the nature of experience in the face of “dissociated sensibility.” In the third section of “Preludes,” Eliot describes the soul as constituted of a “thousand sordid images” (*CPP* 12) unable to find unification because they cannot be related to a higher self. The fragmentation of sense experience is the particular problem of modernism; as Eliot describes it, “Our civilization comprehends great variety and complexity, and this variety and complexity, playing upon a refined sensibility, must produce various and complex results” (*SP* 65). Being subjected to an ever-increasing number of stimuli that necessitate a variety of complex responses, “the ordinary man’s experience is chaotic, irregular, fragmentary” (*SP* 64). As in James’ model, Eliot views consciousness as a series of fragmentary moments responding to the complex and shifting environment of modernism.

In “The Metaphysical Poets” (1921), however, Eliot contrasts this fragmentary material consciousness with the mind of the poet in which “these experiences are always forming new wholes” (*SP* 64). Poetry provides a site where these fragments can be given meaningful unity, subsuming discontinuous experience under a higher order. Eliot defines

poetry as “a degree of heterogeneity of material compelled into unity by the operation of the poet's mind” (*SP* 61). This conflict between momentary acts of experience and the higher mind, unified and timeless, complicates Eliot's conception of consciousness. Although Eliot describes the soul as a collection of heterogeneous images in the third section of “Preludes,” in the fourth section the narrator's consciousness is entirely different, given persistence by the

fancies that are curled
Around these images, and cling:
The notion of some infinitely gentle
Infinitely suffering thing (*CPP* 13).

Like James' “fringe,” these fancies provide a mechanism of association, combining fragmented images to reveal a persistent soul, “the notion of some infinitely gentle / infinitely suffering thing” (*CPP* 13). In this way, the poet's mind “amalgamates disparate experience” and brings together sensory materials, “the “noise of a typewriter” and “the smell of cooking,” into higher unity. The poetic mind orders the sensory mind and thought arranges feeling, bringing disconnected sensations together into larger, abstract patterns of meaning. The role of the poet is thus to fashion the materials of everyday practical experience into an ideal order, creating a pattern of meaning that transcends the fragmentation of its components.

As Piers Gray notes, Eliot formulates his idea of history, tradition, and poetry “through the dialectical interaction of the practical and the ideal” (170). Although the individual can arrange his ideas into a higher order, the art of poetry necessitates the communication of that order through feeling. The poet must translate ideal thought into practical experience, finding an “objective correlative” for that personal emotion. Eliot explains that the objective correlative is a “formula of that particular emotion; such that when

the external facts, which must terminate in sensory experience, are given, the emotion is immediately invoked” (SP 48). According to this model, feeling becomes both necessary and pathological, the fragmentary substrata of an idealized higher consciousness and the practical conclusion of all poetry as it seeks to communicate that consciousness to the reader. To create is to unify, but to communicate is to return that unified experience to its fragmented, sensory form. Consequently, Eliot’s aesthetic requires the intervention of consciousness and an escape from it, just as his doctrine of impersonality is built on the paradoxical claim that “only those who have personality and emotions know what it means to want to escape from these things” (SP 43). For Eliot, the creation of poetry requires the reconciliation of two forms of mind: the ideal consciousness “above” experience and the practical consciousness firmly grounded in sensation and feeling. Reflecting the ongoing debate about the nature of consciousness, Eliot uncomfortably balances the psychical and the physiological, the unity of the immaterial mind and the mechanism of the material body.

Jewel Spears Brooker also describes Eliot’s thought as “dialectic.”⁵⁷ In contrast to Gray, however, Brooker argues that Eliot’s dialectic, “a metamorphosis of Hegelian and Marxist dialectic, involves a play of opposites that moves forward by spiraling back (a return) and up (a transcendence)” (*Mastery and Escape* 3). Brooker connects this dialectic to Eliot’s skeptical refusal to choose between alternatives, his replacement of an “either/or logic of exclusion with a “both/and” logic of complementarity (18). I would argue, however, that a “both/and” logic requires a dialectic, but not necessarily a synthesis. Like many of Eliot’s critics, Brooker seems eager to prove Eliot’s ability to bring together opposing concepts and,

⁵⁷ Brooker describes the dialectic of Eliot’s thought in *Mastery and Escape* (1994), and earlier in an essay she co-authored with William Charron: “T.S. Eliot’s Theory of Opposites: Kant and the Subversion of Epistemology.” In *T.S. Eliot and Our Turning World*. Edited by Jewel Spears Brooker. London: Macmillan Press, 2001. 47-62.

as a result, is excessively optimistic about Eliot's ability to synthesize the diverse philosophical, spiritual, and poetical traditions that influenced his thought. Instead, Eliot's career appears marked by a restless skepticism that refutes any form of synthesis, creating his poetry through the unresolved conflict between irreconcilable positions. When Eliot does find his "still point" in *Four Quartets*, it effectively marks the end of this conflict and, significantly, the cessation of Eliot's poetic output. Even near the beginning of his career, Eliot expressed exasperation with the promises offered by the dialectical process. In a posthumously published and untitled poem written in 1914, Eliot writes,

I have searched the world through dialectic ways;
I have questioned restless nights and torpid days,
And followed every by-way where it lead;
And always find the same unvaried
Interminable intolerable maze.
Contradiction is the debt you would collect
And still with contradiction you are paid ("Oh little voices" *Inventions* 75).

Attempting to find a higher truth through the dialectic of philosophy, Eliot's skepticism left him only with a proliferating "maze" of contradictory positions. In the period before his conversion, Eliot establishes transitory unifying centers with which to organize experience, but finds that each ideal order falls apart in the face of his skepticism: "knowledge imposes a pattern, and falsifies, / For the pattern is new in every moment" ("East Coker" *CPP* 125). In this light, one could say that Brooker's horizontal dialectic, unifying equal but opposing positions, must always be subordinated to the larger, vertical dialectic suggested by Gray—the higher abstractions that synthesize thought fall apart when applied to practical experience. Eliot doesn't join concepts together, but places them in shifting patterns of knowledge that reflect the shifting patterns of the mind and nervous system.

In this chapter, I will argue that Eliot's divisions between "higher" and "lower" forms of consciousness, experience, and tradition can usefully be thought of as "synaptic" as they create divisions that enable communication. Rather than attempting a dialectical synthesis of past and present, Eliot instead worked toward a definition of tradition and culture in which previous forms of thought can provide material for the modern poet without a regressive movement to the past. In the first section, I will show how Eliot's concept of tradition reflects the neuroanatomy and neurology of his time, using evolutionary theories that uncomfortably join together the unifying cognitive powers of the higher brain and the regressive fixed patterns of the lower brain. The second section follows this hierarchical model of mind into a discussion of Eliot's "dissociated sensibility," which similarly connects unifying, creative thought with fragmented, automatic sensibility. Avoiding the extreme versions of mind offered by introspective psychology and behavioral science, Eliot believed that all thought must be rooted in physiological sensibility but also denied that this material consciousness marked the limits of the mind. Ultimately, I will argue that Eliot uses Remy de Gourmont's revisionary model of evolution to change the definition of "thought" itself, showing that the nervous system can be both personal and impersonal, intelligent and automatic. In both cases, the space of Eliot's hierarchy is synaptic, creating divisions between forms of consciousness and experience while suggesting ways in which the past can modify the present and thought can modify sensibility. Because this space allows communication, it can create contamination and dissolution just as readily as connection and unification. As I will argue, this danger forced Eliot into a continual effort to protect higher ideals in the face of practical experience, preventing his crafted order from dissolving into the fragmentation of nervous mechanism and modern life.

Eliot's use of synaptic space, and his hierarchical model of mind, results from conceptions of consciousness borrowed from neurology and psychology, from evolutionary theory and behavioral science, from literature and philosophy. Like the mind itself, these influences do not achieve synthesis but are instead assembled into patterns of meaning, communicating across seemingly insurmountable gulfs in their attempts to explain the nature of consciousness. In the final section of the chapter, I will argue that even Eliot himself is caught in the space between, unable to accept either higher or lower forms of unity. Like his character J. Alfred Prufrock, he recognizes that the self consists only of "nerves in a pattern," but all attempts to escape the tyranny of the nervous system result in an even more terrifying detachment from the external world, the solipsism of the conscious mind removed from the feeling body. Seeking a higher consciousness outside of time, the etherized patient can only drift into an unconsciousness that eliminates the sensory world: spread out on the table, but looking at the stars.

The Neurology of Tradition and the (D)evolution of Mind

"The way up and the way down are one and the same"

-Heraclitus (Epigraph to "Burnt Norton")

In the early twentieth century, all roads lead to Darwin. In Eliot's case, however, the evolutionary theories of Darwin were less influential than those of Herbert Spencer, whose humanistic optimism provided a perfect fit with Eliot's Unitarian upbringing.⁵⁸ Unlike Darwin, a cautious biologist who travelled the world cataloguing examples and collecting

⁵⁸ For a discussion of Eliot's relationship to Unitarianism in relation to Spencer's evolutionary theories, see Manju Jain's chapter on "Eliot and Unitarianism" in *T.S. Eliot and American Philosophy*. Eric Sigg provides a more general discussion of Eliot's Unitarianism and its relation to his Eliot's philosophy and cultural criticism in *The American T.S. Eliot*, 1-35.

irrefutable evidence for his theories of natural and sexual selection, Spencer applied the findings of natural scientists to expand evolution into a theory of biology, psychology, sociology, and ethics. The generalized theory of evolution that Spencer presented in his ten-volume work, *The System of Synthetic Philosophy* (1862-92), made him one of the most influential and controversial figures of the nineteenth century. Spencer was praised by those looking for a scientific basis to their political philosophy and mocked by those scientists who recognized the evidentiary gulf between scientific fact and social theory.

In a sermon delivered in 1948, Eliot remarked that “Herbert Spencer’s generalized theory of evolution was in my childhood regarded as the key to the mystery of the universe” (“A Sermon” 5). Although Eliot locates Spencer’s influence in his distant childhood, Eliot was re-reading Spencer as late as 1917, when he was preparing a set of lectures on “The Makers of Nineteenth-Century Ideas” (*Collected Letters* 193, 194). Whereas Darwin forced his readers to confront a vision of nature marked by random variation and bloodthirsty competition for resources, Spencer’s teleological approach asserted that each variation improved upon the last, moving each species toward a more efficient and complex interaction with its environment. In his *Principles of Psychology* (1855), Spencer argued for a strict correspondence between the mind and its environment, suggesting that each manipulation of the external world caused an alteration in the material structure of the mind.⁵⁹ While claiming that mental progress depended on the increasing complexity of the nervous system (which in turn depended on the increasing complexity of the environment), Spencer was nevertheless a believer in psychophysiological parallelism, the theory that mental (psychic) content and physiological activity corresponded but maintained a strict separation. The mind

⁵⁹ For a complete description of Spencer’s evolutionary model of mind, see C.U.M Smith “Herbert Spencer and the Problem of Mind: Part I. Herbert Spencer.” *Journal of the History of Biology* 15.1(Spring 1982):55-88.

and the nervous system, like the organism and its environment, were distinctly separated but intimately related.

Eliot's re-reading of Spencer occurred at an important time, when he was formulating the "impersonal" theory of intellectual inheritance presented in "Tradition and the Individual Talent" (1919). His description of tradition is based on the belief that the "mind of Europe," like Spencer's mind, brings together modes of thought separated by time but structurally simultaneous. In his dissertation, Eliot had explained that earlier forms of consciousness are retained in current forms, creating a structural and intellectual continuity:

When we turn to inspect a lower stage of mind, child or animal, or our own when it is least active, we do not find one or another of these elements into which we analyze the developed consciousness, but we find them all at a lower stage. We do not find feeling without thought, or presentation without reflection: we find both feeling and thought, presentation, reintegration, and abstraction, all at a lower stage (*KE* 17).

This description of mind both assumes and denies progress, dividing the mind into higher and lower historical regions but asserting their co-existence in the anatomical space of the brain. Similarly, Eliot's theory of tradition depends upon intellectual inheritance and succession but denies that any tradition can be superseded or replaced, "a perception, not only of the pastness of the past, but of its presence" (*SP* 38). As a result, both Spencer's description of mind and Eliot's construction of tradition suggest the possibility that thought can reverse its course, returning to older, vestigial forms of consciousness. The same structures that move consciousness higher and tradition forward can also send them downward, backward in time.

This movement is possible because Spencer describes the brain's structure as hierarchical, arranged into anatomical layers that display the sediments of evolutionary history. Just as evolution pushes organisms toward greater variety and complexity,

distinguishing “higher” from “lower” species, so consciousness is moved anatomically higher in the brain as it consolidates a wider scope of sensory information. Spencer writes that “In ascending from the lowest to the highest types of the nervous system, we see that the distribution and combination of nerve-fibres are so modified, as to make possible an increasing multiplicity, variety, and complexity of relations among different parts of the organism” (*Principles of Psychology* I.32). Thus, the increasing complexity of the nervous system corresponds to the increasing complexity of the species, bringing together different motor and sensory regions to create more diverse and specific responses to the environment.

If one takes Spencer’s theory to its logical conclusion, the highest and most modern form of consciousness would consolidate the widest variety of information. As consciousness moves higher, it transforms previous points of conscious consolidation into unconscious mechanism:

The true implication is that in any case the seat of consciousness is that nervous centre to which, mediately or immediately, the most heterogeneous impressions are brought and it is not improbable that in the course of nervous evolution, centres that were once the highest are supplanted by others in which co-ordination is carried a stage further, and which thereupon become the places of feeling, while the nervous centres before predominant become automatic (Spencer, *Principles of Psychology* I.105).

Spencer’s modern mind displays an increasing complexity as it coordinates more diverse information, assimilating an ever-widening degree of heterogeneous impressions. The physical structure of the brain reflects this change in function, ranging from the tightly organized lower centers to the extremely plastic higher centers. The lowest center identified by Spencer, the medulla oblongata, is responsible for the repetitive and stereotyped behavior that controls the heart and lungs and has “simple, clear, and complete connections” (I.41). At the other extreme, the highest centers in the cerebellum and the cerebrum, which Spencer

proposes are responsible for our perception of space and time respectively, have “involved, vague, and incomplete connections” (I.41). More plastic connections provide opportunities for variations in behavior. In these important spaces (which Spencer theorized forty years before the identification of the synapse) conscious acts of volition interject themselves into the system.

Although Spencer’s overly simplistic correspondence between the physical environment and the physical structure of the brain was widely criticized at the time, fifty years later Eliot suggests the same type of correspondence exists between the modern world and the mind of the poet. Eliot claims that the complexity of civilized life has altered the sensibility of the modern world: “We can only say that it appears likely that poets in our situation, as it exists at present, must be *difficult*. Our civilization comprehends great variety and complexity, and this variety and complexity playing upon a refined sensibility, must produce various and complex results” (SP 65). For Eliot, this complexity emerges both in the densely allusive content and the innovative form of the poem as it becomes “more and more comprehensive, more allusive, more indirect, in order to force, to dislocate if necessary, language into its meaning” (SP 65). The mind became more complex as it moved from fixed nervous connections to open forms and, likewise, the poem must become more “open” as it breaks from formal tradition. Thus, the complexity of thought and civilization is reflected in the poem itself, as form creates and limits ways of thought and feeling. Eliot writes that the poet must create new formal structures in order to facilitate new ways of meaning: “To create a form is not merely to invent a shape, a rhyme, or rhythm. It is also the realization of the whole appropriate content of this rhyme or rhythm. The sonnet of Shakespeare is not merely such and such a pattern, but a precise way of thinking and feeling”

(SW 63). Although part of a valuable tradition of “thinking and feeling,” tightly organized forms like the sonnet perpetuate old patterns of thought. The introduction of space, which provides allusive, indirect connections, allows the poet to alter these older patterns in an attempt to achieve a “modern” form. Significantly, Eliot chose not to abandon form but rather created new patterns of meaning that modified the past, forcing thought into structures that reflect the complexity of the modern age.

Unlike other proponents of *vers libre*, Eliot insisted that “the ghost of simple metre should lurk behind the arras in even the ‘freest verse’” (SP 34). Previous patterns of form, like lower patterns of thought, never die, but become the material (and the materiel) of the modern poet as he simultaneously extends and assaults tradition. Each departure from earlier, fixed forms not only marks the poet’s indebtedness to the past, but also creates a new configuration of meaning. Thus, the poet must not only amalgamate the disparate experience of modern life, made more complex by technology (“the noise of a typewriter”) and social demands (“falling in love”), but the poet must also unify disparate literary and intellectual traditions (“reading Spinoza”). Eliot’s description of this literary mind follows the anatomical model of Spencer’s hierarchy, describing tradition as an aggregate whole in which the past is never abandoned, but only subordinated. The literary mind “is a mind which changes, and that this change is a development which abandons nothing *en route*, which does not superannuate either Shakespeare, or Homer, or the rock drawing of the Magdalenian draughtsmen” (SP 39). Because each new poet unifies the tradition, becoming, in effect, a new seat of consciousness, Eliot argues that “No poet, no artist of any art, has his complete meaning alone. His significance, his appreciation is the appreciation of his relation to the dead poets and artists.” (SP 38) The complexity of the modern poet results not from

his novelty, but from his ability to bring together an increasing diversity of information into a new whole. In this way, Eliot's concept of tradition parallels Spencer's description of mind in its process of accumulation and succession:

If the doctrine of Evolution is true, the inevitable implication is that Mind can be understood only by observing how Mind is evolved. If creatures of the most elevated kinds have reached those highly integrated, very definite, and extremely homogeneous organizations they possess, through modifications upon modifications accumulated during an immeasurable past—if the developed nervous system of such creatures have gained their complex structures and functions little by little; then, necessarily, the involved forms of consciousness which are the correlatives of these complex structures and functions must have arisen by degrees. And as it is impossible truly to comprehend the organization of the body in general, or of the nervous system in particular, without tracing its successive stages of complication; so it must be impossible to comprehend mental organization without similarly tracing its stages (*Principles of Psychology* I.292).

The highest points of consciousness have the benefit of centuries of experience gleaned from the evolutionary challenges faced by lower species. It is impossible to understand the particular structure of higher consciousness without first comprehending the various stages of evolutionary progress that influenced the mind's final composition. Similarly, the structure of the poet's mind, and the structure of poetry itself, can only be understood if placed "among the dead" (SP 38). Eliot writes that "the difference between the present and the past is that the conscious present is an awareness of the past in a way and to an extent which the past's awareness of itself cannot show" (SP 39). Literary progress occurs not through a process of supersession but by the retention and accumulation of knowledge. Rather than abandoning older forms of thought as anachronistic, reinventing knowledge with each literary generation, each author must acknowledge an indebtedness to a past that is never completely overcome. Eliot disputes the claim "The dead writers are remote from us because we *know* so much more than they did" by simply answering "Precisely, and they are that

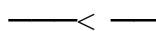
which we know” (*SP* 40). Although the dead are remote in time, their knowledge is simultaneous in space and immediately present for the poet.

Spencer’s theory of mental evolution provided Eliot with a theory of progress in which the present transcended the limitations of the past but relied on previous forms of knowledge for its foundation. If the poet is successful, his work will raise consciousness higher through its skillful synthesis of the past. This process requires the poet to translate primitive experience into the complexities of modern expression. In a 1918 review of Wyndham Lewis’ *Tarr*, Eliot writes that “The artist, I believe, is more primitive, as well as more civilized, than his contemporaries, his experience is deeper than civilization, and he only uses the phenomena of civilization in expressing it. Primitive instincts and the acquired habits of ages are confounded in the ordinary man” (“Tarr” 106). Eliot differentiates the mental activity of the ordinary man, which is a confused bundle of instincts and habits, from the action of the poet, which combines these instincts and habits into new patterns, thereby creating the possibility of new, complex behavior and meaning. As Lois A. Cuddy writes, “To Eliot...evolution became a structure and method to create order out of what seemed like senseless repetition of the same errors through history, and to effect an association between himself, his work, and all knowledge and experience in past, present, and future simultaneously” (40).

Despite this claim, Cuddy also correctly notes that Eliot remained skeptical of the notion of progress implied by evolutionary theory. By viewing the mind as continuous rather than strictly divided into primitive and civilized partitions, Eliot allowed the modern poet to build upon the past but also created the possibility of reversion. If consciousness can move upward, toward greater complexity and unification, it can also collapse into a fragmented

collection of primitive instincts. Eliot's model perches the mind precipitously atop the unsteady substrata of history, the "falling towers" of past cultures that famously crack and crumble in *The Waste Land*. Likewise, Spencer's description of evolution, although an optimistic description of human mental progress, introduced the possibility of devolution, the reversion of the mind to an earlier stage of evolution.

Throughout his career, Spencer warned that immoral behavior, from promiscuity and intemperance to disregard of traditional gender roles, could reverse the flow of evolution—a process he termed "dissolution"— permanently altering the structure of mind and returning it to its pre-civilized state.⁶⁰ Spencer's model of dissolution argues that the same process that moves evolution forward can also move it backwards, and similarly the same hierarchical structure that raises consciousness can propel it downwards. Eliot's concept of tradition follows a hierarchical structure in which each new author builds on the knowledge of the previous generation, allowing all knowledge, past and present, to exist simultaneously. In "The Dry Salvages" Eliot would write, "the past has another pattern, and ceases to be a mere sequence— / or even development: the latter a partial fallacy, / Encouraged by superficial notions of evolution" (*CPP* 132) The same structure that allows tradition to build through accretion also prevents it from escaping the past, creating the possibility of dissolution: "the way up is the way down, the way forward is the way back" (*CPP* 131). Becoming the "mind of Europe," the poet must also become the neurologist of tradition and culture as he preserves the development of mind.



One of the most prominent neurologists of the nineteenth century, John Hughlings Jackson is sometimes called the "Father of English Neurology" and became famous for his

⁶⁰ See the chapter titled "Dissolution" in Spencer's *First Principles* (1862).

extensive and innovative work on epilepsy.⁶¹ Jackson often professed his debt to Spencer, whose definition of dissolution became the basis for Jackson's understanding of epilepsy and other mental illnesses.⁶² Like Spencer, Jackson described the brain as a hierarchy of nerve centers, which Jackson divided into three regions based on their capacity for plasticity.⁶³ Spencer's "higher" organisms are more complex, more specially adapted to their environment, and Jackson's conception of mind follows the same pattern: "The higher the centre, the more numerous, different, and more complex, and more special movements it represents, and the wider the region it represents—evolution" (Jackson I.30). Because of their unique capacity to modify their connections, the highest centers are the source of willed behavior and creative thought, they are the "substrata of consciousness" (I.42). Jackson contends that the highest nerve centers are not only the foundation upon which consciousness stands, but also the medium upon which it operates.

This form of parallelism was common among neurologists and psychologists at the time and suggested that the mind communicated with brain across a type of space remarkably similar to the synapse, a nebulous connective space dividing the psychical from the physical. While Jackson emphasized the difference between mental and nervous activity, "states of consciousness (or, synonymously, states of mind) are utterly different from nervous states," he also implied that this activity is coordinated: "the two states occur together...for every mental state there is a correlative nervous state" (I.72). A self-declared materialist (like Eliot), he nevertheless seems reluctant to assert the primacy of the nervous system and define

⁶¹ For a description of Jackson's work in relation to nineteenth-century philosophy and neurology, see *John Hughlings Jackson: Father of English Neurology* (1998) by Macdonald and Eileen Critchley.

⁶² For a description of Jackson's model of mind and its relation to Spencer, see the second section of C.U.M Smith's two part article, "Evolution and the Problem of Mind: Part II. John Hughlings Jackson." *Journal of the History of Biology* 15.2 (Spring 1982):241-62.

⁶³ Jackson named these layers in an 1881 article (with a complete lack of creativity), "highest, lower, and lowest." In an article written a year later, he changed the names of the layers to "highest, middle, and lowest" (*Selected Writings* 29).

the nature of the mind-brain connection. As a result, Jackson paradoxically combines language that suggests a material bond between mental and physical states, correlation and communication, with language that suggests absolute division: “although the two things occur in parallelism, there is no interference of one with the other” (I.72). A neurologist and a citizen of the nineteenth-century reluctant to give up the ineffable mind or soul, Jackson attempts to explain mental phenomena physiologically while preserving the independence of the higher, synthesizing consciousness.

Jackson’s description brings to mind an equally confounding description of interaction without interference, the type of space contained in Eliot’s description of the mind of the poet as a “shred of platinum.” The platinum is a catalyst in the reaction, facilitating and accelerating a chemical transformation but not contributing its chemical identity to the final result. In a similar way, the poet’s consciousness enables the transformation of literary tradition into contemporary relevance but does not contribute to the poem. Eliot’s catalytic metaphor, like Jackson’s parallel model of mind, implies alteration without interaction:

The mind of the poet is the shred of platinum. It may partly or exclusively operate upon the experience of the man himself; but, the more perfect the artist, the more completely separate in him will be the man who suffers and the mind which creates; the more perfectly will the mind digest and transmute the passions which are its material (I.41).

Eliot locates perfection in the division between the suffering body and the creating mind, but he also idealizes a poetic mind dependent on the material passions. Although this suggests a “dissociation of sensibility,” here the relation between thought and sensibility is used metaphorically to describe the connection between the mind of the poet and the material of tradition. While Jackson attempts to free the mind from the physical brain, Eliot similarly attempts to free the poet from the confinements of tradition—with similar problems. Even as

Eliot attacks a sequential tradition, removing the burden of history, he makes the poet entirely dependent on history. The poet must “develop a consciousness of the past,” replacing a personal with an impersonal mode of consciousness. This process results in a “continual self-sacrifice, a continual extinction of personality” (*SP* 40). However, because the past is only the content and not the form of the poem, the mind must raise itself above the past, using the individual consciousness to digest and transmute the material of tradition. Eliot is attempting to ground himself in tradition while escaping from it, just as he is grounding himself in personality while creating an impersonal poetry.

Eliot’s problematic description of mental activity makes his goal clear. The artist must be shielded from potentially dangerous material, either the fragmentation of experience or the burden of tradition, while being allowed access to it. Thus, the poet directs tradition in order to avoid being directed by it, placing form over potentially disordering content. Jackson is equally clear that consciousness stands “above” nervous action, controlling and consolidating the nervous material in often unpredictable ways. Because the activity of consolidation depends upon the freedom of the nervous system, its ability to accept new configurations, the organization of the nervous system and the plasticity of its connections determine the form of consciousness. The highest centers, being composed of more numerous and more vague connections, have the capacity to form more complex configurations than the tightly organized lower centers. As the nervous system evolved, consciousness thus evolved with it: “As evolution progresses, consciousness is, so to speak, “raised higher” (I.86). While Jackson argues the content of mind is limited by the nervous system, its form is entirely determined by the associational activity of consciousness, activity that pushes the mind toward increasing complexity and variety.

Jackson and Spencer both claim that the anatomy of the mind reveals evolutionary progress, that the passage from tightly organized lower centers to loosely organized highest centers expands the scope of movement, intelligence, and volition. Like Spencer, Jackson's describes the brain as a sensori-motor machine. His assertion that the lower and higher centers differ in degree rather than kind creates the possibility that consciousness can revert to a previous level of evolution. One of Jackson's most important contributions to neurology was his use of Spencer's concept of dissolution to describe pathological nervous states such as epilepsy. Because consciousness rests upon a shifting anatomical substratum, Jackson theorized that abnormalities in the nervous system result in the dissolution of mind and the "lowering" of consciousness.

This lowering of consciousness can take many forms depending on the distance of the mind's journey into the past. Jackson noted that epilepsy can present with symptoms of varying severity, causing either a free-associational "dreamy state" or the complete loss of motor control resulting in seizures or coma. In the brains of epileptic patients, intense nervous discharge or nervous fatigue overcomes the "lines of resistance" in the highest centers, working its way downward until it meets a force strong enough to stop it. The brain is thus involved in an anatomical form of natural selection, determining the level of consciousness through "the survival of the fittest" (a term coined by Spencer)⁶⁴: "all mental states, healthy or morbid, are the survival of the then fittest states during activity of what are the highest arrangements at the time" (I.24). Jackson theorized that in epilepsy (and some other forms of mental disease) the patient reverts to an earlier stage of anatomical development, exhibiting increasing loss of volition and increasingly instinctual, automatic

⁶⁴ Spencer first used the term in his *Principles of Biology* (1866), suggesting it as an alternative to Darwin's "natural selection." In order to preserve the equality of the terms, and their authors, Spencer used them interchangeably. See Spencer's footnote on page 530 of the 1898 edition of *Principles of Biology*.

activity. Jackson's hierarchical construction of the brain, which preserves anatomical structures rather than replacing them, situated civilized consciousness and primitive instinct dangerously close together. The pathology of epilepsy indicated that consciousness was constructed upon an unstable anatomical foundation that, in cases of nervous dysfunction, could quickly return the mind to its primitive origins.

Eliot makes specific reference to epilepsy in "Sweeney Erect," one of several poems centering on the grossly sensual, animalistic "Apeneck Sweeney." As Robert Crawford notes, Sweeney represents Eliot's critique of evolutionary progress, an attack on the successive time-scale of evolution that presumed to separate man from his animal past. Interestingly, Crawford produces an 1897 advertisement for "Dr. Sweany," a St. Louis physician who specialized in "nervous debility" resulting from the fatigue of the brain (28). Attempting to cure patients from nervous degeneration, Crawford instead suggests that the "hirsute" Sweany (whom Eliot sketched with an enormous beard) became the emblem of evolutionary stasis, a reminder of the short distance between man and his hairier simian ancestors. Along these lines, Crawford argues that "Sweeney Erect," after creating the evolutionary series Orang-outang→Cyclops→Sweeney, relates these evolutionary stages to each other in a way that "upsets any progressive development by raising questions about what evolutionists and anthropologists discussed as 'reversion' and 'degeneration', countering all optimistic ideas about the growth of humanity" (106) Indeed, Eliot connects the evolutionary reversion of Sweeney, who is transformed from civilized barber to murderous animal, with the nervous degeneration of epilepsy. In "Sweeney Erect," the barber

Tests the razor on his leg
Waiting until the shriek subsides.

The epileptic on the bed
Curves backward, clutching at her sides (*CPP* 26).

The female epileptic's loss of motor control, resulting in uncontrollable muscle spasms, provides the complement to the uncontrollable primal instincts of Sweeney; both represent the shadow of evolutionary history. Sweeney and the epileptic are both victims of evolution, a point Eliot makes through the similarity between the epileptic's involuntary movements and Sweeney's: Sweeney "jackknives upward" just as the epileptic "curves backward" (*CPP* 25). However, the behavior that makes the epileptic a passive victim turns Sweeney into a violent aggressor; she "curves" and "clutches" while he "jackknives," "pushes," and "claws." Following Jackson's model, both Sweeney and the epileptic suffer from the same type of dissolution, a mental reversion that manifests itself in the loss of conscious control of behavior.

While Sweeney and the epileptic might be the victims of heredity, Eliot's ultimate targets (and Sweeney's?) are the prostitutes, the "ladies of the corridor" who appear at the end of the poem. Despite their self-conscious distancing from Sweeney, their attempt to feign refinement and civility, the ladies find themselves "involved, disgraced" in his brutish behavior. The prostitutes fear hysteria and epilepsy more than Sweeney because any loss of mental and moral control calls "witness to their principles" and threatens to reveal the truth behind their airs of propriety. The ladies recognize that the symptoms of hysteria "might easily be misunderstood" as a lack of taste, threatening the self-conscious civility of their household ("It does the house no good"). In their own way, their futile attempt to hide their primitive past under a veneer of culture makes them just as vulnerable as Sweeney and the epileptic. The animalistic "padding" of Doris as she brings smelling salts to revive the epileptic exposes this vulnerability, despite the fact that the "sal volatile" is served with a

shade of high society, “a glass of brandy neat.” Eliot shows that their home and their minds are haunted by the specter of degeneration, the primitive origins and base instincts so vividly represented by the barber/murderer Sweeney.

Even the glass of brandy, however, points toward dissolution. Not only was intemperance viewed as mental and moral weakness, a regression to primitive instincts, but the effects of alcohol itself were also thought to be caused by physiological dissolution in the brain. In the case of epilepsy and insanity, Jackson argued that a chronic neurological condition, a weakness in the higher centers of the brain, regularly returned the mind to lower levels of mental processing. At the same time, Jackson also notes that temporary dissolution of the mind can occur from drugs like alcohol and tobacco. According to Jackson’s theory, “An injurious agency, such as alcohol, taken into the system, flows to all parts of it; but the highest centres, being the least organized, “give out” first and most...and the lowest centres, being the most organized, resist longest” (I.47). The very lack of organization in the higher centers that makes them the foundation of consciousness also makes them most susceptible to fragmentation and dissolution. In contrast, the tightly organized lower centers, while producing stereotyped, mechanical behavior, can mount a strong defense against the “injurious agency.” This structure allows the brain to undergo a temporary dissolution, resulting in the increased expression of the lower centers and the emergence of impulsive, animalistic behavior.

In an early poem, Eliot describes the effects of alcohol in just these physiological terms, connecting alcohol intoxication with a reversion to a mechanical form of consciousness. In “The smoke that gathers blue and sinks” (1911), the combination of “torpid smoke of rich cigars” and “torpid after-dinner drinks” results in

The overpowering immense
After dinner insolence
Of matter “going by itself”
Existence just about to die
Stifled with glutinous liqueurs
Till hardly a sensation stirs
The overoiled machinery (*Inventions* 70).

Under the influence of alcohol, matter operates without the intervention of the conscious will, “going by itself” as it follows the unconscious mechanism of habit. Eliot’s mechanical imagery suggests uncomfortably automatic behavior: the brain becomes an “overoiled” machine that operates below even the level of sensation. This comatose state, devoid of both conscious thought and sensation, is dangerously close to death. When brain activity is reduced to this condition, resting in the lowest centers that control the activity of the heart and lungs, death is literally a heartbeat away. As Jackson notes, only the time-tested strength of the lowest centers separates extreme intoxication from death: “Did not the lowest centres for respiration and circulation resist much more than the highest do, death by alcohol would be a very common thing” (I.47). The death-in-life caused by alcohol, a reversion to an automatic form of existence, reflects the dangers inherent in a physiological interpretation of consciousness that reduces the anatomical space between the present and the past.

Because of this space, which threatens connection just as readily as it creates division, the “man that suffers and the mind which creates” are perilously close. The artist who attempts to escape civilization into a primitive form of consciousness may find himself the victim of his own nervous system, even more subject to the problems of modernity. As I will show later, this danger is readily apparent in “The Love Song of J. Alfred Prufrock,” in which Eliot’s etherized patient ponders a descent into the undersea depths of automation (“I should have been a pair of ragged claws”). However, Prufrock’s problem is one that emerges

repeatedly in Eliot's early poetry. In "Portrait of a Lady," Eliot's narrator escapes from the highly affected discussion of Chopin and the "attenuated tones of violins / Mingled with remote coronets" to the primitive "tom-tom" inside his brain (*CPP* 9). The movement backwards in evolution represents a movement downwards in the brain, a dissolution similar to that caused by epilepsy or a drug such as alcohol. It is not surprising, then, that this "capricious monotone" provides a prelude to a reverie that Eliot compares to a "tobacco trance" (*CPP* 9).

More surprising is the fact that this drug-like trance brings not mental descent but elevation: "Let us take to the air, in a tobacco trance, / Admire the monuments" (*CPP* 9). As the narrator moves lower in his brain, further back in evolution, he floats away from the firm ground of reality. Jackson describes a "dreamy state" of dissolution, a state that mirrors the state of drunkenness and causes the patient to be "at once 'less himself' and 'too much himself'; 'speaking more in detail, he is too little his highest self and too much his lower self. In one way he is less affected by externals; in another way he is more affected by externals'" (I.26). When higher brain activity is removed, the patient becomes unable to respond to external stimuli consciously. As a result, the patient seems "too much himself," becoming all personality as he ceases to interact with his environment. At the same time, the patient's inability to control the external world makes him increasingly passive. Subjected to transitory responses of his nervous system, the patient is "less himself" as he trades the integrity of the self for the flux of his environment. The "dreamy state" is a reversion to a more solid state of mind but is also an abandonment of the mind, an assertion of personality and an escape from it. In the first section of "Portrait of a Lady," this dual movement parallels the narrator's involvement with his female companion. At once ridiculing her artificiality, escaping into

the primitive recesses of his brain, he is also unable to escape from the relationship, making himself the object of ridicule. As Grover Smith notes, “the derision in which he holds her turns back upon himself” (*T.S. Eliot’s Poems and Plays* 10).

The narrator’s retreat into an earlier, more automatic version of mind makes him more sensitive to his surroundings and his personality more influenced by the lady he becomes increasingly intent on deserting. In the third section, the young man displays a mixture of pathetic submission and determination as he mounts the stairs “on [his] hands and knees” (*CPP* 10). Attempting to make the woman a victim of his love (just as she is the victim of his ridicule), he instead finds himself confronted with a lover just as disinterested as he is, coldly wondering “why we have not developed into friends” (*CPP* 11). Pushed into emotional submission, the narrator again initiates a process of mental dissolution that pushes him backwards in evolution:

And I must borrow every changing shape
To find expression...dance, dance
Like a dancing bear,
Cry like a parrot, chatter like an ape
Let us take to the air, in a tobacco trance (*CPP* 11).

As in the first section of the poem, this dissolution produces a “tobacco trance” that returns the narrator to a primitive form of mind. Eliot’s language suggests Levy-Bruhl’s “law of participation,” his description of the primitive mind that assimilates “every changing shape” into a single mythical meaning without regard for logical contradiction. In a 1916 review, Eliot makes specific reference to Levy-Bruhl’s theory in relation to the “Bororo of Brazil who has a parrot for his totem” (116).⁶⁵ However, the Bororo’s totemic parrot is also, in the

⁶⁵ In his review, Eliot notes that “according to M. Lévy-Bruhl, this is not merely the adoption of parrot as a heraldic emblem, nor a merely mythological kinship or participation in qualities; nor is the savage deluded into thinking that he is a parrot. In practical life, the Bororo never confuses himself with a parrot, nor is he so sophisticated as to think in black and white. But he is capable of a state of mind into which we cannot put

poem, a flesh-and-blood emblem of mental dissolution, representing a return to the mind's dancing, crying, and chattering evolutionary origins. The narrator has become the passive instrument of his own nervous system and, despite his budding self-possession, remains attached to the memory of his unsuitable and pitiful lover. At the end of the poem, the young man finds his consciousness entirely filled by the lady, "Not knowing what to feel, or if I understand / Or whether wise or foolish, tardy or too soon, / —Would she not have the advantage after all?" (*CPP* 11). Once he had ridiculed the older woman, but finally it is he, not she, who is ridiculous as he worries about the lady's death and wonders whether he still has "the right to smile" (*CPP* 11).

In Eliot's evolutionary model of mind, the ideal of a simultaneous tradition located outside of time is always accompanied by a successive tradition firmly rooted in history. Eliot would note later that "time present and time past / are both perhaps present in time future, / And time future contained in time past" ("Burnt Norton" *CPP* 117). Only by holding fast to the mind of the present, preserving concepts such as tradition and culture, can the poet hope to "redeem time" and prevent the mind from a reversion to the past. Eliot's interpretation of mind thus points toward his later interpretation of religion and politics, highlighted by his conservative declaration of himself as "classicist in literature, royalist in politics, and anglo-catholic in religion" (*For Lancelot Andrewes* ix). This transition may reflect a personal evolution in Eliot's thought but, in many ways, this connection is implicit in Spencer and Jackson's anatomy, as evidenced by Jackson's suggestive metaphor of epileptic dissolution:

ourselves, in which he is a parrot, while being at the same time a man" (116). For an extended discussion of Eliot's relation to Lévy-Bruhl's anthropological theories, see William Harmon's "T.S. Eliot: Anthropologist and Primitive." *American Anthropologist* 78(1976): 797-811.

Were the highest governing people in this country suddenly destroyed, we should have to lament the loss of their offices; the loss of them is the analogue of our post-epileptic patient's negative condition. But we should also have to lament the now permitted anarchy of the now ungoverned people consequent on that loss; the anarchy is the analogue of our patient's positive condition (I. 22).

In Jackson's language, seemingly borrowed from his contemporary Matthew Arnold, the role of the neurologist is to preserve culture and civilization. The "negative condition," the loss of higher consciousness and morals, allows for an overrepresentation of lower impulses, the patient's "positive condition." Whereas Arnold attempted to preserve "the best which has been thought and said," and turn "a stream of fresh and free thought upon our notions and habits," Jackson attempted to preserve a civilized way of thinking that contrasted with the primitive habits and mechanical determinism of our evolutionary past (Arnold 190). Both protectors of thought, they are also both protectors of civilization and culture.

One can trace, then, the evolution of Eliot's thought from his early interest in psychology, through his impersonal model of tradition, to the cultural criticism of *Notes Towards the Definition of Culture* (1948). Just as Eliot connects the operation of mind to the operation of tradition in his impersonal theory of poetry, he later connects higher consciousness and higher culture. Eliot's attempt to preserve a privileged definition of culture in the face of a "lower" popular culture is, in fact, phrased in terms of consciousness and the anatomy of mind:⁶⁶

We do not leave the earlier stage of development behind us: it is that upon which we build. The identity of religion and culture remains on the unconscious level, upon which we have superimposed a conscious structure wherein religion and culture are contrasted...To the unconscious level we constantly tend to revert, as we find consciousness an excessive burden; and the tendency toward reversion may explain the powerful attraction which totalitarian philosophy and practice can exert upon humanity (*Notes* 68).

⁶⁶ Despite the rigid divisions found in *Notes*, Eliot's relationship with popular culture was always complex and has long been the subject of debate. See especially David Chinitz's *T.S. Eliot and the Cultural Divide* (2003)

A cultural neurologist, Eliot attempts to protect the civilized mind from dissolution, a reversion to a passive, unconsciousness state where it will be susceptible to the single-minded, Sweeney-like madness of totalitarianism. Seeking to drive a wedge between culture and anarchy, higher consciousness and primitive automatism, Eliot's structures of mind and tradition are always marked by a mixture of division and connection. Because evolution and dissolution work through the same processes, the meaning of tradition, like the meaning of culture, always splits into a dialectic that is repeated rather than resolved. In "The Dry Salvages," Eliot writes that every approach to a meaning recalls the past, "that the past experience revived in the meaning / Is not the experience of one life only / But of many generations" (*CPP* 133). For Eliot, this means that we can never forget the past, and every step forward is accompanied by a look into the evolutionary history of mind,

The backward look behind the assurance
of history, the backward half-look over
Over the shoulder, toward the primitive terror" (*CPP* 133).

The Dissociation of Sensibility: Behaviorism and Psychology

In 1895, five years before his seminal *Interpretation of Dreams*, the thirty-nine-year old Sigmund Freud set to work on a physiological interpretation of psychological phenomena. Soon to become the patriarch of psychoanalysis, the Freud of 1895 was still recovering from an adolescent infatuation with natural scientists such as Darwin, John Tyndall, and Thomas Henry Huxley. In an 1875 letter, Freud had declared that his greatest wish was once a "a laboratory and free time, or a ship on the ocean with all the instruments a researcher needs," but he also acknowledges a practical ideal: "a large hospital and plenty of money, to curtail some of the evils which befall our bodies, or to remove them from the world" (*Letters* 127). As a budding research scientist, Freud had published his first work on

the existence of testes in eels, and under famed physiologist Ernst Wilhelm von Brücke he had written his thesis on the nervous system of crayfish.⁶⁷ However, Freud soon grew tired of research and was dividing his time, like his ideals, between the laboratory and the clinic. At the University of Vienna, Freud entered medical school and worked under brain anatomist Theodor Meynert, a psychiatrist and a materialist who ardently believed that the brain would soon reveal its hidden order (Gay 42).

Freud's *Project for a Scientific Psychology* clearly states its purpose, to "furnish a psychology that shall be a natural science; that is, to represent psychological processes as quantitatively determinate states of specifiable material particles, thus making those processes perspicuous and free from contradiction" (295). The work borrowed ideas from both Brücke and Meynert, as well as another University of Vienna professor, Hermann von Helmholtz, who had become famous for his theories on the conservation of energy. From Helmholtz, Freud adopted the theory that the nervous system follows the principle of inertia, taking in a magnitude of energy and then divesting itself of that energy in order to maintain equilibrium. Evolutionarily, this inertial flow of energy follows the model of stimulus and response, but Freud noted that with the increased complexity of the nervous system came the production of endogenous energies (instincts) that also needed to be discharged. These secondary energies, instead of initiating action, force the body into an attempt to suppress their influence, a process that Freud would later call "repression." The role of the nervous system is thus either to initiate action, a primary function, or suppress action, a secondary function; Freud confidently declares that "all the functions of the nervous system can be

⁶⁷ Biographer Peter Gay notes that Freud's earliest papers were "working toward a theory specifying the ways that nerve cells and nerve fibrils function as a unit" (36). If Freud had completed that theory, five years before the formal beginnings of the "neuron doctrine," he might have gained his fame as a neuroscientist, rather than a psychoanalyst.

comprised either under the aspect of the primary function or of the secondary one imposed by the exigencies of life” (297).

Accordingly, Freud divided the nerves into two types: those that transmit energy to initiate action, ϕ -neurons, and those that provide resistance to energy to create repression, ψ -neurons. In an astonishingly prescient move, Freud locates the source of repression in “contact-barriers,” the space between neurons that can change its resistance and thus “remember” and modify its reaction to energy. Two years before Sherrington coined the term “synapse,” Freud had designed a neurological theory of mind based on changing facilitation (what neuroscientists today would call “habituation”) in the space between neurons. From this theory, Freud defines the “ego” as the totality of the synaptic connections, which when considered together form the particular identity of the subject—the self is a pattern of resistances. Because another group of cells, ω -neurons, passively perceives these synapses to create conscious awareness, the synapses of Freud’s ψ -neurons are also the source of that most famous of Freudian concepts, the “unconscious.” If energy is allowed to pass to the ω -neurons, consciousness is formed; however, a vast unconscious life occurs beneath the activity of these neurons: “Here consciousness is the subjective side of one part of the physical processes in the nervous system, namely of the ω processes; and the omission of consciousness does not leave psychological events unaltered but involves the omission of the contribution from ω ” (311). The key ingredients of Freudian psychology and ideas regarding neuronal processing that would not emerge until the latter half of the twentieth century find their first expression in Freud’s *Project*, a work written in three weeks, abandoned, and unpublished until 1950.

The problems contained in the *Project* persist throughout Freud's work, but it ultimately proved an end rather than a beginning. Two years before Freud's attempt at a neurological description of mind, Freud and Joseph Breuer were already laying the groundwork for a purely psychological description of mental pathology. In the essay that would later become the first chapter of *Studies on Hysteria* (1895), "On the Psychological Mechanism of Hysterical Phenomena: Preliminary Communication," Freud and Josef Breuer proposed that the root of neurosis was psychological, rather than neurological: "In traumatic neuroses the operative cause of the illness is not the trifling physical injury but the affect of fright—the psychological trauma" (5-6). This conclusion would pave the way for the "talking cure," the attempt to cure neuroses through the cathartic recollection of traumatic experiences. In *The Interpretation of Dreams* (1900), Freud's ψ neurons return in the form of " ψ -systems," the individual components of the psychic apparatus, but Freud explicitly states "We shall wholly ignore the fact that the psychic apparatus concerned is known to us also as an anatomical preparation, and we shall carefully avoid the temptation to determine the psychic locality in any anatomical sense" (536). Freud had kept the same terms and basic concepts but translated them into a completely psychological description of mind.

Freud's move from a physical to a psychological description of mind is indicative of a general split between the fields of neurology and psychoanalysis. Freud is only the most prominent example of a group of clinical psychologists influenced by Jean Martin Charcot, (including Alfred Binet, Théodule Ribot, and Pierre Janet) who traced trauma to psychological rather than physical abnormalities. Psychoanalysts justified their emerging field by arguing that pathological mental states could be studied scientifically, independently of any anatomical consideration of the brain. Reacting against this trend, neuroscientists and

behavioral scientists denied the existence of abstract mental states and argued that even the most complex cognitive processes were compounds of simple reflex behavior. Ivan Pavlov, made famous by his work on conditioned reflexes, refused to distinguish the mental from the physical:

Contemporary medicine distinguishes “nervous” and “psychic” disturbances—neuroses and psychoses, but this distinction is, of course, only arbitrary. No real line of demarcation can be drawn between the two groups: it is impossible to imagine a deviation of higher activities from normal without a functional or structural disturbance of the cortex (396).

Often, however, the materialist approach proved excessively reductionist, attempting to use simple laws like reflex action to explain complex mental states. Freud’s “law of constancy,” the inertial description of the nervous system, is only one example of this tendency. While psychoanalysts such as Freud suggested that their patients “suffer mainly from reminiscences,” neurologists attributed a variety of symptoms to nervous fatigue, a general depletion of nervous energy (7). Matthew Gold notes that neurologists at the time frequently described nervous disorders using financial metaphors, viewing the nervous system as a physiological bank account that could be overdrawn and, worse, suffer total bankruptcy. Gold points to a letter written by Eliot after visiting a nerve doctor at Margate in which he complained that “he had greatly overdrawn [his] nervous energy” (*Letters* 471). In the early twentieth century, all neuroses seemed to be caused by either a case of “bad nerves” or psychological derangement. As Eliot complained to Julian Huxley “I am glad you confirm my opinion of English doctors. They seem to specialise either in nerves or insanity!” (*Letters* 482)

Eliot’s dissociation of the medical field shows that he was not immune to the early twentieth-century division between the mind and brain. While Eliot calls for a “unified

sensibility” in poetry, “a direct sensuous apprehension of thought, or a recreation of thought into feeling” he also makes it clear that thought and sensibility must retain their separate functions (*SP* 63). If thought is present during sensory experience, it will create patterns of meaning above sensibility, unrelated to the pattern of activity in the nerves. Along these lines, Eliot criticizes Phillip Massinger’s “cerebral anemia,” indicated by his failure to follow the “involutions” of the nervous system with its particular modes of “perceiving, registering, and digesting impressions” (*SP* 157). This “decay of the senses” produces a “greater sophistication of language,” but in its stylization it moves Massinger away from life and leads him “away from feeling altogether” (156). “Had Massinger a nervous system as refined as that of Middleton, Tourner, or Ford,” Eliot argues, “his style would be a triumph” (*SP* 157). Failing to follow the living and adapting nervous system, such a style becomes stagnant and artificial as it overlays “received ideas” and anachronistic emotions on experience. In “The Metaphysical Poets” Eliot writes that modern poetry must begin at the level of the nerves. The poet must look deeper than the heart, an organ emblematic of stale symbols and clichéd emotion, into “the cerebral cortex, the nervous system, and the digestive tracts” (*SP* 66).⁶⁸

Even though Eliot encouraged modern poets to look into the nervous system, he also recognized that they must, when necessary, free themselves from sensory experience. If the mind is unable to abstract itself from the nerves, it becomes the passive instrument of the senses and cannot translate personal experience into universal meaning. In his introduction to Paul Valéry’s *Le Serpent*, Eliot explains that the act of creation depends on the divorce of the poet from personal experience:

⁶⁸ John Gordon also connects Eliot’s distinction between the heart and brain to recent developments in science and medicine. See “T.S. Eliot’s Head and Heart” *ELH* 62.4 (1995): 979-1000.

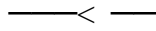
One is prepared for art when one has ceased to be interested in one's own emotions and experiences except as material; and when one has reached this point of indifference one will pick and choose according to very different principles of those people who are still excited by their own feelings and passionately enthusiastic over their own passions" (12).

In this way, poetry is an "escape from personality," a process by which the poet "annihilates himself in a system and unites himself with it, gaining something greater than himself" (14).

Unable to translate feelings into mental objects, the poet's excessive feelings become pathological; he is, like Eliot's Hamlet, "dominated by an emotion that is inexpressible" (*SP* 48). The materiality of the nervous system constricts the mind, limiting its creative potential; Eliot thus concludes that the mind must stand above feeling, translating heterogeneous fragments of sense experience into meaningful unity.

One could argue, then, that Eliot's unification of sensibility is built upon an implicit dissociation between the nervous system and the abstract mind, between neuroscience and psychology. Rather than synthesizing thought and feeling, reducing them into a single complex, Eliot instead divides the functions of the physical body from the psychical mind. Eliot's ideal requires the poet to negotiate the space between thought and feeling, grounding him or herself in sense experience while avoiding both the limitations of reflexive nervous action and temptations of the falsifying mind. Using the evolutionary theories of Remy de Gourmont, Eliot finds meaningful space between thought and feeling by redefining the nature of poetic intelligence and creation. Instead of an individual genius who "creates emotions" and ideas, Eliot describes the poet as actively drawing on the sensory knowledge of the past and applying it to the present situation. The "unification of sensibility" is strictly neither sensation nor thought, but an application of an instinctual and impersonal "tradition"

of thought applied to personal sensory experience. Eliot's poetics are both personal and impersonal, unified and carefully dissociated.



As a graduate student at Harvard, Eliot took two courses in psychology.⁶⁹ Manju Jain notes that the first, taught by Dr. Herbert Sidney Langfeld, required students to spend four hours in the laboratory each week. Jain describes Eliot's lecture notes, which are "technical, dealing with the physiology of organs of skin on such questions as sensation and temperature sense" (Jain 161). The second seminar, with the topic "mind and body," was taught by Hugo Münsterberg and provided a more abstract study of mind. It introduced Eliot to the work of clinical psychologists such as Théodule Ribot and Pierre Janet. The divided nature of Eliot's psychological education, taught in both an experimental laboratory and a philosophy-oriented seminar, expresses a growing division between the fields of neurology and psychology. As psychology attempted to establish itself as a separate and valuable branch of brain research, it argued that mental states could be studied independently of their nervous component. Through the comparison of behavior and introspection, psychologists attempted to provide a scientific, non-physiological, description of mental activity. As the subject of Münsterberg's seminar indicates, psychology had a vested interest in perpetuating and even furthering the division between the mind and body.

Despite the subject of his course, it is Langfeld's work rather than Münsterberg's that appears emblematic of psychology's dissociated sensibility. At the time that Eliot was a graduate student, Langfeld was working on a series of experiments on association and

⁶⁹ A complete listing of courses taken by Eliot while at Harvard is contained in the appendix of Manju Jain's *T.S. Eliot and American Philosophy*. Eliot took Langfeld's course, Philosophy 21: Experimental Psychology, in the 1911-12 academic year. Münsterberg's course, Philosophy 20b: Seminary in Psychology, was taken in 1912-13.

suppression.⁷⁰ Typical of the experimental psychology of the time, Langfeld's experimental design featured both an objective (behavioral) and a subjective (introspective) component. Subjects were presented with a series of simple black and white images of animals, vegetables, and utensils projected with a lamp. The researcher then gave the subjects "negative instruction," asking them to name the first word that they associated with the image but prohibiting them from naming the image itself. After these tests, the subjects were asked to undergo introspection, the careful self-examination of mental processes in an effort to uncover mental states and associations.⁷¹ During each naming trial, therefore, Langfeld required the subjects to "pay particular attention to the processes of suppression and association and to the imagery" (200). By analyzing the introspective data, with its specific pattern of activity, the psychologist hoped to fill in the spaces between the subject's conscious awareness, a Freudian endeavor of exposing motivations and latent mental states below the subject's consciousness.

To the modern scientific researcher, Langfeld's combination of scientific experimentation and subjective introspection would raise immediate questions about the validity of the data. Not only did the subjects have to recollect their mental states, but the experimental psychologist also had to form these mental states into a logical stream of consciousness. Often, the introspective method seemed far from scientific, working through

⁷⁰ In other articles, Langfeld states that he used subjects trained in the methods of introspection, usually graduate students and faculty members. Langfeld's preference for graduate students as subjects raises the possibility that Eliot may have participated in some of Langfeld's studies.

⁷¹ The experimental methods of Langfeld bear a remarkable resemblance to the therapeutic methods of Dr. Vittoz, who treated Eliot for his nervous breakdown in 1921. Vittoz monitored the patient's brain vibrations as they responded to simple images and tasks, asking the patient to pay close attention to their sensations and thought processes. By discovering which aspects of brain function were pathological, the patient could eventually master those functions by manipulating the objects of their thought. For more information on Dr. Vittoz's methods, see Harry Trosman, "T.S. Eliot and *The Waste Land*: Psychopathological Antecedents and Transformations." In *Psychoanalytic Studies of Biography*. Edited by George Moraitis and George H. Pollock. Madison and Connecticut: International Universities Press, Inc., 1987.

a mixture of artistry and clairvoyance in its attempt to place images in a meaningful order. Asked to provide an association for “rake,” one subject came up with “garden,” supplying the following introspection: “Kinesthetic image of rake. Suppressed it by closing the mouth and putting the tongue against the roof of the mouth. Then thought of hoe. Don’t know why I didn’t say it. Then said garden” (205).⁷² The claims of experimental psychology to present an objective study of mental data are undermined by the scope of interpretation required by the psychologist. Attempting to ground abstract terms such as “sensation,” “attention,” and “association” in nervous processes, the psychologist can only translate these terms into a meaningful narrative of images— psychology simply replaces one set of terms with another.

The interpretive problems inherent in introspective psychology did not escape Eliot. In his dissertation, Eliot complained that “introspection can give us only terms, and not processes. It is only when psychology pretends to deal with something more ‘subjective’ or more philosophic than the subject-matter of any other science that its pretensions lead it astray” (*KE* 26). While Eliot asserts the validity of behavior as subject-matter for psychology, he is critical of any attempt to study subjective mental states scientifically. By attempting to place himself into the mind of his subject, Eliot notes that the psychologist leads a precarious double existence, “half putting ourselves in the place of the speaker and half contemplating him as an object” (*KE* 94). However, in rejecting the process of introspection, Eliot also seems to deny the existence of consciousness apart from a collection of fragmented mental states. These states can be filled in to create something more unified, but they cannot create something more real or valid than experience: “There is, in this sense, nothing mental, and there is certainly no such thing as consciousness if consciousness is to be

⁷² The sensation of clenching the throat muscles turns out to be significant, for both Lashley and Watson believed that images originated in speech. In *Behavior* (1914), Watson argues that images and other centrally initiated processes are largely composed in word-habits that have their loci in the larynx and tongue (20).

an object or something independent of the objects which it has” (*KE* 83). In its claims to find truth above everyday mental life, psychology became, for Eliot, more “superstitious” than scientific.⁷³ Although psychologists attempted to create a unified stream from isolated mental states, Eliot argued that when it comes to consciousness, we can know only the fragmented objects of our experience, “know only / A heap of broken images” (*CPP* 38).

This fragmentation of higher consciousness is one reason why Eliot sees “fear in a handful of dust” (*CPP* 38). A frightening image of mortality, it is also a symbol of the particulate, material composition of the twentieth-century mind. As this symbol suggests, Eliot’s rejection of psychological interpretations of consciousness led him to an increasingly materialist view of mental function: “I can see no difference between psychical and physical disposition. For disposition must rest upon something which is actual and this must be a physical structure” (*KE* 79). Whatever assertions psychology might make about the independence of psychical life, Eliot argued that the root of all consciousness is the “physical structure” of the brain and nervous system. This materialist criticism of psychology forms the basis of “Introspection” (1910), a poem in which Eliot replaces the clear mental states described by the psychologist with a mind “six feet deep,” a twisted bundle of instincts:

The mind was six feet deep in a
cistern and a brown snake with a tri-
angular head having swallowed his
tail was struggling like two fists
interlocked. His head slipped along
the brick wall, scraping at the
cracks. (*Inventions* 60)

The poem itself records an act of introspection; the poet gazes into the mind, hoping to find a conscious unity “deep” below the surface impressions. The poet does find a mind in the

⁷³ Eliot makes a distinction between science and psychology in a 1921 letter to his mother: “When I say ‘science’ he assumes that I mean ‘psychology’ because he is interested in the superstitious study” (*Letters* 448).

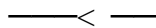
The memory throws up high and dry / A crowd of twisted things
("Rhapsody on a Windy Night" *CPP* 14)
My thoughts in a tangled bunch of heads and tails...
("Death of the Duchess" *WLF* 107)

In each case, the twisting of the mind hints at the play of nerves in the brain, but it also suggests what Langfeld would call "suppression," a battle between two concepts competing for expression.⁷⁵ By showing the "twisting" of mental states, Eliot reveals the impossibility of isolating a meaningful stream. He thus turns psychology against itself—like the snake biting its own tail—using the very complexity of mental states to refute the psychologists' claims for the objective, scientific study of mind. Finally, the poem provides evidence that Eliot had arrived at a modified materialism, a position stated more clearly in his dissertation, "with regard to mental activity, I conclude that we find only physiological activity or logical activity, both independent of, and more fundamental than what we call the activity of mind" (*KE* 153). Whether mind rests in the physiology of the nervous system or in the inexplicable logic of mental function, it is beyond the reach of explanation by the psychologist.

Despite the confidence of Eliot's assertions, he made it clear that this materialism does not come without a cost. He writes that "I am as good a materialist as anybody; but though materialist, I would point out what a little way such truths bring us. For materialism itself is only an interpretation, and we cannot assert all the types of object which we meet are reducible to this one type of thing" (*KE* 165). Implicit in the materialist position is the denial of a creative intelligence above the instinctual, reflexive behavior of the nervous system. Limited by the brain's evolutionary tendency toward useful action, the perversion of the snake's instinct, the impulse to lunge at moving objects, leads to its own destruction.

⁷⁵ In "Introspection" this battle has unquestionable homoerotic overtones, especially considering the presence of the phallic snake and the images of sterility. See Nancy K. Gish "Discarnate Desire: T.S. Eliot and the Poetics of Dissociation." In *Gender, Desire, and Sexuality in T.S. Eliot*. Edited by Cassandra Laity and Nancy K. Gish. Cambridge: Cambridge University Press, 2004: 107-129.

Although traditionally a symbol of infinity, here the snake biting its own tail becomes a symbol of stasis, a consciousness not removed from time but stuck firmly in evolutionary history and the present moment, repeating inherited patterns of response in reaction to immediate stimuli. Christopher Ricks calls “Introspection” a prose poem, as it lacks consistent meter and is composed of seven lines of unequal length, but it may be more useful to think of the poem as *vers libre* in which the space has ceased to function properly. Like the instinct of the snake, turned against itself, the space of the poem creates incoherent disorder rather than a purposive pattern. The snake, the cistern, and the poem’s space have lost the meaning for which they were intended. As the precise mechanisms of the mind are turned toward the present moment, they becoming increasingly anachronistic, their meanings “slip, slide, perish / Decay with imprecision” (*CPP* 121).



Eliot’s criticism of psychology was being echoed in other quarters and, in the case of behaviorism, with fewer reservations. The behaviorist movement declared itself in no uncertain terms in 1913 with the publication of John B. Watson’s “Psychology as the Behaviorist Views It.” A student of John Dewey at the University of Chicago, Watson pushed Dewey’s pragmatist approach to psychology to its extreme as he brought functional psychology into the laboratory. As a professor at Johns Hopkins, the center for experimental research in America at the turn of the century, Watson used a series of animal models to isolate, predict, and control behavior. Watson angered many of his colleagues by demanding that psychology be interested in behavior rather than states of mind, dismissing much of the current work being done in the field. In “Psychology as the Behaviorist Views It,” Watson’s combative language suggests a revolution, a youthful cleansing of the old guard:

Human psychology has failed to make good its claim as a natural science. Due to a mistaken notion that its field of facts is conscious phenomena and that introspection is the only direct method of ascertaining these facts, it has enmeshed itself in a series of speculative questions which, while fundamental to its present tenets, are not open to experimental treatment (176).

Borrowing from evolutionary theory and comparative physiology, Watson refused to distinguish between the mental functions of man and other animals. While Watson co-opted the experimental techniques of experimental psychology, he eliminated all efforts at introspection. All that is left is the scientific analysis of behavior: “Psychology, as the behaviorist views it, is a purely objective, experimental branch of natural science which needs introspection as little as do the sciences of chemistry and physics” (176).

William Skaff argues that “Eliot endorses a qualified behaviorism: our mental life is not illusory but is continuous with our physical nature and can be reduced to physiological explanations” (54). Skaff claims that behaviorism represents one of several interpretations of the unconscious that led eventually to a surrealist aesthetic. However, in attempting to fit behavioral science into other models of the unconscious, Skaff paints behaviorism as a study of physiological consciousness, an assertion that Watson would vigorously reject. Rather than a study of the mechanistic undercurrents of consciousness, behaviorism may more correctly be called an “aconscious” science. By eliminating “states of consciousness as proper objects of investigation” Watson aimed to “remove the barrier from psychology which exists between it and the other sciences” (177). Watson’s “science of behavior” contended that all mental activity could be reduced to a process of stimulus and response: all human thought, like all animal thought, reflects the organism’s adaptation to its environment by means of instinctual or learned responses to stimuli. As behaviorist Karl Lashley wrote, “The conception of consciousness here advanced is, then, that of a complex integration and

succession of bodily activities,” activities that “do not differ in essential mechanism from the spinal reflex of the decapitated animal to the most complex adaptive activity of man” (“The Behaviorist Interpretation of Consciousness” 341).

Because of their belief in the continuity of mind from animal instinct to human intelligence, Watson and other behaviorists pioneered the use of animal models to study the nature of behavior. Performing experiments with rats, mice, cats, dogs, and monkeys, behavioral scientists worked toward a unified model of behavior that would be applicable to any form of intelligence. Watson asserted, somewhat disingenuously, that “the behavior of man, with all of its refinement and complexity, forms only a part of his total field of investigation” (158). Despite Watson’s claims, it is clear that his study of animal behavior aimed at the understanding, and ultimately the control, of human behavior. Because he believed that behavior followed general rules, Watson used a number of animals to get a comprehensive picture of learning and intelligence, but he is best known for his work on rats. In his dissertation, *Animal Education* (1903), Watson sought to prove that the associational capabilities of rats were no different from humans. Using mazes and puzzle boxes, now classic experimental set-ups, Watson tracked the mental development of the rat and the animal’s ability to form sense associations to solve various problems. Little used before the end of the nineteenth century, the “lab rat” would become the standard for behavioral science.⁷⁶ Watson’s most prominent behaviorist colleagues, Robert Yerkes and Karl Lashley, both published their most famous works on rodents. In 1907 Yerkes published *The Dancing Mouse*, a series of studies on learning in the Japanese “dancing” or “waltzing”

⁷⁶ For an excellent history of the laboratory rat and its relation to Watson and behaviorism, see Robert Boakes’ *From Darwin to Behaviorism*: 143-148.

mouse, and in 1929 Lashley published *Brain Mechanism and Intelligence*.⁷⁷ Once known primarily as vectors of disease, rats were now seen as the key to understanding human intelligence.

Although Watson's revolutionary proclamation in 1913 declared the beginning of Behaviorism as a science, the most famous experiments in behavioral science occurred twenty-five years earlier. In 1898 Edward Thorndike had published *The Animal Intelligence*, a work based on his "puzzle box" experiment with cats, a version of which was used by Watson in his dissertation. Placing food outside the animal's chamber, Thorndike added various devices to the door and timed the speed and method by which the animals solved the puzzle. Thorndike's experiments led him to believe "that the higher animals, including man, manifest no behavior beyond expectation from the laws of instinct, exercise, and effect" (274). According to Thorndike, all "behavior is predictable" and located in modifications at the level of the synapse.

Once the structure of the nervous system and the specific activity of the synapses are traced, human mental activity will reveal itself to be no more complex than lower animals. We may, therefore, expect that when knowledge of the structure and behavior of the neurones comprising the connection-systems of animals (or the neurones' predecessor in this function) progresses far enough...the ability to learn will show as true an evolution as the ability to sneeze, to clasp an object touched by the hand (280).

⁷⁷ Yerkes' *Dancing Mouse* (1907) is a near-comprehensive study on the sensory and learning abilities of the Japanese dancing mouse, a rodent known for whirling rapidly in circles. Yerkes did a series of studies on the animal's whirling behavior at different times during the day, and then various tests on the animal's hearing, brightness discrimination, and habit formation. By far the most famous of these studies involved what is now known as the "Yerkes discrimination box," an experimental set-up in which the animal chooses between two doors and receives an electric shock when choosing incorrectly. Yerkes changed the light and colors in the box to test the animal's vision and its learning ability.

Lashley's *Brain Mechanisms and Intelligence* (1929) outlines a series of experiments on rats. Lashley was attempting to discover whether intelligence is localized in a single area in the brain or is diffused through the entire cortex. Using a number of rats with lesions to different sections of the brain, Lashley attempted to find whether the time (before or after learning) or location of the lesions affected habit formation. Lashley concluded that "the habit, once formed, is definitely localized, in the sense that it is dependent upon a definite part of the cortex for performance. Its initial formation, on the contrary, is not conditioned by the presence of any part of the cortex; the learning process is not localized, in the foregoing sense" (86).

Following the structure of the nervous system, Thorndike concluded that all intelligence is formed through physical associations, neuronal connections that increase in complexity but not in type through various stages in evolution. In humans, Thorndike argued, these associations have become so complex that they conceal the continuity of mind, but man cannot dissociate himself from his animal counterparts: “Amongst the minds of animals that of man leads, not as a demigod from another planet, but as a king from the same race” (294).

Simultaneously, work was being done in Russia that would support Thorndike’s conclusions and win Ivan Pavlov the Nobel Prize in 1904. Pavlov’s experiments with classical conditioning are perhaps the most famous ever conducted, but Pavlov himself was initially more interested in digestive, rather than nervous, function. Throughout the 1880s and ‘90s, Pavlov experimented with various ways to extract pure gastric juice (“ferments”) from the glands of dogs to measure the quantity and composition of the digestive fluid. After inserting various “fistulas” into the animal’s digestive system, Pavlov was dissatisfied with his results until he performed an oesophagotomy on the test animals, severing the esophagus at the dog’s neck and suturing both ends. With this method, Pavlov could insert food into the dog’s mouth (which dropped out the opening at the neck) and extract salivary and gastric fluid from the esophagus. Pavlov was initially surprised that the dogs responded to these “sham feedings,” and noted that the glands responded not only to mechanical and chemical stimulation but also to other “psychic” factors. This finding led his work in an entirely different direction.

Pavlov eventually listed a number of psychic variables that were confounding his data. After finding that the animals would salivate in greater quantities when deprived of food, Pavlov was led to the small but significant conclusion that “a psychic effect could also

be a strong excitant of the secretory nerves” (*Selected Works* 116). Later, Pavlov found that a salivary response could be produced with visual stimuli (the sight of food) and auditory stimuli (the famous bell), finally allowing him to conjecture that “Any phenomenon of the external world can be made a temporary signal of the object which stimulates the salivary glands, provided the stimulation of the mucous membrane of the mouth by the object has been associated once or more times with the action of the given external phenomenon on other receptor areas of the surface of the body” (*Selected Works* 147). By claiming that “any phenomena” could act as a conditioned stimulus, Pavlov’s work questioned the nature of intelligence. These seemingly “intelligent” associations were just byproducts of evolution, behaviors emerging from the mind’s innate response to an unconditioned stimulus. Pointing the way to behaviorism, Pavlov argued that the animal’s conscious life was of secondary importance and that the primary mental processes could be studied objectively through the observation of behavior.

Frighteningly, Pavlov’s work implied, like Thorndike’s, that human intelligence was just a more complex version of the reflex response. Just as Spencer and Jackson collapsed mental evolution in their anatomical construction of the brain, Thorndike and Pavlov broke down the space between animal instinct and human intelligence. Eliot’s work likewise suggests that animal instinct, although “a lower stage of mind,” differs in degree rather than kind from the highest mental activity of humans, the “mathematician engaged upon a problem” or the poet composing a poem (*KE* 16). Grover Smith has already noted that Pavlov’s bell appears in Eliot’s unfinished poem *Coriolan* (1931), in which a character remarks that the ringing of the Sanctus bell caused an involuntary and highly inappropriate

response during a church service (“he said right out loud, *crumpets*”)⁷⁸ However, Watson’s rats and Pavlov’s dogs appear even earlier. In “A Game of Chess” from of *The Waste Land*, rats are invoked after the female narrator complains of “bad nerves.” Eliot suggests these bad nerves through her involuntary, obsessive repetition of words:

'My nerves are *bad* to-night. Yes, *bad*. Stay with me.
'*Speak* to me. Why do you never *speak*? *Speak*.
'*What* are you *thinking* of? *What thinking*? *What*?
'I never know *what* you are *thinking*. *Think*' (Italics added CPP 40).

Like the dog’s reaction to the bell, the woman’s use of language is unconscious, ironically depriving her of the very thought and speech she is demanding of her lost lover. Lapsing into automation, the woman suffers a mental death that parallels the physical death represented by the “rat’s alley / Where the dead men lost their bones” (CPP 40). The recurrent association of rats with death not only brings to mind horrific images of WWI trenches, but also the death of consciousness caused by a lapse into mindless mechanism.

The rat, “dragging its slimy belly on the bank,” represents the lowest form of mental life, but Eliot’s poem suggests that this animal automatism is little different from the typist who “smoothes her hair with automatic hand / and puts a record on the gramophone” (CPP 44). All feeling and instinct, the typist’s existence is deprived of thought; her “brain allows one half-formed thought to pass” in the midst of her unconscious behavior (CPP 44).

Because Eliot collapses the space between the animal and human mind, rats and dogs are uncomfortable reminders of our intellectual limitations. In the first section of the poem, the dog is both friend and foe to men, reflexively digging up a past form of human thought that we would prefer to stay buried. In the original manuscript, the “sprouting corpse” of the first section prepares the reader for Eliot’s description of urban existence:

⁷⁸ Smith explains that the Sanctus bell is probably associated with “the crumpet-man’s bell clanging in the street,” explaining the man’s curious exclamation (*T.S. Eliot and the Use of Memory* 80).

London, the swarming life you kill and breed,
Huddled between the concrete and the sky
Responsive to the momentary need,
Vibrates unconscious to its formal destiny (*WLF* 43).

This “unconscious” is far from Skaff’s surrealist source of inspiration and much closer to the absence of consciousness implied by a behavioral interpretation of mental activity. In Eliot’s eyes, the “vibration” of the nerves responding to an immediate need represents the horrific bottom of human consciousness. Trapped in a cycle of stimulus and response, there is little hope for intellectual or artistic growth as the mind is reduced to its most basic animal functions: swarming and huddling, killing and breeding.

By denying consciousness, behaviorism offered one way in which thought and sensibility can be unified. Even as Freud and other psychoanalysts attempted to divide the psychological activity of the mind from the physical activity of the brain, Pavlov, Thorndike and Watson were bringing the two together: “The pretense that there is an impassable cleft between physiology and psychology should arouse suspicion that one or the other science is studying words rather than realities” (Thorndike 5). Eliot’s belief that “half-objects” of psychology were fictional creations, and his statement that introspective psychology can “give us only terms,” seem to reveal a sympathy with the behaviorist position. In the end, however, Eliot could not accept a unification of sensibility that implied feeling without thought. Because the behaviorists recognized “no dividing line between man and brute,” the type of unification contracted the capabilities of mind, reducing its activity to the simplified function of the reflex arcs (Watson, “Psychology” 158). Although skeptical of the scientific study of psychology, Eliot was dissatisfied with the reduction of human thought to sensorimotor activity, arguing that “No stage can be so low as to be mere feeling; and on the other hand man surely feels more than the animal” (*KE* 18). Eventually Eliot would dismiss the

behaviorist position altogether, writing to Bertrand Russell (who was formulating a theory of mind based on the tenets of behaviorism) “I am not convinced that Watson and those people are really very important” (*Letters* 229).⁷⁹

Led by his skepticism to reject the psychological interpretation of mental behavior, Eliot still carried enough residual idealism to distance himself from the behaviorists. Eliot was led to an impasse: he could either accept the pessimistic behavioral interpretation of consciousness or, through what seemed like an act of faith, claim the existence of a consciousness detached from nervous activity. Eliot’s confusion is evident in the 1910 poem, “First Debate between the Body and Soul.” The poem begins with a “blind old man” who represents a caricature of the behaviorist position. Pitifully reduced, the man “coughs” and “spits,” “stumbles” and “sputters,” victimized by the frailty of his own body (*Inventions* 64). Like the nerve-like cracks at the bottom of the cistern in “Introspection,” the behavior of the man follows “alleys” and “gutters” that resemble narrow, fixed pathways of the nervous system. The image recalls William James’ description of the nerves as “drainage channels” in which pathways are “scooped out and made more permeable” as habits become fixed. As James’ description indicates, the repetition of “nerve-currents” along channels imposes increasing limits on behavior as the mind falls into habitual patterns of activity. Walking along the pathways of habit, the man’s mind has become as disabled as his body, replacing conscious thought with aconscious behavior. Eliot describes this behavior in the refrain that follows the man’s arrival, a four-line refrain repeated with a variation of the first two-lines,

He pokes and prods
With senile patience
The withered leaves

⁷⁹ At the time, Russell was developing the theory of mind he would later present in *The Analysis of Mind* (1921). Russell was heavily influenced by Watson and the behaviorists and concludes that “whatever may be the definition of ‘consciousness,’ ‘consciousness’ is not the essence of life or mind” (20).

Of our sensations—(*Inventions* 64)

With animal curiosity and simple brute force, the blind man “prods” the sensations, attempting to extract life from a tree that bears “withered leaves” rather than fruit. Just as Eliot had criticized materialism, acknowledging “what a little way such truths bring us,” the tree in the poem offers little to the man or the narrator who observes him.

The various versions of the refrain reveal Eliot’s attempt to reconcile a behavioral interpretation of consciousness with the act of poetic creation. Behavioral scientist Karl Lashley claimed “consciousness is behavior,” and indeed the first iteration of the refrain (presented above) presents this grim possibility. The sensations produce mindless (“senile”) behavior in the old man, whose blindness makes him entirely reactive to his surroundings, poking and prodding. Denying thought, and with it the higher unification of sensibility required by poetry, this initial position offers no space for the creative imagination. In the next two iterations, Eliot considers the kind of parallelism implicit in the introspective psychology of Langfeld and explicit in the work of Spencer and Jackson. The withered senses remain, but are described first as “Imaginations / Masturbations” and then, in the next version, “Imagination’s / Poor relations” (*Inventions* 64-5). Whereas the first offers complete dissociation, resulting in masturbatory acts of creation without purpose or effect, the second implies an unflattering parallelism in which the imagination is impoverished by its material counterpart. When Eliot finally arrives at a “unified sensibility,” it is far from ideal,

Imagination’s
Defecations
The withered leaves
Of our sensations—(*Inventions* 65)

Retaining the primacy of the sensations, Eliot can only make higher thought a byproduct (or waste product) of the sensations. Like Pavlov’s conditioned responses, the imagination is

only the “defecation” of sensibility, the unimportant residuum of the body’s behavior. Eliot’s poem thus takes behaviorism to its natural conclusion, viewing psychological descriptions of higher thought as “absurd,” *post hoc* attempts “to *construct* the conscious content of the animal” from observed sensory responses (3).

Despite Eliot’s eventual rejection of behaviorism, the idealist description of mind fares little better in the poem. Observing the man’s behavior, the devotee “to the pure idea” sits in a “vacant square.” Like the empty terms of psychology, Eliot’s devotee is surrounded by “dusty” trees and houses, presumably abandoned that “leer” and “exude / The odour of their turpitude.” While a behavioral interpretation of consciousness may be limiting, the pure idea detached from the brain is completely emptied of meaning. Eliot explains that when we “cut off a ‘mental’ and a ‘physical’ world, dissect and classify the phenomena of each[,] the mental resolves into a curious and intricate mechanism, and the physical reveals itself as a mental construct” (*KE* 154). The nervous system provides only a little life in the form of withered leaves, but the “pure idea,” abstracted from the body, “dies of inanition.”

When the narrator enters the poem, asking the “complete idealist” to “assist [him] to the pure idea,” the futility of his request is immediately apparent. The narrator wants to reclaim a vision of nature in which the material world is only the beginning of consciousness, “regarding nature without love or fear.” Eliot’s narrator seeks a Romantic, pre-Darwinian understanding of nature in which the poet stands outside the evolutionary laws of adaptation, a consciousness powerful enough to craft nature without being controlled by it. In fact, the line recalls Wordsworth’s “Lines Written a Few Miles above Tintern Abbey,” a poem in which the narrator looks back on an earlier version of himself who, overwhelmed, followed

Wherever nature led; more like a man
Flying from something that he dreads, than one

Who sought the thing he loved (l.71-3).

Unable to achieve the more sober appreciation of nature provided by memory, “emotion recollected in tranquillity,” Eliot’s response can only be immediate and transitory. Thought, existing in the brief moments between stimulus and response, lasts only “for a little while, a little while.” Eliot’s empty houses, his image of the pure idea, are thus a degraded version of Wordsworth’s mind, a “mansion for all lovely forms” (l.141). The mansion remains, but has been looted by the materialism of behavioral science.

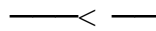
Eliot’s “First Debate between Body and Soul,” driven by skepticism, ends in mutual defeat rather than dialectical resolution. The poem provides evidence of Eliot’s difficult position, confusion further revealed in his telling revisions to sections of the poem. Later Eliot would assert the poet’s ability to “feel their thought,” but in this early poem

The eye retains the images,
The sluggish brain will not react
Nor distils
The dull precipitates of fact
The emphatic mud of physical sense.

At first reading, the lines seems to take a rigidly behaviorist position, the “eye” senses but the brain does not convert that physical sense into higher thought. An early version of Eliot’s chemical metaphor in “Tradition and the Individual Talent,” the mind here fails to initiate a reaction to distil the “pure idea” from its unwanted factual precipitate. The lines present only an unconscious reflex, the eye “retains” but the brain “will not react,” failing to generate a conscious image. All sensibility and no thought, the mind dwells in “the emphatic mud of physical sense.” However, the alternate version of the poem presented a radically different sensory process; the dissociation between the physical eye and brain was originally between the anatomical brain and the abstract intellect:

The brain retains the images,
The sluggish intellect will not react⁸⁰

Just as the poem expresses a simultaneous criticism of the materialist and the idealist position, Eliot's revisions reveal an uncertainty regarding the composition of mind. The very fact that Eliot, at this point, can substitute "brain" for "intellect" shows his unwillingness to give up the psychological interpretation of consciousness he had rejected. Ultimately, Eliot was able to achieve a unification of sensibility not by joining nervous "sensation" with psychological "intellect" but by exposing reflective thought as a false ideal. Using Remy de Gourmont's rewriting of evolution, Eliot showed that the conservative instincts and reflexes of the nervous system could be the source of the poetic intelligence, uniting an embodied tradition of thought with the equally embodied sensation of the moment.



Because he acknowledged that all thought must begin with sensation, Eliot needed to overcome the structural and temporal limitations of the nervous system. Rigid in its connections and rapid in its responses, the consciousness described by behaviorists was passive in the face of experience. It offered a unification of sensibility that denied thought, suggesting that consciousness was simply a byproduct of evolutionary adaptation—that the pattern of thought changed only when the environment changed. While these momentary, action-oriented motor responses governed the fragmentary life of the individual, Eliot understood that the act of poetry required the formation of new, more durable patterns of knowledge. Whereas the knowledge "derived from experience" is transient and limited, Eliot's poetry fights against the limits of language, time, and experience to create meaning. In his 1927 Clark Lectures, Eliot is more specific about the poetics of a unified sensibility,

⁸⁰ This variation is noted by Christopher Ricks in an editorial footnote to *The Inventions of the March Hare* (66).

explaining “the characteristic of the type of poetry I am trying to define is that it elevates sense for a moment to regions ordinarily attainable only by abstract thought, or on the other hand clothes the abstract, for a moment, with the painful delight of the flesh” (*Varieties of Metaphysical* 55). He speaks of the “enlargement” of sensibility, the fusion of a new feeling onto a pre-conceived intellectual or emotional complex. For Eliot, poetry is the fusion of new sense experience onto pre-existing patterns of thought, enlarging thought by enlarging sensibility.

Retaining the behaviorist focus on nervous action and instinct, Eliot makes poetry an affair of the “cerebral cortex” and the “nervous system” rather than the higher mind. The poet escapes patterns of thought and action through the reorganization of previous patterns rather than the creation of new ones: “The business of the poet is not to find new emotions, but to use the ordinary ones and, in working them up into poetry, to express feelings which are not in actual emotions at all” (*SP* 43). According to Eliot, poetry thus involves a play between the “feelings” of the nervous system and the “emotions” of the cerebral cortex. However, the point of entry into Eliot’s unification of sensibility may lie in the seemingly inexplicable third component of Eliot’s modern body, the “digestive tracts” that he pairs so discordantly with the brain and nervous system. The digestive tracts emerge again in the Clark lectures, and again in association with Metaphysical poetry and the unification of sensibility:

Donne, instead of pursuing the meaning of the idea, letting it flow into the usual sequence of thought, arrests it, in order to extract every possible ounce of the emotion suspended in it. To such ideas of Donne’s, therefore, there is a certain opacity of feeling; they are not simple significances and directions. In thus arresting the idea Donne often succeeds in bringing to light curious aspects and connections which would not otherwise be visible; he infuses, as it were, the dose of bismuth which makes the position of the intestine apparent on the X-ray screen (86).

Eliot describes the process of poetry in synaptic terms, “arresting” the current of feeling in mid-sequence to allow the establishment of new connections, yet these are also digestive terms: the poet “extracts” every possible ounce of suspended emotion. In this light, the inclusion of the intestinal metaphor at the end of the passage seems hardly accidental as it points the way to a new, body-centered aesthetic.

One possible source of Eliot’s digestive language is Remy de Gourmont, who describes a process of creative “absorption” whereby ideas will “disintegrate” and “yield their solid parts to our organism” (*Selected Writings* 158).⁸¹ Like Eliot, Gourmont links mental and digestive activity, arguing that the brain works through the fragmentation and redigestion of matter: “Once they have entered us, ideas remain either inert, unknown, or else they disintegrate. In this first case, it is not long before they are expelled from the mind, somewhat like an indigestible fragment” (160). In the mind capable of digesting ideas, these external sources of knowledge are united “with the other atoms of knowledge already within us. An idea is digested, assimilated” (160). By describing aesthetic creation as a merger of new experience with pre-existing “atoms of knowledge,” Gourmont provided a way to enlarge knowledge while staying within the bounds of the sensibility. As a result, he transforms the intellectual confinements of behaviorism into a source of creativity, bringing together not only intelligence and instinct, but also thought and sensibility.

Despite his revisionary interpretation of behaviorism, Gourmont’s writings derive their potency from his complete acceptance of man’s animal origins. In *The Natural Philosophy of Love*, Gourmont shockingly translates the most elevated of human emotions

⁸¹ Eliot repeatedly praised Gourmont’s work, noting in *The Sacred Wood* that Gourmont represented “the critical consciousness of a generation” (44).

into the basest terms: “Love is profoundly animal; therein is its beauty” (16).⁸² As he exposes the physiological foundations of love, he also criticizes the intellectualization and abstraction of what is, essentially, a matter of anatomy and instinct. Like Pavlov and Watson, Gourmont approaches human intelligence skeptically, viewing no fundamental difference between animal instinct and “higher” intellect: “There is no abyss between man and animal; the two domains are separated by a tiny rivulet which a baby could step over” (*Natural Philosophy* 16). However, Gourmont makes an important distinction between the transmission of intelligence in animals and humans, arguing that animals pass on instincts to their offspring while humans transmit abstract ideas or “notions” that gradually abstract the intellect from the sensibility. Because these ideas pervert the body’s relationship to the external world (and, in the case of sex, its relationship to other bodies), the human intelligence “instead of being the sum total of the sensibility, is, so to speak, the deviation or transmutation. There remains very little sensibility; it is nearly all turned into intelligence” (*Natural Philosophy* 204). Although humans are considered the most reasonable and intelligent of all animals, Gourmont argues that this intelligence is a deviation from sensibility; man is

the least poised and the least reasonable of all animals...he is an animal lunatic, that is to say one who flows out on all sides, who unravels everything in theory, and tangles up everything in fact, who desires and wills so many things, who throws his muscles into so many divers activates that his acts are at once the most sensible and the most absurd, the most conforming and the most opposed to the logical development of life (*Natural Philosophy* 180).

Gourmont’s description of man as “animal lunatic,” flinging his muscles wastefully and irrationally, shows the dissociation of thought from useful action. According to William

⁸² I am using Ezra Pound’s 1922 translation of Gourmont’s *Physique de l’amour, essai sur l’instinct sexual* (1903). Although Pound translated *Physique* as “Natural Philosophy,” indicating Gourmont’s use of the natural sciences to build his argument, it has also been translated “Physiology,” reflecting Gourmont’s connection between animal anatomy and sexual love.

James, the role of learned behavior and habitual action is the simplification of movements and the reduction of fatigue, instincts “economize the expense of nervous and muscular energy” (*Principles* I.112). In contrast, Gourmont argues that human intelligence is moving backwards, unraveling the circuits of learned behavior in opposition “to the logical development of life.” For Gourmont, the highest function of thought is not human intelligence but the practical application of hereditary instinct in the form of behavior.

In this way, Gourmont uses behaviorism against itself, borrowing its language and concepts while reversing its interpretation of evolution. While Thorndike and Watson suggested that human intelligence represents an advanced form of animal instinct, Gourmont argued that intelligence precedes instinct: “How do they fail to see immediately that this preservative instinct, if it is hereditary, has had a beginning, and that, at this beginning, there was a fact of knowledge?” (*Natural Philosophy* 159). Gourmont contrasts the “lower” inherited instinct of the wasp (hymenoptera) with the “higher” individual intelligence of the bee:

the insect [hymenoptera] attacks the nervous system, it knows the power of beginning a movement lies in the nervous system and not in the limbs...the bee stings at random, and so brutally that she mutilates herself while often inflicting but an insignificant wound on her adversary. Collective civilization has diminished the individual genius (*Natural Philosophy* 193).

Rather than lamenting this diminishment of genius, Eliot’s individual talent, Gourmont praises the inherited knowledge of “collective civilization.” For Gourmont, instinct is not the lowest form of intelligence, but the expression of a tradition of knowledge: “What is instinct? The hereditary transmission of knowledge” (*Natural Philosophy* 160).

In *The Natural Philosophy of Love*, the limitations imposed by the nervous system become assets; the materiality of the nerves and their hardened circuits reveal a history of

evolutionary knowledge. Gourmont's work extols sensuality, choosing animal sexuality—with its explicit aim toward the maintenance and continuation of life—over the rarified, and lifeless, love of poets. In smashing the idol of love, he is also attacking the church of Darwin, with its premise that man has raised himself above his animal cousins. Gourmont criticizes Darwinian evolution: “Darwin arrived, inaugurated a useful system, but his views were too systematized, his aim too explanatory and his scale of creatures with man at the summit, as the culmination of useful effort, is of a too theologic simplicity” (*Natural Philosophy* 12). According to Gourmont, Darwin's desire to make humanity the culmination of evolution led to a valuation of intellect over instinct. Because it is instinctual behavior and not intellectual theorizing that sustains life, this hierarchy is at odds with the fundamental tenets of evolution.

In an early satiric poem, “The Hippopotamus,” Eliot adopts Gourmont's counter-evolutionary language to attack the “theologic simplicity” of organized religion.⁸³ Like Gourmont's hymenoptera, the physiological limitations of the hippopotamus prove his superiority over the rational inheritance of the Church. Although Eliot's humorously heroic hippopotamus can “never reach / The mango on the mango-tree,” the limitations on his diet prevent him from temptation; his modest aspirations stand in stark contrast to the Church's exotic diet of “pomegranate and peach” (31). Likewise, his susceptibility to nervous shock, a vulnerability that reflects his composition from “flesh and blood,” separates him from the infallibility of the Church. Dissociated from the flesh, the Church has become steadily more detached from the Christian faith as it uses intellectual arguments to justify its immoral

⁸³ As Grover Smith notes, the immediate inspiration for the poem was probably Gautier's “L'Hippopotame.” In contrast to Gautier, “who compares himself to the hippopotamus in invulnerability and freedom, Eliot makes the animal represent the weakness of the natural man, lukewarm in religious zeal but more acceptable to God than a disingenuous episcopacy” (Smith, *T.S. Eliot's Poems and Plays* 39).

financial plunder. Just as Gourmont reverses the evolutionary model of mind by elevating instinct over intelligence, Eliot's humble hippo begins with his "belly in the mud" but achieves spiritual ascension: "I saw the 'potamus take wing / Ascending from the damp savannas" (*CPP* 30-1). Completing the moral and evolutionary reversal, it is the Church that ends "below / Wrapt in the old miasmal mist" (*CPP* 31). One could argue that Eliot's hippopotamus has achieved a unification of sensibility lacking in the Church, letting his body guide his behavior and, as a consequence, his moral and intellectual life.

As in Eliot's poem, Gourmont's reversal of abstract intelligence and material instinct ends in a unification of sensibility. If one divides intelligence from instinct, Gourmont argues, "one must either accept that instinct is a fructification of intelligence; or intelligence is an augmentation of instinct" (185). Gourmont rejects the second choice as self-contradictory, for if instinct is always directed at a specific action it will produce, like a chemical reaction, a specific result. Diverse intelligence cannot arise from instinct because it would only repeat the same reaction and produce the same material byproduct, what Eliot would call "the droll precipitate of fact." On the other hand, if the normal hierarchy is reversed and intelligence is placed before instinct, all hereditary behavior can be thought of as "intelligent." Following this model, Gourmont writes that "Intelligence will be the deep, the reserve, the spring which after long digging emerges between the rocks. In everything that intelligence suggests, the consciousness of the species makes a departure; what is useful is incorporated in instinct, enlarging and diversifying it" (*Natural Philosophy* 187). Whereas behaviorism used instinct to limit the scope of intelligence and consciousness, Gourmont uses intelligence to "enlarge" and "diversify" the instinct. Arguing that intelligence is the fruit of instinct, Gourmont is also careful to note that both are "the seed or flower of a single

plant, the sensibility” (185). Both intelligence and instinct emerge from sense experience, and it turn enlarge and refine that experience.

Gourmont’s reversal of the hierarchy of intelligence provided a new way to understand the habitual activity of the nervous system. For Eliot, it also provided a new way to understand the creative activity of the poet, which Eliot described as the fruit of the “thinking senses.” Eliot echoes Gourmont’s language of flowering and fructification in his review of *The Education of Henry Adams*, in which he contrasts the intelligence oriented toward action with the inefficient intellectual pursuits of Adams:

It is probable that men ripen best through experiences which are at once sensuous and intellectual; certainly many men will admit that their keenest ideas have come to them with the quality of a sense-perception; and that their keenest sensuous experience has been “as if the body thought.” There is nothing to indicate that Adams’ senses either flowered or fruited: he remains little Paul Dombey asking questions (“A Skeptical Patrician” 362).

Like Gourmont, Eliot describes thought and emotion as the products of sensibility, but he also suggests that these thoughts and emotions are only useful when oriented at the specific problems of experience. He requires that poetry be directed at solving these problems, and criticizes thinking, like Adams’, not directed at experience: “the possible interests of the poet are unlimited; the more intelligent he is the better; the more intelligent he is the more likely he will have interests: our only condition is that he turn them into poetry, and not merely meditate on them poetically” (*SP* 65). Eliot’s objection to the ratiocinative poetry of the 18th century and the ruminative poetry of the 19th is that, in each case, the poet’s thinking has been divorced from the context of experience. In contrast, Eliot praises Donne’s treatment of the “bracelet of bright hair about the bone” in “The Funeral”: “A poet of morbidly keen sensibilities but weak will might become absorbed in the hair to the exclusion of the original association which made it significant; a poet of imaginative or reflective power more than

emotional power would endow the hair with ghostly or moralistic meaning. Donne sees the thing as it is” (“Reflections on Contemporary Poetry”). Donne “sees the thing as it is” because he combines his own sensibilities with previous knowledge, a process Eliot contrasts with a more individual poet who becomes absorbed in personal, and misguided, associations. Gourmont separates the collective knowledge of instinct from the “notions” of individuals and, similarly, Eliot distinguishes the “unified sensibility” of the Metaphysical poets from the strong personalities of the poets that followed them.

By collapsing knowledge and instinct, Gourmont’s work suggests that each act of the intellect is simultaneously a reflection of evolutionary history and its specific application to the present moment. Likewise, Gourmont connects the imagination and the sensibility, arguing that imaginative men are identified by “brains...rich in elements” (153). In order to supply these elements, the imagination requires “a constant supply of sensations, along with a very lively sensibility and an incessantly renewed capacity for feeling” (153). The creative instinct is then both a characteristic of heredity and personality, a meeting of an intellectual tradition and an individual with a unique sensibility. It could be argued that Eliot’s corresponding theory of a “unified sensibility” is built upon both a definition of tradition and a description of poetic personality. Just as the “intelligence” of Gourmont’s hymenoptera is a reflection of his evolutionary past, the intelligence and originality of Eliot’s ideal poet is a reflection of tradition: “we shall often find that not only the best, but the most individual parts of his work may be those in which the dead poets, his ancestors, assert their immortality most vigorously” (*SP* 38). This conserved knowledge is always applied to a historical context, an environment changing and development. The enlargement of sensibility thus

occurs when a historical moment meets a poet, like Donne, with the ability to adapt traditional forms and meanings to his age.

Fittingly, then, Eliot's definition of "metaphysical" indicates both a type of sensibility and a historical condition. Only in an environment marked by complexity and variety, like modern civilization, can instinctual complexes be enlarged by feeling. However, only a "metaphysical" poet can adapt his feelings to changing sense experience. Eliot writes,

it is obvious that in certain periods the revolution of the sphere of thought will so to speak throw off ideas which fall within the attraction of poetry, and which the operation of poetry will transmute into the immediacy of feeling. It is these moments of history when human sensibility is momentarily enlarged in certain directions to be defined, that I propose to call the metaphysical periods (53).

Eliot's unification of sensibility, then, should be viewed as the necessary counterpart to his theory of tradition. Because knowledge is preserved in the brain in the form of instinct, all previous intellectual concepts co-exist in the present moment. The poet's mind is an accumulation of the past, but the poet's body exists in the present moment, making the act of creation a reconciliation of both the past and the present, the mind and the body. The brain, being material, is equally dependent on pre-established circuits and present experience, leaving no place for "personality" or consciousness in the sense used by psychologists. Gourmont writes, "We have only a rough idea by what mechanism sensation is transformed into action. We only know that, for that transformation to take place, the intervention of the consciousness is not necessary" (*Selected Writings* 144). Like Gourmont's theory of subconscious creation, Eliot's theory of tradition is not only impersonal but also unconscious, a reflection of the common origins of these theories in behaviorism. When thought and feeling are unified, the poet's consciousness is no more than a "shred of platinum" in the reaction, combining sense experience with emotions and ideas that were once sensory

themselves. All the poet needs is a nervous system and a cerebral cortex, one sensitive to the changing environment and the other a reservoir of inherited intelligence and the site of association.

While confining the mind to the senses, Eliot and Gourmont both argue that the constant barrage of sensory information and the mind's capability of association provide enough space for creativity. This interpretation of behaviorism provides the first component of Eliot's unified sensibility, explaining the process of poetic creation.

During this process of creation, the poet applies traditional ideas and emotions to sense-perceptions, utilizing inherited intelligence, but then uses the sense-perceptions to form new associations that refine and reconfigure that tradition for application to present moment. As Gourmont writes, the creative intelligence is

a matter of either conceiving new relationships among old ideas and images, or of separating old ideas, old images united by tradition, and considering them one by one, being free to rework them and arrange an infinite number of new couplings which a new operation will disunite once again until new ties, always fragile and equivocal, are formed (11).

By locating the act of creation in the nervous system, Gourmont suggests that art requires a grounding in the body rather than the freedom provided by the abstract mind, arguing that "Consciousness, which is the principle of liberty, is not the principle of art" (144). However, Gourmont's and Eliot's turn to the body also makes creation a private act, an affair of subtle changes in an individual nervous system. Solving one problem by unifying thought and sensibility creates another: how to communicate between embodied minds, nervous systems with fixed patterns of meaning? This question is central to "The Love Song of J. Alfred Prufrock," in which Eliot forges a solution to the problem of solipsism and fragmented consciousness through a combination of dissolution and unification.

Prufrock's "I" and the Fall of Consciousness

"The Love Song of J. Alfred Prufrock" is the starting point for many undergraduate studies of Eliot's poetry. Not only does the poem highlight Eliot's characteristic fragmented form and allusive tendencies, but it also raises a question that persists throughout his career: in a skeptical modern age, how can the individual transcend the boundaries of the self? If we are only points of consciousness, what Bradley would call "finite centres," how can solipsism be avoided, and how can the mind make meaningful connections with the world around it? In many ways, Prufrock is a poetic mediation on the tension between evolution and dissolution, the uneasy separation between higher-level thinking and primitive automatism. Independent of its thematic content, "Prufrock" is a fitting point of entry in another sense. Despite the poem's problematization of communication and contact, the opening lines of the poem almost seem to offer an invitation to the study of Eliot's poetry in the form of a direct address:

Let us go then, you and I,
When the evening is spread out against the sky
Like a patient etherised upon a table (*CPP* 3).

For most readers, these lines are remarkable for the startlingly discordant image they contain, what Donald Childs calls the "medical metaphor" that compares the evening and the etherised patient. The starry evening sky, once a symbol of the infinite dimensions of the natural world, a source of moral (and geographical) guidance, is pulled from the sky and prepared for Eliot's scalpel. In effect, Eliot's lines promise a piecemeal destruction of Romanticism and all its transcendental pretensions as he places its ideals upon the slab and prepares them for his skeptical dissections.

In a poem of “Prufrock’s” length, however, it is tempting to gloss over these lines too quickly. Indeed, the first three lines of Prufrock are some of the most complex and ambiguous of Eliot’s career, using grammatical devices to compound the line’s potential meanings. As Robert Fleissner notes, the first line is actually ungrammatical, and should read “you and me” if the pronouns are in apposition to the pronoun “us” and the object of “Let” (203).⁸⁴ Childs uses this grammatical error to speculate that Eliot’s word choice might be a calculated indirection rather than a misunderstanding of the rules of English grammar. According to Childs, Eliot’s failure to distinguish between the “I” and the “me” foregrounds Prufrock’s contradictory impulses, exposing two incompatible versions of the self.⁸⁵

Childs’ reading fits into a history of criticism that transforms the “you and I” from individual centers of consciousness to aspects of Prufrock himself. These readings not only indicate the influence of Freud and other psychologists on Eliot’s work, but also reflect the neurologically divided minded hypothesized by Spencer and Jackson and denied by behaviorists like Watson. Hugh Kenner was perhaps the first to attribute the “you and I” to the consciousness and subconscious of Prufrock, a reading which emphasizes Prufrock’s inability to communicate with the world around him and makes the poem a prolonged conversation within the self. Similarly, Piers Gray claims that the pronouns represent “an act of déjà vu, the present self communicating to the memory of a past version of the self” (70). Gray, in turn, connects this act of déjà vu to Pierre Janet’s concept of *dedoublement*, arguing

⁸⁴ Fleissner proposes that this solecism in the first line, a common grammatical mistake, is intended to show the ridiculousness of Prufrock’s pretensions and his “failure to rise above the commonplace” (205). In making this argument, Fleissner assumes that the speaker in the first line is Prufrock.

⁸⁵ Childs reads this distinction between the I and the me as Bergsonian, reflecting the difference between self-consciousness and unconscious pure memory. Lending support to Childs’ reading is Eliot’s conflation of space and time in the first few lines, where Eliot describes the evening as “spread out” on the sky and the table. As Childs also notes, the spreading out of the evening also points to Eliot’s dissertation on Bradley, in which he describes the self in material (and neurological) terms: “that which we know is merely spread out before us in pure contemplation, and the subject, the I, or the self, is no more consciously present than the intercellular action” (KE 154).

that Prufrock's escape from the self into an imagined world is ultimately a form of madness. These readings have been so convincing that Prufrock is now largely read as a modernized version of the dramatic monologue perfected by Browning, a monologue that is really a dialogue between the fragmented components of the self.

As the readings above indicate, to read Prufrock in this light is to assume that both the "I" and the "you" are Prufrock himself. Temporarily accepting the assumption that the "I" is Prufrock, there is still little evidence to suggest that the "you" is located within the speaker's consciousness. If Prufrock is the singer of this love song, it certainly requires a degree of cleverness to make an aspect of his own consciousness the *objet d'amour*. Indeed, despite the claims that Prufrock is addressing a region of his consciousness, it seems equally plausible that the "you" could be located outside the self. Eliot later claimed that the "you" was an unidentified male companion, but whether this companion is Prufrock or Eliot's (perhaps the volume's original dedicatee Jean Verdenal) is still left to the reader to decide. Ultimately, the reader cannot conclude whether the "you" is located inside or outside of Prufrock's consciousness and, as a result, cannot conclude whether this listener is located inside or outside of the poem itself. The speaker may be addressing another figure in the poem, communicating with his own id-like subconscious, or reaching out to the reader in a rather unsettling direct address.

This ambiguous pronoun, however, is only part of the problem. In his work on Eliot, George Williamson poses the following question, "the 'I' is the speaker, but who is the 'you' addressed?" (59).⁸⁶ Williamson's question is more complex than it first appears, for it

⁸⁶ Williamson uses the poem's title to suggest that the "you" is likely a lady, and rigidly denies any application of the "I" to the poet. He rather peevishly denies that the poem can be read as a "document for psychoanalysis," claiming "If you choose to make Prufrock a personal testament or an allegory of modern man, that is your affair, but it is not the poem" (19).

focuses (like the readings above) on the identity of the “you” while sidestepping the equally problematic “I.” All readers can agree that the “I” is the speaker, but who is that speaker? While the title implies that Prufrock is the singer of love song, one must also entertain the possibility that the “I” is not Prufrock at all. Indeed, the first section of the poem seems a prelude, guiding the reader through “half-deserted streets” to lead them to an “overwhelming question” (*CPP* 3). Viewing Prufrock as the speaker makes this a journey to “the room where women come and go,” an invitation to travel past unsavory “one-night cheap hotels” and “sawdust restaurants” to pay a visit to Prufrock’s favorite haunt. Equally plausible, however, is the proposition that we are being prepared by someone else for a visit with Prufrock himself, whose consciousness slowly emerges as the poem progresses. Perhaps, then, the “I” is the poet himself, transporting the reader to his etherized patient, a case study of the psychological problems of the modern era. It becomes clear that the duality implied in the first line is an insufficient description for a group that may include as little as one member and as many as three.

The expansion of meaning in the first line further complicates the second ambiguity at the poem’s opening, the unclear tenor to the simile in the third line: “like a patient etherised on the table.” Although the “spreading out” of the evening seems to invite comparison with a body spread on the doctor’s table, one could easily read the patient as the “us” in the first line. The lines are composed of a perilous puzzle of prepositions and commas, making possible a variety of logical linkages and patterns of meaning. Further, any attempt to account for Eliot’s distinction between commas and space must take into consideration his frequent use of line breaks to serve the same purpose as commas and other

forms of punctuation.⁸⁷ Prufrock's later complaint, "It is impossible to say just what I mean!" (*CPP* 6), could be a coy self-assertion on the part of Eliot, whose pronouns and polyphony create multiple readings. Finally, however, it is the reader who has cause for complaint as he or she attempts to connect the poem's fragments into a meaningful narrative; Eliot's use of space and punctuation precludes any clear sequential connection, presenting instead a convergence of simultaneous and conflicting narratives that matches Prufrock's own "divided" mind.

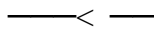
Through this convergence of meaning, Eliot's metaphor not only creates conflict between the ethereal evening sky and the descent into unconsciousness caused by etherization, but also paradoxically opposes the act of "going" with apparent paralyzation.⁸⁸ How can one go like an etherized patient? In opposing action and inaction, the lines act as an introduction to the poem's central tension between Prufrock's persistent desire for physical connection and action and his apparent impotence and inaction. The juxtaposition of movement and paralysis reflects Prufrock's idealization of actions that never occur, his occupation of a liminal space between reality and fantasy that is always on the verge of being crossed if he would only "dare" and "presume." Significantly, Eliot's lines describe a hierarchical conflict between "higher" ideals and "lower" reality, the same conflict outlined by Jackson in his description of pathological epileptic dissolution. This diagnosis, the collapse of ideals resulting in a solipsistic failure to connect or interact with others, becomes

⁸⁷ In a 1921 letter to John Quinn Eliot defends his unorthodox punctuation: "I see reason in your objection to my punctuation; but I hold that the line itself punctuates, and the addition of the comma, in many places, seems to me to over-emphasize the arrest. That is because I always pause at the end of a line in reading verse, which perhaps you do not" (*Letters* 451).

⁸⁸ Ben Lockerd writes that the simile in the first lines reflects Prufrock's failed attempt at Romanticism. Searching for an appropriate response to the evening, Prufrock can only produce a scientific metaphor that is discordantly modern. However, Lockerd notes that the simile is not entirely a failure, for "etherised" can be read in the ancient sense, "in which aether ordinarily means (in both Greek and Latin) "sky." If the patient in the poem is "aetherised" in this sense, he is "spread against the sky" like the evening.

central to the poem. As I have shown, the diagnosis gains further impact from Eliot's compounded ambiguities, which allow all the possible referents of the pronouns in the first line to represent the poem's patient: Prufrock, the poet, the reader, or all three.

Before even beginning the poem, the reader is thus faced with a series of overwhelming questions: who is the doctor and who is the patient? Is the deceptively innocuous invitation in the first line an invitation to share Prufrock's disease or a plea to supply a cure? These questions, I would argue, are deliberately left open, displaying a form of "impersonality" that allows the reader to perform a variety of roles within the poem. Both Prufrock and his creator are unwilling to accept the dissolution of consciousness, which leads to deterministic mechanism, or the abstraction of the mind, which leads to solipsistic detachment. Instead, Eliot uses synaptic space to bring together the ideal, unifying mind and the material, fragmented body, forming "nerves" into a meaningful "pattern" as he forms disconnected lines into a poem. Although "Prufrock" diagnoses the symptoms of the modern condition, marked by the fragmentation of experience and the possibility of solipsism, its structure also points toward a cure, unifying the fragments and creating meaning by connecting the poet and the reader.



Based on his symptoms, most prominently his inability to initiate action, Prufrock's particular disease is what Pierre Janet would call "abulia," which he describes as "the diminution of the will; it applies to laziness, to hesitation, to powerlessness in acts, as well as slowness, indecision, to the absence of attention to ideas (117).⁸⁹ In *The Mental State of Hystericals* (1901), Janet describes a patient who suffers from such a diminution of the

⁸⁹ Eliot was familiar with the term "abulia," as evidenced by a letter in which he diagnoses himself with the condition: "I am satisfied...that my "nerves" are a very mild affair, due, not to overwork, but to an aboulie and emotional derangement which has been a lifelong affliction" (*Letters* 486).

conscious will: "I go, I come, I cry," says Margaret to us," but without doing anything, without accomplishing anything, without willing, I am like a machine that has no longer any spring" (120). Margaret's loss of will, caused by a shrinking of the brain's higher centers, results in a descent into mechanization and automatic activity. Janet's psychological description of abulia echoes Jackson's neurological description of dissolution: abulia causes a "lowering" of consciousness that is also a return to previous forms of mental activity. The fall of consciousness causes the re-emergence of the patient's past; the common characteristic of the abulia's actions is that "that they are *automatic* acts...All these conserved acts are *old* acts, not executed for the first time to-day." (139). Like Jackson, Janet associates a lowering or diminution of brain activity with a withdrawal into the past, connecting a neurological descent in space with an evolutionary descent in time. According to Janet, the repetition caused by abulia eventually contracts consciousness to a single repeated idea, an "idée fixe" that comes to form the whole of the patient's consciousness.⁹⁰

The contraction of consciousness caused by abulia, like the dissolution of consciousness described by Jackson, exhibits the fragility of the higher mind. Whether through the contraction of the will or the exhaustion of the nerves, consciousness is always falling, always returning to the past. As consciousness falls, the unification provided by the higher mind gives way to isolated and mechanical acts that come to define the entirety of the patient's identity. In Eliot's poem, Prufrock seems to realize that the fragments of his life cannot be connected into a unified self, leading to a personality that changes from moment to moment. This aspect of Prufrock's character reflects an important component of Janet's description of abulia; Janet argues that the anesthetic suffers a failure of identity, a

⁹⁰ Eliot took several pages of notes on Janet's *Neuroses et idées fixes*, some of which are reproduced in Donald Childs, "Fantastic Views: T.S. Eliot and the Occultation of Knowledge and Experience" *Texas Studies in Literature and Language* 39.4 (Winter 1997): 357- 375.

dissociation of sensibility in which sensations “are not transformed into personal perceptions and do not become a part of the personality” (37). Instead of a stream that persists through time, Prufrock’s identity is new with each experience. Prufrock adapts to each new sensation, each moment representing a reformation of consciousness: “There will be time, there will be time / To prepare a face to meet the faces that you meet” (*CPP* 4). Each unified vision of the self collapses in the face of experience as the continuity of the higher mind is made susceptible to time.

The ephemeral nature of Prufrock’s identity is certainly connected to his inability to decide on a course of action. As Prufrock notes, “in a minute there is time / For decisions and revisions which a minute will reverse” (*CPP* 5). When identity is dissolved into fragments, the patient suffers a “dissociation of sensibility” as new sensations cannot be assimilated into consciousness. Limited in its scope, the “I” rejects sensations and actions that cannot be connected with the self. Janet writes of the hysterical patient,

Not only is the new sensation not reunited to certain determined recollections, but it is not reconnected with any of the sensations which, at this moment, constitute the personality of the subject. It is for this reason that the subject says, quite justly: “*I do not see; I do not remember; I cannot move*” (243).

On the one hand, the detachment of consciousness from action could result in paralysis, a lack of movement caused by the belief that the “*I cannot move.*” On the other, it could cause a division of the self as it separates the conscious “I” from the movements carried out by the body. Because the “I” is new in each moment, murdered and created with each new contact, it becomes impotent and emptied of meaning. Indeed, Watson’s denial of consciousness is based on his conviction that each act is individual, an isolated reflexive response generated in response to an immediate stimulus. Prufrock’s insistent use of the personal pronoun, echoing the statements of Janet’s hysterical patient, ironically reflects the absence of such an “I.”

When he asks “how should I begin?” he is really asking, “how should *I* begin?”: how can experience begin to be transformed into a unified self? (*CPP* 5)

By failing to achieve a constant “I,” Eliot’s poem shows the collapse of an ideal version of the self into a series of disconnected fragments. However, as the ambiguous pronouns at the opening indicate, the dissolution of Prufrock’s mind is also projected on those around him. Prufrock is unable to connect his actions and sensations into a single consciousness, but he is likewise unable to connect the sensory fragments of the women in the poem to a unified ideal. As Grover Smith notes, “Prufrock suffers in a hell of defeated idealism, tortured by unappeasable desires” (15). Prufrock’s higher mind dissolves into anatomical fragments as he recognizes that he is merely a series of sensori-motor actions, “nerves in a pattern.” Likewise, the women in Prufrock’s life fail to cohere into a single ideal, becoming a collection of anatomical pieces: “eyes that fix you in a formulated phrase” and “arms braceleted and white and bare” (*CPP* 5). The gross materiality of the nervous system is echoed in these pieces of female anatomy, which are all too physical in their construction, “downed with light brown hair!” (*CPP* 5). Detached from the women who own them, these sensory fragments are the crumbled pieces of Prufrock’s idealized vision of love and femininity. The ideal woman has been dissociated into her primitive and grossly corporeal, even animalistic past, has fallen from the pedestal and shattered on the floor.

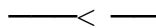
In this way, the women in the poem act as reminders of Prufrock’s fallen consciousness. As their anatomy indicates, these women are only symbolic representations of Prufrock’s failure to bring his conscious existence into an ideal unity. Eric Sigg cleverly proposes that the eyes of the women force Prufrock to confront other “I’s”: “Eyes act as agents of consciousness, and self-consciousness. Eyes hold a terror for Prufrock because

strong 'I's' back them up, reaching into his private self to discover its fragility and lack of a coherent 'I'"(92). Indeed, the eyes of the women fix Prufrock to the wall like a wriggling bug, exposing his materiality in a manner that mimics the magic lantern that casts his nerves on a screen. Prufrock's failure to unify the pieces of his consciousness thus parallels his inability to confront the eyes/I's of the women around him.

As hinted in the poem's opening, the division of Prufrock's self into the conscious "I" and the acting, sensing "you" becomes tangled in another division between the self and other selves. Prufrock's psychological failure to achieve a persistent identity becomes a social failure, a breakdown of communication between "you and I." Just as Prufrock's abulia leads him to detach his thinking self and perceiving self, the physical women that Prufrock encounters are divided into their physical and ideal components. The women in "Prufrock" offer sexual connection without communication, waking up on Prufrock's pillow complaining "that is not what I meant at all. / That is not it, at all" (CPP 6). Whether prostitutes or just women who occupy Prufrock's "restless nights in one-night cheap hotels," these women are faceless and largely voiceless. While Prufrock's consciousness dissolves into a repetitive series of automatic behaviors, his love life becomes a collection of meaningless encounters, women who come and go in his life with a repetition that echoes Prufrock's coffee spoons.

Indeed, the women who are given voices in the poem noticeably avoid conversation with Prufrock. In a room Prufrock never enters, the women "talk *of* Michelangelo" but their meaningless chatter is never directed *at* anyone. Whereas the women Prufrock encounters are given anatomical pieces without voices, these women have voices without bodies. Occupying an ideal space in "a farther room," the women offer communication without

connection, speaking of a romanticized version of love that Prufrock preserves through his inaction. As Smith notes, Prufrock attempts to preserve an ideal form of love by refusing to seek love altogether; he doesn't dare seek actual love because it would never satisfy him (*T.S. Eliot's Poetry and Plays* 15). This ideal form of love emerges at the end of the poem, embodied in the "sea-girls" that live in a musical undersea chamber that conspicuously echoes the "music" from the "farther room" of Prufrock's waking life. Like the women speaking of Michelangelo, Prufrock hears the "sea-girls" sing "each to each" but not to him. Idealizing both an ideal form of love and communication, the mermaids finally achieve the "love song" promised by the title. However, the obvious division between fantasy and reality, like the division between the land-locked Prufrock and the undersea chambers of the mermaids, makes this love song a taunting reminder of his own failures. When Prufrock laments, "I do not think they will sing to me," he reasserts the division between his idealized dreams and his experience. The mermaids will never sing to him because they are a fantasy, an ideal vision of love that could not survive physical existence or, in Prufrock's eyes, a past form of femininity and romance that cannot survive the conditions of modern life. In either case, the real women in Prufrock's life will never hear his love song because he never gives them the opportunity—his I is always preparing and never beginning.



The elusive ideal of the mermaids, representing the fragility of higher consciousness, is painfully shut off to Prufrock. As in Eliot's own writing, the abstract idea of consciousness that James descried (but introspective psychologists like Langfeld still researched) is exposed as an optimistic fiction created out of human desire. However, the way down, the dissolution of the self into material fragments and the replacement of

conscious activity with unconscious behavior, still represents a tempting possibility. If unity cannot be attained through association, it might still be attained through annihilation.

Prufrock finally achieves a resolution of the “you and I” in the poem’s final line, which replaces the first and second person singular pronouns with “us” and “we”: “Till human voices wake us, and we drown” (*CPP* 7). Despite this apparent resolution, the association of waking and drowning complicates Prufrock’s final solution by connecting the unification of consciousness with death. Finally, then, Prufrock finds unity only through the abandonment of consciousness, avoiding the conflict between the ideal and the material through an act of desperate escapism. Unable to rise to the ethereal heights of the evening sky, Prufrock seeks to plunge himself into the sea, descending to unconsciousness and insensibility, becoming “a patient etherized upon a table.”

By eliminating consciousness, a form of psychological drowning, Prufrock resolves the conflict between mind and act. While his desires can’t be realized in action, Prufrock can find peace by eliminating conscious will, limiting the scope of his mental activity. This psychological descent, as Spencer and Jackson’s evolutionary models of mind indicate, is a return to an instinctive, pre-conscious form of behavior. Benjamin Lockerd argues that Prufrock’s “instinctual desire is to start over, to devolve and begin again as a truly unconscious creature in the real ocean, the ‘silent seas’ where life originates” (89). For Lockerd, this “death by water” is a spiritual transformation; in his reading of *The Waste Land* he suggests “Psychologically and spiritually, drowning has always symbolized entering into a new consciousness or new state of grace...the drowned man enters entirely into nature and into the unconscious, and there transformation becomes possible” (178). A plunge in the primordial soup offers the promise of renewal by returning the mind to its evolutionary

origins, but it also necessitates a dissolution of consciousness that comes dangerously close to self-annihilation. The automatic, unconscious activity of the lower mind marks the beginning of consciousness, but it also may mark its end. Prufrock's desire to be "a pair of ragged claws / Scuttling across the floor of silent seas" is fundamentally a wish for insensibility, a wish to escape the problem of personal identity by denying the self altogether (*CPP* 5).

As Lockerd's analysis indicates, Prufrock's descent into the "silent seas" is also a psychological descent into a lower stage of mind. In this way, Prufrock's final drowning is only the final stage of the anaesthetization begun in the opening lines—he begins and ends in unconsciousness. Herbert Spencer notes that the degradation of consciousness under anesthetic (in this case chloroform rather than ether), results in a reversal of evolution ending with a complete correspondence of the mind with the environment:

The degradation of consciousness by chloroform, abolishing first the higher faculties and descending gradually to the lowest, may be considered as reversing that ascending genesis of consciousness which has taken place in evolution...It is significant, therefore, that impressions from the special senses ceasing early, leave behind as the last impression derived from without, the sense of outer force conceived as opposed to inner resistance; for this we saw to be the primordial element of consciousness (*Principles of Psychology* I.640).

The higher faculties of mind allow the individual to distinguish his internal life from external impressions, in turn permitting the manipulation of the environment and the adaptation of mind. As Spencer claims, the mind unifies the heterogeneous fragments of an increasingly complex environment and, in turn, improves its ability to interact with that environment. However, the final stages of anesthesia leave only a dull sensation of the external world, "the sense of outer force," that reduces the complexity of experience. Eventually, consciousness

is reduced to a generalized impression of the environment, becoming all sensation as thought is extinguished.

Once again, then, the way down and the way up are the same. Whereas an ascent into higher consciousness produced thought detached from real sensory experience, a descent into lower consciousness creates sensations without mental activity. Both dissociations of sensibility are pathological. Janet argued that abulia caused a contraction of the higher consciousness, shrinking the ideal mind until the “I” is emptied of meaning, but he also suggested that anesthesia produced similar effects through the contraction of perception. Janet describes the self in neuronal terms, as a collection of thoughts composing a system that represents the “I.” Under the influence of anesthesia, new sensations are not incorporated into the system, sensations “are not transformed into personal perceptions and do not become a part of the personality” (37). Like Spencer’s description of primitive consciousness, Janet’s description of anesthesia elevates the importance of sensations while paradoxically eliminating their influence on consciousness.

Both abulia and anesthesia thus result in a dissociation of the “I” from sensation. In abulia this is caused by the contraction of the mass of thoughts into a single *idée fixe*, restricting the scope of conscious perception. In anesthesia the same end is achieved through the absence of sensibility; the patient’s “sensibility and insensibility are distributed, not according to any physical modifications of the sense itself, but according to certain ideas of the patient which determine the choice of the impressions, whether felt or not felt” (Janet 7). Prufrock’s etherization is a relinquishment of conscious will to the unconscious, a giving over of the self to “certain ideas” that dictate his behavior. In both abulia and anesthesia, the patient becomes powerless as he either succumbs to his obsessive *idée fixe* or replaces the

conscious will with unconscious, automatic behavior. Whether Prufrock chooses his fictional mermaids over their real-life counterparts, allowing an obsessive idea to dominate reality, or becomes a pair of ragged claws, giving himself over to pre-conceived patterns of activity, both involve a form of drowning.

In Eliot's poem, the final resolution of the "You and I" of the first lines into the "we" of the conclusion cannot be anything but problematic. Having spent the poem in pursuit of the "I," Prufrock finally abandons his attempt to connect with the world around him. After hearing the human voices, both the "you and I" drown together:

We have lingered in the chambers of the sea
By sea-girls wreathed with seaweed red and brown
Till human voices wake us, and we drown (*CPP* 7).

As Ronald Schuchard points out, the lines echo Gérard de Nerval's "J'ai rêvé dans la grotte où nage la sirène" (qtd. in Schuchard 11). Nerval's sirens certainly lurk in the background of Eliot's text, and it is the song of Prufrock's sea-girls that leads Prufrock away from reality, facilitating his escape into the protective chamber of his idealistic fantasy life. However, it seems significant that the mermaids do *not* sing to Prufrock, and it is the human voices, rather than the sea-girls' song, that leads to his drowning. If the sirens' song leads Prufrock from the shore to the sea, into the confines of his consciousness, the human voices are the rocks that break the shell of his consciousness into fragments on the sea floor.

With its final descent into the sea, Eliot's poem comes full circle. The beginning of the poem connects the tension between the ideal mind and the material body, the aether and the ether, to Prufrock's desire to act ("Let us go") and his apparent paralysis. Likewise, the juxtaposition of the ideal mermaid's song and real human voices at the end of the poem leads to an incompatible combination of waking and drowning, a psychological awakening and a

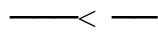
physical death. Locked in the chamber of the self through most of the poem, Prufrock finally embraces his materiality and gains the ability to hear human voices. In contrast to the other human voices in the poem, these final voices establish a connection between the “you and I,” between the self and other selves and between the two halves of Prufrock’s personality. As I have argued, this unity is achieved through the type of dissolution suggested by Spencer, Jackson, and Ribot, through the lowering of consciousness to a purely automatic and sensory level. The unified higher consciousness becomes a series of fragmented sensori-motor interactions with the outer world. The paradoxical combination of waking and death thus becomes more clear, for the awakening of Prufrock’s body is achieved through the death of his mind, a descent of consciousness to its primitive state perfectly captured through the metaphor of drowning. Whereas higher consciousness divides the you and I, locking Prufrock in the solipsistic chambers of the inner mind, the lower consciousness fragments the self while allowing it to interact with its environment.

Prufrock is locked in a purgatorial space between ideals that cannot be realized and a purely corporeal existence that leads to the annihilation of the mind. Eliot’s invocation of Dante in the poem’s original epigraph is altogether fitting, for it emphasizes the poem’s hierarchal structure. As in “Prufrock,” communication is only achieved in the face of destruction; Dante’s conversation with Guido de Montrefelto is only possible because they are both apparently doomed to damnation:

If I thought that my reply would be to a person who would ever return to the world, this flame would remain without more movement. But since no one has ever returned alive from this deep, if what I hear is true, I can answer you without fear of infamy (*CPP* 3).⁹¹

⁹¹ Peter North provides this translation in *The Norton Critical Edition of The Waste Land* (3, footnote).

Despite Guido's certainty, Dante does emerge from the depths of the Inferno and give voice to Guido's message. As a consequence of Dante's transformation from listener to speaker, Guido, too, is given the Lazarus-like ability rise and speak his message. Drowning in his own hell of isolation, Prufrock is likewise listener and speaker, the hearer of human voices and the voice from the depths that speaks through the trembling flames of the poem. We must, then, consider to what extent Prufrock escapes his fate at the end of the poem. Perhaps the poem itself, above all a form of communication with the reader, provides Prufrock a way out of his purgatorial space, a way to preserve the self while forming real contact with others.



If Prufrock retreats into an abstract conception of consciousness, away from the concrete structure of the nervous system, any form of communication becomes a leap of faith across the gulf standing between the ideal mind and the material body. Yet, if he accepts the materiality of experience, he risks the dissolution of the self as consciousness dissolves into a series of isolated moments. Faced with the practical impossibility of conscious communication, even the "you and I" found in the opening lines becomes an ideal as it momentarily allows the self-conscious "I" to communicate to the unidentified "you." As the ambiguity of those lines indicate, Prufrock's desire to hold the "you and I" in a single breath is inseparable from the problem of Eliot as he tries to bridge the space between the poet and reader. If Eliot's act of communication fails, if the fragments of the poem fail to cohere into a meaningful whole, Eliot is likewise forced to choose between isolation and fragmentation. In its content and structure, "Prufrock" reflects the philosophical and formal dilemma of Eliot himself as he attempts to define and legitimize a new, modernist poetic that embraces materiality without relinquishing unity.

The fate of Eliot's "I" is thus inextricably intertwined with Prufrock's as both poet and persona attempt to form the material fragments of experience into meaning. Whether by conscious craft or unconscious revelation, Prufrock's philosophical problems parallel those of the young Eliot, a man attempting to combine an inherent skepticism with an incompatible faith in the unity of existence. Caught between knowledge and belief at the time of the poem's composition (and, one could argue, for the rest of his career) the Eliot of 1910-11 was also caught between the scientific mysticism of Henri Bergson and the philosophy of F.H. Bradley with its curious mixture of sweeping skepticism and faith in the Absolute. At their heart, however, both philosophies adopt the same hierarchical arrangement found in Prufrock, each proposing a unifying "still center" that absorbs and reconciles the fragmentary nature of experience. Rather than providing a solution, these systems left Eliot in the same position as Prufrock as they embraced the reality of fragmentary material existence while hoping it might become more than the sum of its parts. Both Bergson and Bradley systematically dismantled the beliefs of others while requiring, as Eliot himself noted, a suspension of disbelief in their own philosophies.

Raised in the shadow of Emerson and William Greenleaf Eliot, the Transcendentalists and the Unitarians, Eliot found Bergson's mixture of evolutionary science and mysticism particularly appealing. While in Paris from 1910-11, Eliot attended lectures by Bergson and later claimed "my only conversion, by the deliberate influence of any individual, was a temporary conversion to Bergsonism" ("A Sermon" 5). As a continuing education instructor, Eliot included Bergson in his survey of modern French literature and put *Introduction to Metaphysics* (1912) (recently translated by T.E. Hulme) on the course's book list.⁹² In the

⁹² The syllabi and book lists for these courses can be found in the first chapter of Ronald Schuchard's *Eliot's Dark Angel* 27-49.

early-twentieth century, Bergson's philosophy had all the appeal of a religion, including a vast number of devoted followers "converted" like Eliot. Significantly, however, Bergson borrowed his authority not from God, but from psychology and neuroscience, making his mysticism seem a natural outgrowth of the facts of consciousness and evolution.

Although immediately grounded in turn-of-the-century psychology, Bergson's model of consciousness builds on the evolutionary science of the nineteenth century, describing the mind as a series of layers arranged in a hierarchical structure. As in the case of Spencer and Jackson, however, Bergson notes that the brain combines structural discontinuity and functional continuity, arguing that "The same psychical life...must be supposed to be repeated an endless number of times on the different stories of memory, and the same act of the mind may be performed at varying heights" (*Matter and Memory* 75). Like William James, Bergson differentiates between fragmented experience and a unifying consciousness that is distinguished by its persistence through time, a persistence that allows past experience to modify present action. While Bergson describes consciousness in terms of a spectrum rather than a stream, the model is fundamentally the same: "A current of feeling which passed along the spectrum, assuming in turn the tint of each of its shades, would experience a series of gradual changes, each of which would announce the one to follow and would sum up those which preceded it" (*Introduction to Metaphysics* 26). Viewed from the aspect of experience, the moments of consciousness appear discontinuous; viewed from pure memory, seen through time (*durée*), these moments cohere into an unbroken stream or spectrum.

Bergson's attempt to bring together science and spirit, the facts of matter and the persistence of memory, depends on a problematic division between higher and lower forms of mental activity. Famously, Bergson divides the intellect, which works through the mental

and motor habits of the body, from intuition, which inserts itself in the “spaces” of the nervous system to create real change. The self-consciousness created by pure memory always stands above the nervous system, infusing spirit into dead matter. For Bergson, consciousness is split between the material body and the memory that views that body through time: “Intuition and intellect represent two opposites directions in the work of consciousness: intuition goes in the direction of life, intellect goes in the inverse direction, and thus finds itself naturally in accordance with the movement of matter” (*Matter and Memory* 291-2). Rather than viewing the spaces in the nervous system as the site of alteration and creativity, Bergson always describes the synapse as a place of passive transmission, “a *place of passage* of the movements received and thrown back, a hyphen, a connecting link between the things which act upon me and the things upon which I act” (*Matter and Memory* 151-2). Because the nervous system is composed of “conducting lines” rather than creative centers, the brain and body work only through repetition, making action more efficient and thought more stereotyped.

Bergson’s vitalistic philosophy requires an outside force to fill these empty spaces, abandoning matter for pure memory. A ghost in the machine, memory interrupts habits by inserting itself into the physical spaces of the nervous system; it “awaits the occurrence of a rift between the actual impression and its corresponding movement to slip in its image” (*Matter and Memory* 95). By operating synaptically, working in the gaps of the nervous system, the intuition changes the circuitry and creates the possibility of new, creative action: “ideas—pure recollections summoned from the depths of memory—develop into memory-images more and more capable of inserting themselves into the motor diagram” (*Matter and Memory* 125). Despite its basis in the science of psychology, Bergson connects the physical

properties of the nervous system to his mystical consciousness only through sleight of hand. The material body represents the way down, discontinuity and repetition, while pure memory—through a reimagining of instinct similar to Gourmont—provides the way up, unity and creativity.

With its contrast of unifying memory and fragmenting matter, Bergson's work follows the same hierarchical structure found in *Prufrock*. As in Eliot's poem, however, Bergson's system has trouble forming connections, relying on an optimistic mysticism to bridge the gap between the elevating memory and the dissociating body. In a seminar paper delivered for Josiah Royce's seminar at Harvard, Eliot critiqued Bergson's philosophy, arguing that it "divides itself into a Cartesian dichotomy—the way up, consciousness, and the way down, matter" (qtd. in Lockerd 54). Promising ascension through the marriage of body and mind, Bergson's system traps its followers in an intermediate state between matter and spirit. Later, in a *Vanity Fair* article, Eliot would note Bergson's importance to modern thought but suggest that Bergson's work joins together science, psychology and philosophy only superficially, using this interdisciplinary approach to "conceal the incoherence of a multiplicity of points of view, not all philosophic" ("A Prediction" 29). Like the sirens that appear at the end of "*Prufrock*," Bergson's "exciting promise of immortality" offered only an escape from the real problems of philosophy, providing the younger Eliot "a somewhat meretricious captivation" (29).

Like Bergson, F.H. Bradley claimed to remove the divisions of traditional metaphysics by establishing a unity above the mind and body. In contrast to Bergson's philosophy, which appealed to the vestiges of Eliot's Unitarian optimism, Bradley's work displays a skepticism that must have attracted an increasingly disaffected philosophy student.

Whereas Eliot praised Bergson for his “use of science against itself,” Bradley’s use of reason against itself must have had similar appeal as it methodically called into question the underpinnings of Western philosophy.⁹³ In *Appearance and Reality* (1893), Bradley argued that traditional distinctions between the body and mind are theoretical rather than actual, confusing subjective appearance and objective reality. Although feeling is unified in the immediate experience of an object, our desire for self-consciousness causes us to make a false separation between the self as perceiver and the object being perceived. Instead, Bradley argues that the self exists simultaneously as a constant background (the self seen through time) and an isolated moment (the particular experience that is contrasted with the background); the self contains unity and diversity, a unified self-consciousness and a series of discontinuous moments of experience.

Immediate experience represents the point of contact between the persistent self and the changing world, but it also represents the weak point of Bradley’s philosophy. In his dissertation and critical essays, Eliot often translated immediate experience as “feeling,” a switch that exposes the hidden sensuality (and materiality) of Bradley’s term. Bradley himself argues that feeling is unified if it is “low down enough” in nervous transmission, where one can find “plurality with unity and without contradiction” (90). It is through the nerves that the individual can achieve connection to the Absolute, Bradley’s term for the spiritual/intellectual force that flows through all objects and unifies an apparently diverse universe. As such, the Absolute is indistinguishable from immediate experience, representing the point where the sensory body, perceiving mind, and objective world are unified. In immediate experience, appearances—sensory, subjective and, thus, faulty

⁹³ In a 1924 *Vanity Fair* article titled “A Predication,” Eliot writes that Bradley “presents the curious spectacle of a very powerful mind...at war with itself: destroying not so much other men’s systems...as his own” (29).

interpretations of reality—co-exist to create a picture of the world as it truly exists. Although this experience can only be achieved through the body, Bradley claims that the body itself is an appearance created to give the illusion of a discrete self: “I arrive at other souls by means of other bodies, and the argument starts from the ground of my own body. My own body is one of the groups which are formed in my experience” (225). Bradley makes the body the link between souls but then declares that link to be an illusion.

Bradley thus finds himself in an untenable position: either assert self-consciousness detached from the body and the external world or establish contact with the Absolute at the cost of the self. Because both “you and I” are only appearances, they can never co-exist without exposing the illusory character of the other. Without faith in the Absolute, Bradley’s philosophy ultimately seems to lead to a position of extreme solipsism, denying not only knowledge of others, but also a knowledge of the self. It is this assertion that captured Eliot’s attention, as revealed in the notes for *The Waste Land*: “My external sensations are no less private to myself than are my thoughts or my feelings. In either case my experience falls within my own circle, a circle closed on the outside; and, with all its elements alike, every sphere is opaque to the others which surround it...The whole world to each is particular and private to that soul” (306). Each individual has the capability of escaping the prison of the self but is prevented by the practical impossibility of relinquishing self-consciousness: “We think of a key, each in his prison / Thinking of a key, each confirms a prison” (*CPP* 49).

Bradley’s philosophy asserts that all divisions and contradictions are unified in the Absolute, but concedes that this unification is everywhere ideal. Accepting the Absolute requires accepting the self as an appearance, a fiction created by the human desire for self-

consciousness. The conflict between the ideal and the practical stands in the background of Eliot's dissertation on Bradley, which since its publication in 1964 has been the starting point for most explanations of Eliot's aesthetics. Initially, the dissertation was viewed as a Rosetta Stone, a way to link Eliot's philosophical interests to his aesthetics by simply replacing one set of terms with another.⁹⁴ In recent years, critics have highlighted the disparity between Bradley's views and Eliot's own.⁹⁵ As one reads the dissertation, it becomes apparent that Eliot is using Bradley's skepticism against itself, exposing the Absolute as an appearance constructed by desire rather than reason. Eliot ends the first chapter with a direct refutation of Bradley's views:

By the failure of any experience to be merely immediate, by its lack of harmony and cohesion, we find ourselves as conscious souls in a world of objects. We are led to the conception of an all-inclusive experience outside of which nothing will fall. If anyone object that mere experience at the beginning and complete experience at the end are hypothetical limits, I can say not a word in refutation for this would be just the reverse side of what opinions I hold. And if anyone assert that immediate experience, at either the beginning or end of our journey, is annihilation and utter night, I cordially agree (31).

Interpreting Bradley's work, Eliot is forced into the same position as Prufrock as he chooses to either divide the conscious soul from the objects around it or accept the "annihilation" of the self as the individual consciousness becomes dissolved in the Absolute. Although purporting a rational explanation of the Absolute, Bradley's system turns out to be just as optimistic and mystical as Bergson's. Two years after writing his dissertation, Eliot declared that "Bradley's universe, actual only in finite centres, is only by an act of faith unified...The Absolute responds only to an imaginary demand of thought, and satisfies only an imaginary

⁹⁴ In the introductory chapter of *From Philosophy to Poetry*, Childs' provides an excellent overview of Eliot criticism in the last fifty years, emphasizing the diverse interpretations of Eliot's early studies in philosophy.

⁹⁵ Jane Mallinson articulates this view of Eliot's dissertation at length in *T.S. Eliot's Interpretation of F.H. Bradley: Seven Essays*, a work in which she claims that Eliot's "expressed disagreements with Bradley offer invaluable insight into Eliot's view of language and more particularly the poet's relationship with language" (1).

demand of feeling” (202). Rather than the key to the Absolute, Bradley’s philosophy provide a tempting fiction that collapses in the face of practical experience, a dream that satisfies only in the absence of human voices.

Both Bergson and Bradley were caught in an intermediate state between desire and skepticism, dismantling the ideals of science and philosophy while using these same fields to support their own unifying systems. Caught between Bergson and Bradley, Eliot was thus in a similar position to his character as he struggled to reconcile a desire for self-consciousness with an equally pressing need for human contact and communication. As a poet, this dilemma always had an added dimension for Eliot, creating the possibility not only of emotional isolation but also artistic failure. For Eliot, unlike the pathetic Prufrock, the divide between consciousness and contact was also a divide between the poet and reader, suggesting an impassible gulf across which the poet must communicate. A philosophical problem, how to transform the disconnected moments of sensory experience into a coherent self, becomes a formal problem, how to transform a series of fragments into a unified whole capable of conveying meaning.

As indicated by the ambiguous “I” at the poem’s opening, the distinction between poet and persona is unclear, allowing both to be read as the patients on the table. Both Eliot and his creation suffer from the same pathological fragmentation of experience and the same philosophical struggle between solipsism and skepticism. Viewed this way, “Prufrock,” like *The Waste Land*, is just a “personal...grouse against life” that has been transferred to a fictional persona and later expanded by readers into a diagnosis of modern society (*WLF* 1).⁹⁶

⁹⁶ On a number of occasions, Eliot denied that *The Waste Land* was intended to express the “disillusionment of a generation,” claiming, “To me it was only the relief of a personal and wholly insignificant grouse against life; it is just a piece of rhythmical grumbling” (*WLF* 1). See also page 324 of “Thoughts after Lambeth” in *Selected Essays*.

Yet such a reading limits the scope of Eliot's artistic goals, making "Prufrock" and other fragmented poems like "Gerontion" and *The Waste Land* only expositions of pathology, diagnoses without cures. Instead, Eliot's poetry relies on an inherent distinction between structure and content, transforming potentially divisive space into a source of connection. Although "Prufrock" reflects the fragmentation of consciousness, it also unifies those fragments by placing them in the context of the poem. By understanding consciousness and poetry as a series of fragmented objects achieving unity through space, as "nerves in a pattern," Eliot's poetry allows fragmentation to be both the symptom and the cure. The fragmentation in "Prufrock" not only reflects the nature of modern experience, but also enables connection between the elements of consciousness and elements of the poem itself.

Solipsism proved to be both a philosophical and an aesthetic problem for Eliot, and his philosophical solution to solipsism points toward the characteristic formal structure of Eliot's poetry. In the chapter in his dissertation titled "Solipsism," Eliot counters the idealistic optimism inherent in Bradley's concept of the Absolute with Bradley's more pragmatic theory of "degrees of truth." In a system that includes the Absolute, solipsism cannot be a real problem because all divisions are fictional: the finite centers of consciousness are all bound together in immediate experience, connected like the petals to the stem. For Eliot, such overarching connectivity was an ideal construction that could not be sustained in practical experience. Everyday experience, in contrast to immediate experience, always begins by severing subject and object, separating individual consciousness from other finite centers. No longer connected to the stem of the Absolute, the petals drift on the breeze.

An intellectual construction, the Absolute cannot assuage Eliot's fears of solipsism nor satisfy his desire for enduring truth. However, by re-establishing connection, arranging the components of consciousness into meaningful patterns, practical experience can approach an ideal "still point." As Bradley himself argues, we can never know the truth of experience, but we can form an increasingly accurate picture of reality by assembling subjective experience through time and combining our personal experiences with the experience of others across space. As appearances are tested against reality, they become more true (and more real) as their pattern becomes closer to that of the Absolute, needing less and less rearrangement in order to be converted to reality. In the process, this pattern of truth becomes more self-sufficient as the space or "interval" between its existence and the Absolute becomes smaller, requiring "less alternation, less destruction of its own special nature in order to make this higher element completely real" (*Appearance and Reality* 338). Piece by piece, Bradley seems to argue, we must reassemble the unifying structure of the Absolute, returning each petal to its ideal position.

In order to create something structurally defined as a "poem," Eliot's work requires the same reassembly by the reader, piecing together the fragments of the poem to create an ideal pattern of meaning. Eliot presents both psychological and physical pieces of experience, but these fragments communicate meaning through connection and association, achieving their purpose through the action of the reader. As in Bradley's pragmatic theory of truth, the individual aspects of experience find their place in a larger system through the convergence of "finite centres" or "points of view." Eliot's poetry connects real objects to create ideal patterns, what he calls "real fictions" in his dissertation and what Marianne Moore would later call "imaginary gardens with real toads in them" ("Poetry," *Complete*

Poems 36). Like Moore's garden, the imaginary Prufrock has no real existence without the cooperative action of the poet and reader; in the words of Hugh Kenner, Prufrock is "a center of consciousness, rather yours than his: a focusing of the reader's attention" (41). Prufrock's self-consciousness, like any other real or fictional self, emerges through interaction with other selves. Eliot describes this interdependency in his dissertation, arguing that the self "depends...upon other selves; it is not given as a direct experience, but is an interpretation of experience by interaction with other selves" (146). Although the penetrating "eyes/I's" threaten the stability and certainty of Prufrock's self, dissolving his consciousness into transitory fragments of experience, they also provide a potential cure for his solipsism as they incorporate Prufrock into a larger pattern of meaning.

The fragmentation of Eliot's poem is both diagnosis and cure, as it not only mimetically renders the materiality of modern consciousness, but also supplies the pieces that Eliot assembles into a new unity and a new poetry. A patient on the table, Prufrock loses consciousness and becomes detached from a persistent version of the self, transformed into a set of symptoms. Eliot's diagnostic eye works to depersonalize Prufrock, bringing his pathological fragmentation to the surface as his consciousness sinks to the depths. The "clinician's gaze," as Michael Foucault describes it in *The Birth of the Clinic*, views the patient as a neutral substrate upon which the sickness acts: "if one wishes to know the illness from which he [the patient] is suffering, one must subtract the individual, with his particular qualities" (14). In the face of the clinician's eye (I?), the idiosyncratic physiology and psychology of the patient is removed to reveal the pattern of symptoms that comprise his illness. Like the eyes of the women, the clinician's eye fixes the individual into "a

formulated phrase”; the act of diagnosis dissolves the patient’s personal identity, grouping his symptoms into pre-established categories of illness.

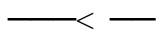
Foucault’s description of the “clinician’s gaze” provides insight into the characteristic fragmentation of Eliot and other modernist poets, but it makes a significant omission. While Foucault convincingly outlines the process of depersonalization in the patient, he fails to note that the clinician him or herself undergoes a similar process of depersonalization. To secure his diagnostic authority, the clinician undergoes extensive training to transform his consciousness into a collective medical consciousness. When the doctor observes the patient, adopting the clinician’s gaze, his vision represents the collective knowledge of the medical community. Both the patient and the clinician experience a dissolution of the self: the patient’s identity is removed to reveal the symptoms of disease while the clinician becomes merely an aspect of medical consciousness. In this diagnostic moment, the doctor and patient sacrifice the self to co-exist in the objective realm of fragmented symptoms. Because such a diagnostic moment begins Eliot’s poem, the “you” and “I” are emptied of meaning, no longer referring to individual points of consciousness but to a constellation of symptoms. Being emptied, their signification is opened, expanded indefinitely such that the symptoms may belong to the poet, Prufrock, and the reader him or herself.

The emptying of the “you” and “I” at the beginning of the poem makes these pronouns impersonal. As such, Prufrock’s “I” is depersonalized as he becomes both poet and reader. “Prufrock” not only prefigures Eliot’s theory of authorial impersonality (outlined in the 1919 essay “Tradition and the Individual Talent”), but also amplifies it into a theory of cultural amelioration, a way to bridge the connection between selves through poetry.

However, “Prufrock” also reveals Eliot’s theory to be extremely personal, allowing each reader to “escape from personality” and fill the role of physician and patient. As Eliot’s pronouns cease to refer to individuals, they blur the distinction between doctor and patient, roles that are merely opposite aspects of the same diagnostic experience. The direct address at the poem’s opening invites the reader to share Prufrock’s illness, but also makes a plea for a cure, a remedy to fragmentation only provided by the unifying activity of the reader. Each reader assimilates the broken pieces of Prufrock’s consciousness, but escapes this pathological personality in the act of reading the poem and connecting Eliot’s fragments. In his reading of Prufrock, Childs suggests that the poem revolves around an “essentially indefinite point between a form of consciousness defined by the presence of the self and a form of unconsciousness defined by the absence of the self” (382). Childs reads this “indefinite point” from the perspective of Bradleyian idealism, viewing it as a “still point” where finite centers are unified by immediate experience. As I have argued, Eliot’s skepticism regarding such connectivity makes this form of unification merely temporary, a fragile structure of truth dependent on the participation of the other selves. Instead of “revolving,” the poem oscillates rapidly between solipsistic detachment and consciousness-affirming connection, pathology and cure. Each of the poem’s spaces has the potential for division and connection, forcing the reader to confront the fragmented nature of experience while inviting the unifying activity of association. The reader, like the poet, dissects and crafts Prufrock’s consciousness, using the disconnected moments in the poem to “murder and create” (*CPP* 5).

As in James’ stream, the fragments of Prufrock’s consciousness are unified by the spaces between discontinuous moments of experience, the associational “flights” between the

“perchings” of sensation and perception. While the objects of the poem fragment, the poem’s coherence emerges in the interstices that transform a set of “nerves in patterns” into a self and a collection of lines into poetry. Like much of Eliot’s work, “Prufrock” functions through the use of synaptic space that implies connection and association even as it fragments. Although the lines of the poem interrogate and unravel meaning, the spaces, the “unwritten” portions of the poem, reveal connection and enable communication between reader and poet. In his dissertation, Eliot argued that the self, “depends upon a world that in turn depends upon it,” and in his poetry the coherence of Eliot’s message depends upon the reader’s creation of a poem. This creation, in turn, depends upon Eliot’s careful patterning of fragments, completing the cycle of dependency. Finally, Eliot’s poetry breaks down the divide between reader and poet to expose a latent interdependency; the “you” and I” that begin “Prufrock” dissolve in the final lines through Eliot’s shift of pronouns: “Human voices wake us, and we drown” (*CPP* 7). The fictional Prufrock becomes a “real fiction” capable of hearing “human voices,” the imaginary sea-chambers of Prufrock’s fantasy becomes a real sea capable of drowning, and the reader and poet become “we” as they communicate across the poem’s spaces.



Eliot’s criticism establishes hierarchies between tradition and the individual talent and divides between thought and sensibility, but eventually Eliot’s poetry locates itself in the space between these opposed concepts. Although the way up, the ideal unity provided by tradition and the higher mind, is always threatened by dissolution, Eliot builds workable “real fictions” from the fragments of practical experience. In a 1914 letter, Eliot wrote “it’s interesting to cut yourself to pieces for a while, and wait to see if the fragments will sprout”

(*Letters* 59). Indeed, Eliot's poetry is always sprouting from seemingly lifeless fragments, the buried corpses of dead traditions and the nervous "handfuls of dust" that compose the modern mind. While nostalgic for the optimistic unity provided by philosophy and religion and the formal unity provided by fixed poetic form, Eliot recognized that these forms of unity cannot withstand the "variety and complexity" of modern experience. Instead, Eliot works in the space between experience, the space between traditions, and the space between the lines of the poem to establish new unities that can withstand his inherent skepticism.

Although Eliot has often been charged with obscurity and elitism, accused of writing poetry that willfully distances itself from the reader, his poetry actively seeks to bridge both the gaps that separate the poet and the reader and those that divide modern culture. Eliot's use of fragmentation blurs the distinction between the act of writing and the act of reading, forcing the reader to make meaningful associations between lines and "compose" the poem from the building blocks that Eliot provides. Likewise, his poetics of impersonality might be viewed as a self-conscious descent from the ivory tower, a way to question his ability to create novel meaning and a direct undermining of his authorship and, thus, his authority.

As I have also shown, Eliot's understanding of tradition is complex, combining a fear of cultural devolution with a fear of cultural dissolution. In other words, Eliot was not only worried that language and culture would return to primitivism, losing their spiritual and intellectual aspirations, but also that this retreat into the past would divorce individuals from the cultural institutions—political, religious, and artistic—that once held society together. Eliot's conservatism, often viewed as an indication of his disdain for modern life and popular culture, grew out of the same concerns that informed his early philosophical work and poetry: isolation and solipsism, language and meaning, social connection and interpersonal

communication. While his work phrases the divide in terms of “higher” and “lower” culture, it seems more accurate to use the binary between “popular” culture and no culture, a culture that unifies individuals or an individualism that fragments culture.

Throughout his work, then, Eliot situated himself between higher ideals and the practical and physical nature of our experience. He understood, like Herbert Spencer and John Hughlings Jackson, that the physiological mechanisms of thought and consciousness are fragile, situated precariously over a swamp of primitive instinct. Eliot thus works to preserve the “falling towers” of consciousness by establishing poetic associations that mimic the physiological connections of the brain. At the same time, he recognized that “mind” was an abstract concept created from human desire and could never be separated from the physical brain. His poetry both describes the dissolution of psychological consciousness, the fragmented musings of Sweeney, Prufrock, and Gerontion, and outlines the dangers of physiological behaviorism and the reflexive mind of Pavlov’s dogs and Watson’s rats. Eliot dwells in the synaptic space, the meaningful “Shadow” between the ideas of the higher mind and the reflexes of the lower brain—between fragmentation and unity:

Between the conception
And the creation
Between the emotion
And the response
Falls the Shadow (“The Hollow Men” *CPP* 58).

Conclusion: “Post-Modern” Neuroscience

The poets included in this study represent divergent and often antagonistic strains of modernism. In a letter written late in his life, Stevens distanced himself from T.S. Eliot and claimed that “Eliot and I are dead opposites and I have been doing everything that he would not be likely to do” (*Letters* 677). Despite writing letters of praise to William Carlos Williams and telling a publisher that he “loved his [Williams’] stuff,” Stevens later wondered at the “universal acceptance of Bill Williams...who rejects the idea that meaning has the slightest value and describes a poem as a structure of little blocks” (*Letters* 286, 803). In the *Harmonium* poem “Nuances of a Theme by Williams,” Stevens mocks Williams’ Romantic tendencies, viewing Williams’ “ancient star” through the eyes of the self-abnegating snow man:

Lend no part to any humanity that suffuses
you in its own light.
Be not chimera of morning,
Half-man, half-star (*CP* 18).

One can only marvel at the level of denial required to write such a poem, for surely Stevens is the true heir to Wordsworth and Coleridge, Emerson and Whitman. Although he describes Williams as “a somewhat exhausted phase of the romantic,” Stevens’ poetry can be viewed as a prolonged attempt to update Romanticism by adding skepticism and removing personal emotion—a project that, in this light, is almost indistinguishable from Eliot’s.

For his part, Williams appreciated Wallace Stevens’ contribution to building an “American” poetry, naming him as part of “an elder group who are, in fact, in themselves a critique and a *vade mecum* of an art that is slowly acquiring reality here in our God-forsaken territory” (*Selected Letters* 229). However, Williams resented Stevens’ description of his

work as “antipoetic” (in the Preface to Williams’ 1934 *Collected Poems*) and spent the rest of his life fighting against the label: “Frankly I’m sick of the constant aping of Stevens’ dictum that I resort to the antipoetic as a heightening device. That’s plain crap—and everyone copies it” (*Selected Letters* 265). Williams was more public about his disagreements with Eliot, and never missed an opportunity to blame *The Waste Land*, “the great catastrophe to our letters,” for the degradation of modern poetry (*Autobiography* 147).

By all accounts, Gertrude Stein held much the same opinion of Eliot, whose intellectual games stood in direct opposition to her own language games. While Eliot purified and resuscitated the English language, Stein gleefully demolished it. A passage in *The Autobiography of Alice B. Toklas* describes a meeting between Stein and Eliot in which they “had a solemn conversation, mostly about split infinitives and other grammatical solecisms and why Gertrude Stein used them” (247).⁹⁷ In a letter to Alice written after the meeting, Stein willfully included “a split infinitive because of the malaise it produces in T.S. Eliot” (*Dear Sammy* 185). In *The Geographical History of America* (1936), Stein rejects Eliot’s notion of tradition—with its emphasis on canonization and preservation—and defines her own masterpieces in opposition to the critical establishment. She even directs an oblique thrust at Eliot’s allusive tendencies: “Any one that is no one is deceived because although any one can quote it no one can make use of it” (207). Thornton Wilder, a close friend of Stein’s, makes an explicit contrast between Stein’s work and the “timid asthmatic regurgitating critical world” exemplified by “poor furrowed-brow T.S. Eliot” (*The Letters of Gertrude Stein and Thornton Wilder* 61). Although Stein repeatedly attempted to create an

⁹⁷ Marjorie Perloff notes that, like much in the *Autobiography*, this meeting is a mixture of fact and fiction. At the meeting, Eliot had requested some original work from Stein for the *Criterion*, and Stein responded with a poem inspired by their conversation called “The fifteenth of November.” According to Stein, Eliot “accepted it but naturally he did not print it” (*Autobiography* 247). Perloff notes that this claim is obviously “untrue” because the poem appeared in the 1926 issue of the *Criterion* (45).

American literature to counter Anglophiles like Eliot, she drew her authority on Americanism from her self-conscious estrangement from her native country. Her own attempts to define America (in *The Making of Americans*, *Lectures in America*, and elsewhere) share little, if anything, with similar attempts by lifelong residents of America like Stevens, Williams, Frost, and Moore. Because *Harmonium* was critically viewed as a relic of *fin-de-siècle* preciousness, and Williams was largely ignored until the late-blooming *Paterson* (1946-1958), it is not surprising that both Stevens and Williams were ignored by Stein. While Stein's work relies on one- and two-syllable words, her language is certainly far removed from Stevens and Williams, from "plain American which dogs and cats can read" ("England," *Complete Poems* 46).

Although Eliot was the universal whipping-boy of Stevens, Williams, Stein, and Stein, we know little about how he regarded his fellow modernists. Only two volumes of Eliot's letters have been published (leaving forty years of missing correspondence), and all of Eliot's published letters have already been screened by Valerie Eliot, who is notorious (if not infamous) for protecting her husband's privacy. In many ways, Mrs. Eliot's efforts are an extension of her husband's lifelong effort to craft a literary personality, a persona befitting a twentieth-century man of letters. As the author of *The Waste Land* and in his various editorial positions, Eliot was in a position of power, and had the luxury of worrying about his place in tradition. Eliot was the exemplar of Ezra Pound's version of modernism, which unquestionably dominated literature for the first half of the century; thus, it would not be surprising to find that Eliot was more interested in shaping his own influence than responding to dissenting voices.

Despite Eliot's apparent autonomy, and despite the attempts of modernists like Stein to distance themselves from Eliot, the authors included in this study are all united by their attempts to use language to repair meaning, their use of poetry to form new connections and replace the outdated systems of the nineteenth century. Marjorie Perloff argues that Stein's and Eliot's poetics are "two sides of the same coin," suggesting that the two authors represent different aspects of "the modernist aesthetic" (45). I would argue that Perloff's coin needs several more sides, for certainly the type of linguistic games and fragmented unity seen in *The Waste Land* and *Tender Buttons* is also seen in Pound's *Cantos* and Joyce's *Ulysses*. More relevant to this study, this aesthetic is also seen in Williams' *Paterson* and Stevens' *Notes Toward a Supreme Fiction* (although works such as "The Comedian as the Letter C" and "Like Decorations in a Nigger Cemetery" are perhaps closer to Eliot and Stein's model). In retrospect, it is remarkable that authors with such dramatically different systems of aesthetics could have produced works that, superficially, are so similar. Regardless of whether the organizing structure is a river like Williams' *Paterson*, or a narrator like Eliot's Tiresias or Stevens' Crispin (or perhaps evens Stein's Dehnings and Herslands), the major works of these poets ultimately interrogate their ostensible sources of meaning—religion and myth, nation and identity, science and nature, art and language.

In different ways, these poets were all attempting to replace something that they had lost, a security felt by ancestors like William Greenleaf Eliot and John Zeller but denied to the "lost generation."⁹⁸ While J. Hillis Miller might call this something lost "God," it is clear

⁹⁸ While Stein used the term "lost generation" to refer to Hemingway and a group of other wandering, "lost" expatriates, it is an equally appropriate appellation for Stein and other writers who were coping with the loss of nineteenth-century faith. Eliot's grandfather, the Reverend William Greenleaf Eliot (1811-1887) was a religious and civic leader who founded Washington University in St. Louis (Gordon 14-15). According to Eliot, his grandfather was "The Great Man, so there was no hope of reaching his eminence" (qtd. in Gordon 5). John Zeller was the name of Stevens' maternal grandfather and great grandfather; the "John Zeller" of Stevens' poem "The Bed of Old John Zeller" is likely the great grandfather, whom Stevens describes as a man of intense

that God, in the sense that Donne and Milton understood Him (the personification and male pronoun are both significant), had been dead for some time before Nietzsche's infamous pronouncement in 1882. Instead, these poets were responding to a collection of smaller "deaths" caused by Darwin and other scientists whose discoveries reshaped our understanding of the body and mind. Darwin not only replaced the divine order with a natural order that—driven by chance and circumstance—was no order at all, but also collapsed the distance between the human and animal mind and inspired the "reflexive" thinking of philosophers like James, Dewey, and Whitehead and scientists like Charles Sherrington and J.B. Watson. Once the mind was understood as a collection of physiological patterns unique to each individual, it makes experience itself inherently subjective, calling into question our ability to understand reality, our ability to communicate through language, and indeed the very notion of essential identity. As Gillian Beer writes, "Evolutionary ideas shifted in very diverse ways the patterns through which we apprehend experience and hence through which we condense experience in the telling of it" (8). In other words, nineteenth-century science fractured patterns of knowledge and shaped subsequent attempts to "condense" or unify experience.

As I have shown, this fracturing and unification of experience was related to a new understanding of mind as neuroscientists shifted from the reticular theory that dominated the nineteenth century to the neuronal theory that dominated the twentieth. In this way, Santiago Ramón y Cajal's famous trip to the 1889 conference of the German Anatomical Society is just as integral to our understanding of modernism as Freud's 1899 publication of *The Interpretation of Dreams* and Einstein's golden year in 1905 (which marked the birth of the

religious conviction (*Letters* 399, 416). During the 1940s, Stevens search for his "lost" ancestors led to an interest in genealogy that bordered on obsession.

theory of relativity and quantum mechanics). When Cajal stood in a neglected corner of the conference room and pleaded for passing scientists to look at his slides, he was really asking them to reject everything they understood about nerve function, to shift both the patterns of their thinking and the patterns of the nervous system itself. Cajal asked them to view these slides not as fragmentation, the faulty results of an ineffective stain, but as unity, a system of units communicating across space. Cajal's challenge portended the challenge faced by readers of works such as *The Waste Land*, works which provide a litmus test for literary critics past and present. Are we to view such works as a representation of cultural fragmentation, a poetry of rubble that shows us "fear in a handful of dust," or as an attempt to use poetry to salvage the past, forming connections across disparate literary and cultural traditions?

Cajal and Camillo Golgi's awkward appearance at the 1906 Nobel Prize presentation ceremony indicates that "modern" neuroscience was still, Janus-like, looking backward to a nineteenth-century ideal of unity and forward to a twentieth-century recognition of fragmentation. To some extent, this divided consciousness also characterized modernist poetry, which was defined by a nostalgia for lost structures of meaning and an aspiration towards new meaning achieved through complex systems of linguistic signification and literary allusion. For each of the poets in this study, however, this nostalgia took a different form. Despite his claim that Williams was "a somewhat exhausted phase of the romantic," it was Stevens who displayed a nostalgia for the Romantic imagination, and his work attempts to build a poetic system under which the power of metaphor might be rehabilitated and renewed. Stevens' *Complete Poems*, which he initially called "*The Whole of Harmonium*," assembles a Supreme Fiction built through intricate and near-infinite connections between

“dead” symbols and metaphors: the sun and moon, light and darkness, summer and winter. In contrast, both Williams and Stein were focused on resuscitating realism, a movement founded on the belief that language could accurately describe the essential nature of people and the “things” of the real world. For Williams, the fundamental problem of modernism was the detachment of ideas from the things they described, and he used the structure of poetry to refresh and modernize those ideas by establishing new connections between things: words, objects, and mental states. While Williams’ technique relies on the supposition that language can effectively communicate meaning, Stein’s reinvention of realism interrogated the structures underlying language, attempting to expose the “bottom nature” of words, objects, and mental states themselves. Finally T.S. Eliot sought to recover the cultural unity of the nineteenth century, a nostalgia clearly defined by his triumvirate of “royalism,” “Anglo-Catholicism,” and “classicism.” By assembling fragments from different traditions, Eliot’s poetry attempts to unify modern experience and protect against the dissolution of language and culture.

As these poets progressed, both formally and intellectual, the tension between their desire for unity and their recognition of fragmentation became increasingly problematic. Indeed, it is natural that each new attack on traditional culture, language, and form would leave modernist poetry further divided from the unified systems of the nineteenth-century, the systems they undermined with a mixture of admiration and animosity characteristic of a child to its parent. Even Eliot, the most conservative of the group, recognized that language could not fill the meaningless void left by the persistent questioning of his contemporaries. While using poetry to resurrect the cultural institutions built by his forefathers (almost literally, in Eliot’s case), he understood that “words strain / Crack and sometimes break,

under the burden” Wandering in the desert, the modernists were similarly forced to choose between sacrificing the progress they had made, returning to the comforting values of the nineteenth-century, or pushing forward towards increasing meaninglessness and skepticism.

I would argue that, in the end, the poets included in the study chose both options. As their constructions grew more ambitious, becoming ever-larger patchworks of cultures, ideas, and forms, these works undermined their own attempts at unity. Certainly Williams’ *Paterson*, with its inclusion of prose letters that question Williams’ authorial voice and *Paterson’s* identity as a poem, its mixture of newspaper articles and fiction that blur the line between objectivity and subjectivity, and its panoramic view of space and time that reverses and redirects the “flow” of both the Passaic river and history, interrogates meaning much more than it creates unity. In many ways, Stevens’ *Collected Poems* likewise undermines his epistemological project, revealing his thinking to be iterative and circular rather than progressive. A massive dissertation on the relationship between the mind and the reality it both perceives and creates, the *Collected Poems* finally makes no clear statement and even makes contradictory statements about the relationship between the imagination and reality. For these ambiguities we, as critics, are eternally grateful, but for the heirs apparent to modernism these mixtures of destruction and resolution could only lead to even larger attempts at synthesis and even more anxiety regarding language and meaning.

One of the most tangible expressions of this anxiety is Allen Ginsberg’s *Howl* (1956), a poem in which language is reduced to an emotional but meaningless scream against progress. Ginsberg, whose letters were included in Williams’ *Paterson* and who literally showed up on Williams’ doorstep,⁹⁹ is both the natural heir to modernism and the prime

⁹⁹ Ginsberg wrote an unsolicited letter to Williams in 1950, announcing his presence in *Paterson*: "In spite of the grey secrecy of time and my own self-shuttering doubts in these youthful rainy days, I would like to make

example of why there is no clearly defined “post-modernist” poetry. Told by modernists such as Stein, Eliot, and Williams that language could no longer carry meaning, Ginsberg’s work takes the next step by attacking associative space itself and, thus, attacking the ability of a poet to make any meaningful structure from the ruins of nineteenth-century ideas.

Ginsberg was part of a generation

who dreamt and made incarnate gaps in Time & Space through images
juxtaposed, and trapped the archangel of the soul between 2 visual images
and joined the elemental verbs and set the noun and dash of consciousness
together jumping with sensation of Pater Omnipotens Aeterna Deus
to recreate the syntax and measure of poor human prose and stand before
you speechless and intelligent and shaking with shame, rejected yet
confessing out the soul to conform to the rhythm of thought in his naked
and endless head (*Howl* I:20)

I have been arguing that the modernists used connective or synaptic space to repair the lost poetic, intellectual, and spiritual structures of the nineteenth century. In Ginsberg’s poem, synaptic space has itself become spiritual, representing the “incarnate gap,” the “archangel of the soul between 2 visual images” and the “dash of consciousness” that will rescue the post-modern version of fragmentation. As he notes in an interview, “I had the idea, perhaps over-refined, that by the unexplainable, unexplained nonperspective line, that is, juxtaposition of one *word* against another, . . . there’d be a *gap* between the two words which the mind would fill in with the sensation of existence” (295).¹ Yet, Ginsberg’s spiritualization of space reveals that this gap, “the sensation of existence” is precisely what his generation is missing. Space has become spiritualized because it has become elusive, just as the connective spaces between words have become elusive, straining, cracking, and breaking like Eliot’s words in

my presence in Paterson known to you, and I hope you will welcome this from me, an unknown young poet, to you, an unknown old poet, who live in the same rusty county of the world" (qtd. in Mariani 604). This letter was later included in Williams’ *Paterson*, and it began a correspondence and close friendship between the two poets.

“Burnt Norton.” Thus, the project of post-modernism is “to recreate the syntax and measure of poor human prose” without faith in either words or space, leaving Ginsberg and other post-modernists “speechless and intelligent and shaking with shame.”

Ginsberg’s statements reveal that, by the second half of the twentieth century, the spatial and semantic connections characteristic of modernism had become just as problematic as the nineteenth-century structures they were designed to replace. Modernist skepticism had rejected the intellectual and cultural unities that held together nineteenth-century thought, declaring this cohesiveness an optimistic fiction. Similarly, post-modern skepticism rejected the power of space to create unity, noting that these spaces multiplied meaning to create unbridgeable, even spiritual, gaps that could not be filled. In post-modern poetry, bridging synaptic space became a leap of faith. Likewise, in post-modern theory, the promise of Structuralism dissolved into Deconstruction as Northrop Frye’s systematic *Anatomy* became Jacques Derrida’s *différance*. Yet Derrida’s “web of language,” which places every semantic connection within a vast, inscrutable network of meaning, is not so different from the vast reticular network that the neuronal theory supplanted. Indeed, Cajal’s description of a reticulated system “in which everything communicates with everything else” is an apt definition of post-modern descriptions of language and meaning. Whereas the reticular system declared “the absolute unsearchability of the organ of the soul,” the post-modernists declared the absolute unsearchability for central or essential meaning. As Derrida notes, the semantic connections upon which modernist poetry is built are only a small part of a larger network of meaning that cannot be completely mapped: “the “graphic” signifier refers to the phoneme through a web of many dimensions which binds it, like all signifiers, to other written and oral signifiers, with a “total” system open, let us say, to all possible investments

of sense” (*Of Grammatology* 45). Both modernist works such as *The Waste Land* and modern neuroscience represent “closed” systems, relying on the predictability and intelligibility of functional units—whether they be words or neurons. In contrast, the “open” systems of post-modern poetry and theory are composed of functional units that are neither semantically predictable nor legible, invested with “all possible investments of sense” and thus paradoxically both full and empty. Post-modernism extends the neuronal model, using synaptic space to open the system to its full semantic potential, but in doing so reflects a return to reticularism, a return to an open network with connections too complex to map.

Interestingly, this post-modern extension of synaptic space in poetry is paralleled by a similar trend in “post-modern” neuroscience. As neuroscientist G.W. Guillery notes, the neuron doctrine is currently “losing the central position it once held” as researchers begin to take a most holistic view of nerve function (412). Although the neuron doctrine provided a powerful tool for understanding the nervous system, many of its central tenets are being questioned by recent evidence collected from electron microscopy. The presence of fused neurons (which lack synapses) and serial synapses (in which signals pass from one synaptic terminal to another) refute Cajal’s assertions that nerve cells have a uniform shape and that information moves in a single direction through the neuron (the law of dynamic polarization). However, perhaps the most significant challenge to neuron theory is the existence of extra-neuronal networks that modulate the transmission of information in the nervous system. It is now known that non-synaptic spaces, gap junctions, can connect adjacent cells and synchronize their activity. In contrast to normal synaptic transmission, which relies on chemical transmitters and has the power to produce inhibition and long-term changes in the system, gap junctions carry electrical signals that move quickly and can rapidly spread

through the nerves (Kandel, Schwartz, and Jessell 180). These gap junctions (and not “nervous fatigue,” as Hughlings Jackson supposed) are primarily responsible for epileptic seizures.

More interestingly, there has been renewed interest in the perineuronal net or extracellular matrix, a network of proteins that exist outside the cell and provide transport and structural support within the nervous system. The perineuronal net was actually discovered over 100 years ago by Camillo Golgi and was considered important evidence for the reticular theory of the nervous system. For this reason, Cajal and other neuronists disputed the existence of the extracellular network, using their growing influence—and the growing acceptance of the neuron theory—to discourage further research on the topic (Celio et al. 510). When the electron microscope renewed interest in the extracellular matrix, researchers discovered that “the functions of the perineuronal net include the stabilization of synapses and the maintenance of cellular relationships in the adult brain” (Spreafico et al. 182). Within the last decade, the extracellular matrix has been found to play in an important role in synaptic plasticity, “hardwiring” synaptic connections and allowing the system to learn and adapt to new situations.¹⁰⁰ These findings suggest that the nervous system is more reticular than it initially appeared, indicating that information is transmitted through the nervous systems through several pathways and modulated at every step along the way.

If the goal of both early twentieth-century neuroscience and early twentieth-century poetry was to replace the order and meaning provided by nineteenth-century systems, then this return to “reticularity” represents the final failure of synaptic space and its greatest success. Seeking to prove that meaning could be generated from fragments—neurons and

¹⁰⁰ For more information on the function of the perineuronal net and its role in plasticity, see Dityatev et al. “Extracellular matrix molecules and synaptic plasticity.” *Nature Reviews: Neuroscience*. 4.6 (June 2003): 456-68.

words—these two fields both succeeded in showing that space could create intricate structures with overwhelming complexity. In doing so, however, both neuroscience and poetry have come full circle, investing space itself with an infinite, almost spiritual, potential to create meaning. While this return is characteristic of post-modernism, it was already predicted before Ginsberg’s spiritual “gaps”, John Cage’s 4’33”, and Robert Rauschenberg’s “White Painting.” I began this study of synaptic space with a discussion of Eliot’s “fragmented” masterpiece, *The Waste Land*, and it is altogether fitting that I end with the lines that effectively ended Eliot’s career:

We shall not cease from exploration
And the end of all our exploring
Will be to arrive where we started
And know the place for the first time (“Little Gidding” *CPP 145*).

The explorations of both Eliot and Cajal ended where they began, finding an awe-inspiring and humbling network of possibility in the synaptic spaces between neurons and in the hidden spaces between words, the meanings “heard, half-heard, in the stillness / between two waves of the sea” (*CPP 145*).

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