

Recursive Readings: Chaos, Curriculum, and Walt Whitman in “Specimen Days”

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In his 2005 postmodern novel “Specimen Days,” Michael Cunningham reads and re-envisions Walt Whitman’s “Leaves of Grass” through three different stories in different genres, time periods, and landscapes. Each story, however, involves a set of repeating details, including character names and attributes, locations, a curriculum (of one kind or another) of “Leaves of Grass,” and the pedagogical figure of Walt Whitman.

This article focuses on the process of reading and interpretation at work in Cunningham’s novel, modeled after Whitman’s own recursive processes in writing and editing “Leaves of Grass.” Poems, Whitman writes, “grow of circumstances, and are evolutionary” (1889/1973, p. 565). Whitman’s poems resist linearity and closure, employing contradiction as well as repetition: “Do I contradict myself? / Very well then I contradict myself, / (I am large, I contain multitudes)” (1891/1973, lines 1324-1326). In “Specimen Days,” Cunningham also presents three visions of a non-linear Whitman curriculum, often yielding strange and unpredictable results because of the poems’ resistance to fixed meanings. Cunningham’s recursive readings of Whitman through “Specimen Days” suggest possibilities for nonlinear interpretive practices and for viewing reading as a recursive process, a repeated search for meaning that in fact generates meaning in its iterations rather than finding it.

Introduction

In *Specimen Days* (2005), Michael Cunningham offers a recursive reading of Walt Whitman's *Leaves of Grass*¹, responding to and magnifying an initial sense of recursiveness in Whitman's work. The result is a novel in three separate iterations that engages the work of Walt Whitman and several concepts of chaos theory in powerful ways. In each section of *Specimen Days*, the recurring main character Luke is educated through chaos and through Whitman, making this novel a productive site for an examination of the intersections of literature, chaos theory, and curriculum. In this study, chaos theory informs my reading of curriculum in the novel, and I find that the novel itself could be characterized as an example of chaotic reading practices, with significant curricular implications. In the words of N. Katherine Hayles (1991), chaos here "serves as a crossroads, a juncture" (p. 2), connecting multiple interpretations of literature and curriculum within and surrounding the works of Cunningham and Whitman. In this paper, I would like to think about possibilities for seeing reading and interpretation as nonlinear, recursive practices through a discussion of Whitman's *Leaves of Grass* and Michael Cunningham's postmodern novel *Specimen Days*, which I suggest is a recursive reading of Whitman.

Before turning to Cunningham, though, let us consider literature and reading a bit more generally in terms of repetition and recursion, the latter of which is of much greater interest to complexity thinking. While it is often necessary and possible to distinguish between repetition and recursion in say, mathematics—where repetition may be static or entirely random while recursion involves a linked chain of iterations tending towards stasis, infinity, or chaos—it is harder to make such distinctions when working with repetition in literature. In short, the text always remembers. The history of repetition is always embedded in a text, so that occurrences function as a linked chain of iterations. In contemporary critic Krystyna Mazur's (2005) words, literary repetition "counters the logic of linear progression, undoes narrative links, and by being prone to reversals, violates temporal linearity by making ends function as beginnings, by having copies produce their originals" (p. xiii). Literary repetition, then, is not simply mechanical repetition, but can create relationship, unpredictability, and difference.

In fact, Mazur argues, it is not sameness but difference that is key to literary repetition. When repetition is used heavily, "as we continue repeating, we begin to discover the strangeness of our own words. Repetition makes them sound foreign or like the words of a stranger. We begin to hear in our own words echoes of some other presence, something not our own, something not of our making" (Mazur 2005, p. xxi). Like the childhood game in which a word is repeated until it doesn't sound like itself anymore, repeated lines or themes become strange. In literature and life, Sigmund Freud (1919/1958) recognizes the uncanny (*Unheimlich*) as emerging from unwelcome repetition; he uses the example of a number that one encounters over and over again

¹ *Leaves of Grass* was first published in 1855 and changed significantly from edition to edition through 1891-1892 (see the next section for publication history). For that reason, I'll cite pieces from *Leaves of Grass* individually based on their original publication dates.

causing increasing anxiety. Literary works that evoke the uncanny, too, often draw on repetition. Mazur identifies textual repetition—repetition as difference—as a special case; she contrasts it to mechanical repetition and habit, in which each repetition is discrete and unconnected. Of course, just as not every function will yield chaotic results when iterated, not every instance of literary repetition creates the same sense of strangeness or the uncanny, or the same sense of relationship and connection. What is important here is the possibility of such strangeness, relationship, and unpredictability, which makes literary repetition function like mathematical recursion. This possibility is enacted in both Whitman's *Leaves of Grass* and Cunningham's *Specimen Days*.

As William Paulson (1991) argues, the act of reading literature is also tied to complexity. In his systems theory-oriented view of artistic communication, Paulson suggests that because the levels and types of meaning in literature are multiple,

What appears to be a perturbation in a given system turns out to be the intersection of a new system with the first. In becoming aware of such a relation, the reader in effect creates a new context in which the previously disruptive event or variety is reread. (p. 44)

Reading literature, then, requires “constructing a pattern out of what interrupts pattern” (p. 44). Information that would be experienced as noise in non-artistic communication becomes, in literature, a new system requiring the reader to create a new context. Thus, Paulson describes the process as self-organizing:

The reader's construction of a meaning for the poem seems to proceed by a process of self-organization from noise: variety (and kinds of variety) not explainable in and of themselves become ingredients in a new level of explanation, a new context in which they may be informative rather than noisy. (p. 48)

The reader's process of reacting to seemingly extraneous information by creating new contexts and continuously reinterpreting within the web of contexts allows us to describe the act of reading literature as a complex system, or, in the language of chaos theory, a recursive process. Though reading may be itself a recursive process, the standards for interpretation and response often expect linearity: interpreting a work according to one system of meaning in a defined argument. In traditional school approaches to reading and interpretation, Dennis Sumara (2002) writes, students are generally asked to “represent and reproduce commonsense,” or to locate and lock down a work's intended meaning (p. 160). Cunningham's interpretation of Whitman in *Specimen Days*, on the other hand, I will argue is an example of a chaotic, nonlinear interpretive practice.

The Recursive Walt Whitman

Whitman's *Leaves of Grass* and the story of its writing and publication provide a productive place to begin a discussion of repetition and recursion in literature. Use of repetition is prominent in the poems themselves; however, it is Whitman's recursive process of writing and revision that make it a unique piece of American literary history.

In their 1973 introduction to the book, Sculley Bradley and Harold W. Blodgett write that Whitman's "final arrangement, [was] arrived at through almost incessant accretion, emendation, and manipulation from the first twelve poems, untitled and unsigned, of the 1855 edition to the authorized 1891-92 edition of three hundred and eighty-nine poems." (p. xxiii). They describe the structure of *Leaves of Grass* as one that "grew as the poet grew, that was adapted to the necessities he met and molded by the pressures his own life felt—its materials altered, added to, subtracted from, transposed as time and need required. And so it was alive." (p. xxxiii). Though this introduction was written before the discourse around chaos and complexity theories began, and long before it was applied to literature, we can hear echoes of the language of self-organization and emergent structure in these passages. Whitman's structure was not imposed by the author from the beginning, but emerged through the poems over a period of about thirty-five years, through various iterations of a book by the same title.

Whitman's descriptions of his work, too, bear curious similarity to the language employed by chaos and complexity theories. He compares the growth of his poems to the growth and change of the country: "Within my time the United States have emerg'd from nebulous vagueness to surprise, to full orbic, (though varied) decision ... Out of that stretch of time ... my Poems too have found genesis." (qtd. in Bradley and Blodgett 1973, pp. xxix-xxx). Both his poems and his country are in a process of emergence. Poems, Whitman writes, "grow of circumstances, and are evolutionary" (1889/1973, p. 565). The poems resist linearity and closure, employing the recursive tactic of contradiction as well as repetition: "Do I contradict myself? / Very well then I contradict myself, / (I am large, I contain multitudes)" (1891/1973, lines 1324-1326). Krystyna Mazur (2005) suggests that the concepts of emergence and excess are key to Whitman's work and history:

The "meaning of Whitman" indeed tends to "sprawl." Not the least because "sprawl" or excess lies at the core of Whitman's conception of meaning, but also due to the peculiar history of *Leaves of Grass*, the book which engendered the name, Walt Whitman. [...] Whitman's work provides a particularly powerful critique of the ways meanings are generated, a critique which suggests a proliferation instead of closure and infinite possibility in place of finite interpretation. (p. 37)

In Mazur's characterization, Whitman's repetition and contradiction constitutes an epistemological critique of singular and fixed knowledge. Many theorists draw on chaos and complexity theories to make a similar critique (see Fleener 2002; Doll, Fleener et al. 2005). How appropriate, then, for Cunningham's *Specimen Days* to engage Whitman and chaos and complexity theories together, in a multi-generic, recursive reading that imagines the past, present, and future of *Leaves of Grass*.

Chaos in *Specimen Days*

Specimen Days is a novel in threes: three seemingly distinct sections and stories, which are in fact inextricably tied to one another; three repeating characters, including a man, woman, and thirteen-year-old boy, who are always named variations of Simon,

Catherine, and Lucas, but whose incarnations in the three stories range from a ghost to a child terrorist to an android to an alien; and three very different but deeply related visions of Whitman and his “meaning,” raising at times unsettling questions about what it is to live with poetry, and presenting interpretations that far exceed the boundaries of traditional or school-based literary criticism. Cunningham’s interpretations of Whitman—and I use the word interpretation self-consciously here, as I hesitate to suggest any fixed relationship—is not through expository prose but through genre fiction: a ghost story, a cop thriller, and a sci-fi drama. The three visions/interpretations/iterations are set at approximately 150-year intervals in Whitman’s beloved New York City.

The basic structure of the novel, with its three iterations, already creates parallels to chaos theory. Each iteration builds from the one before it, and each represents and dramatizes an important border between order and chaos. The first iteration, “In the Machine,” is set in New York City during the industrial revolution, the time in which Walt Whitman lived. Both temporally and spatially, the setting of this iteration occupies the borderlands between mechanization and the natural world. Far from being fixed or well-defined, this boundary is strange and shifting: for example, it is Whitman’s teachings about the natural world that make Lucas believe that his dead brother is singing through the machines in his home and factory. The second iteration, “The Children’s Crusade,” moves forward to post-9/11 New York. Fears of terrorism run high, and this iteration explores the boundary between safety/security/normalcy and danger/fear/chaos. An underground group called “the family” wants to return the world to a state of innocence by destroying the machines, returning to a pre-industrial state. “The family” begins to accomplish its aims by arming young children with pipe bombs, blurring the relationship between safety and danger: in this iteration, “Those who seemed the most harmless are where the danger lies” (Cunningham 2005, p. 168). The third iteration, “Like Beauty,” takes place in an unspecified future time. We learn that much of the United States is uninhabited after a meltdown that may have been caused by the Children’s Crusade, just beginning in the second iteration. The main characters include an android and an alien, and New York City is now “Old New York,” a theme park filled with 20th century period actors to entertain European tourists. While New York is governed by an oppressive regime, most of the rest of the country has little or no government or even population, save a few bands of vigilantes. The borderland explored in this strange world is between restraint/repression and wildness/anarchy. Though very different, the settings of the three iterations are inseparable: each world cannot exist without the one before it.

A set of repeating details that we could describe as strange attractors runs throughout the iterations. The character that provides the main point of view in each iteration is subject to involuntary utterances: Lucas speaks in fits of Whitman, Cat writes strange lists of notes that veer into the bizarre, and Simon’s poetry chip causes him to blurt out lines from Whitman. A small white bowl with indecipherable lettering plays a role in each of the iterations, always coming from or going to a woman named Gaya. The New York locations of East Fifth Street, Bethesda Fountain, Broadway, and

Rivington are referred to in each iteration, and the significance of the date June 21 also repeats. Each iteration also includes a journey away from Downtown New York: Lucas, at the suggestion of Walt Whitman, walks north until the buildings disappear in Central Park; Cat escapes from New York on a train going south with Luke; and Simon, in the third iteration, escapes from New York by driving west into New Jersey with Catreen. Whereas the character repetition is more structural (and could be read as the iterated function), these strange repetitions read as places and themes compulsively returned to, no matter how different the stories surrounding them may be, adding another point of comparison to chaos theory.

Additionally, the stories' main themes make reference to chaos and complexity theories. In the first iteration, simple systems go awry: machines carry the voices of the dead. Behind the clanking of the machines in the ironworks, the wheezing of his father's breathing machine, and the chimes of his mother's music box, Lucas hears the singing of his dead brother, who was pulled into his machine at the ironworks. The second iteration undertakes a desperate search for a surface pattern when a little boy kills himself and someone else with a pipe bomb. Cat and her colleagues try to find some connection between the boy and the man killed: "Just don't let it be random" (Cunningham 2005, p. 100). The Children's Crusade, whose members do not know each others' names or even how to contact each other, becomes an example of organized disorder and unpredictability. The actions of this small group of people are somehow tied to the post-meltdown landscape of "Like Beauty," showing small changes in initial conditions that create drastic changes under iteration. In "Like Beauty," Simon's biomechanical system exhibits self-organization: regulated initially by a survival chip, an aversion to violence, and a poetry chip, Simon develops the capacity for emotion.

Educating Luke: Whitman as Teacher, Whitman as Curriculum

The regulars tended to love
patterns. They scanned the
news every day for further
evidence. She couldn't blame
them, really: Who didn't want
more patterns?
(Cunningham, 2005, p. 121).

In examining the patterns connecting *Specimen Days* to chaos theory and to Whitman, it is easy to become caught up in the search for patterns, and to lose sight of the significance of those patterns to the study at hand. Thus, without having come close to exhausting a discussion of recursion in Cunningham and in Whitman, I turn to the curricular implications of *Specimen Days*. I look first at the curriculum that emerges in the three iterations of *Specimen Days*: the ways that Whitman serves as both teacher and curriculum in these sections, with unexpected results. In each section, Luke (Lucas in the first iteration) is a twelve-year-old boy who, for one reason or another, does not go to

school in any formal sense. Luke's curriculum of Whitman is also common across the three iterations, as is a teacher figure bearing some connection to the good gray poet. Further, two of the three sections quote the following lines from Whitman's "Song of Myself": "A child said, 'What is the grass?' fetching it to me with full hands; how could I answer the child? I do not know what it is any more than he" (Whitman 1891/1973, lines 99-100; Whitman quoted. in Cunningham 2005, pp. 10, 69). This passage shows a pedagogy of uncertainty and unfinished-ness. As Whitman saw himself in the grass, the passage suggests that understanding connection is different from knowing what "is," consistent with M. Jayne Fleener's (2002) concept of curriculum as connection and relationship rather than "thing." In the poem, multiple tentative possibilities for thinking about grass follow. Whitman also stresses the importance of "finding out for oneself" and the impossibility of teaching: "You are also asking me questions and I hear you, / I answer that I cannot answer, you must find out for yourself" (Whitman 1891/1973, lines 1223-24).

"In the Machine" begins at Simon's wake, with Simon's younger brother Lucas and fiancée Catherine discussing what will happen after the death. Lucas has been given Simon's job at "the works" and will not go back to school. His response: "I don't need school. I have Walt's book" (Cunningham 2005, p. 4). Lucas's obsession with *Leaves of Grass*, which he generally refers to as "the book," is both a comfort and a problem for him: he diligently reads and memorizes a few lines each night, but repeats them back at odd and inappropriate times, particularly when nervous or agitated. He hopes that the book will make him more than "an empty suit of clothes":

Lucas had no soul at all. He was a stranger, a citizen of no place, come from County Kerry but planted in New York, where he grew like a blighted potato; [...] where he harbored not soul but an emptiness sparked here and there with painful shocks of love [...] What he wanted was the raucousness of the city, where people hauled their loads of corn or coal, where they danced to fiddles, wept or laughed, sold and begged and bartered, not always happily but always with a vigor that was what he meant, privately, by soul. It was a defiant, uncrushable aliveness. He hoped that the book could instill that in him. (p. 12)

Here, then, is a student fully devoted to his curriculum. His interpretations, though, seem to be a bit off: Lucas takes Whitman's statements that the dead are in the grass and everywhere else to mean that Simon's ghost is singing to the living through machinery, and that Simon will try to pull Catherine into the world of the dead. Lucas becomes obsessed with keeping Catherine safe, and he begs her not to go to her work because he believes her to be in danger from the machines at her company.

Resolution for Lucas comes not through his curriculum of "the book," but through a chance meeting with the teacher figure of Walt Whitman, as himself. Though Lucas finds Walt while searching for money, he is unable to tell Walt he is looking for something so banal, and so simply says he is looking for something important and necessary. Walt, believing he means a more poetic sense of searching, suggests that Lucas walk north past the edges of the city, telling him, "You'll see, you'll see. The search is also the object" (Cunningham 2005, p. 68). Walt asks Lucas to return the next

night to tell him what he found, and the two recite together the “What is the grass?” line quoted above. Lucas’s wandering takes him to Central Park, to Bethesda Fountain, where it is dark enough for him to see stars, and where he stands in the grass. Here:

A sensation rose in him, a high tingling of his blood. There came a wave, a wind, that recognized him, that did not love him or hate him. He felt what he knew as the rising of his self, the shifting innerness that yearned and feared, that was more familiar to him that anything could ever be. [...] Walt had sent him here, to find this, and he understood. He thought he understood. This was his heaven. [...] It was what the book told him, night after night. [...] What he’d thought of as his emptiness, his absence of soul, was only a yearning for this. (pp. 72-73)

The potential modernist interpretation of this section is clear: the absent soul appears; knowledge is imparted; what Lucas has learned through the book is confirmed through his teacher-arranged experience, and he gains understanding. Such an interpretation would also lead us to expect Lucas to quickly recognize his interpretive error in believing that his brother’s ghost is speaking to him through machines and trying to kill Catherine, but this is not the case. Instead, believing his fears have been confirmed, Lucas sacrifices his hand to his own machine at the works the next day with the hope that Catherine will leave work to come and help him. The final scene shows the Mannhatta Company, where Catherine works, burning as Lucas and Catherine join the crowd of onlookers outside. Lucas realizes that Simon really was speaking to him through the machine, but in an attempt to save Catherine rather than kill her.

Given an ending that would be nearly impossible in a modernist frame, as well as the chaos and complexity tendencies of the book as a whole that I have discussed, we might attempt a more chaos and complexity-oriented interpretation of curriculum and teaching in “In the Machine.” In such an interpretation, we see that language (Lucas’s, Walt’s, and Lucas’s quotations of Walt) is, as Mikhail Bakhtin (1981) contends, “overpopulated with the intentions of others” (p. 294), and that its use in curriculum yields unexpected meanings and results. Lucas’s readings of Walt are full of misinterpretations and ambiguous meanings that ultimately provide a strange but powerful system for interpretation: the dead are literally in machines. In the passage describing Lucas’s experience in the park, the modernist “he understood” is unsettled by the multilayered “he thought he understood,” which might serve to suggest that he did not really understand, or might simply state point of view. As a teacher, Walt does not impose his view or impart some static knowledge; he merely suggests paths and possibilities for Lucas’s search. The path he suggests is recursive, involving Lucas’s return to the same place for a type of assessment grounded in Walt’s genuine interest in what this strange boy has found.

The Whitman curriculum of “The Children’s Crusade” grows even stranger when we find that the three terrorist children were raised by a middle-aged woman they refer to as Walt Whitman, and that in the apartment in which they have spent their lives, the walls, ceiling, floor, and windows are plastered with the pages of *Leaves of Grass*. The woman called Walt Whitman explains this curriculum in a conversation with Cat:

Walt: "I thought they should grow up with poetry. It's been good for them, I think."

Cat: "Why did you choose Whitman?"

Walt: "He's the last of the great ones. Everyone else seems so slight."

Cat: "That can't be the only reason."

Walt: "Everybody wants a reason, don't they? Let's say this, then. Whitman was the last great man who really and truly loved the world. The machinery was just starting up when he lived. If we can return to a time like Whitman's, maybe we can love the world again."

Cat: "That's the message you wanted the boys to get?"

Walt: "Oh, I don't think you get a message from poetry, really. You get a sense of beauty. I wanted my boys to understand about beauty. My family is bringing beauty back." (Cunningham 2005, p. 188, character names added for clarity)

Here, a curriculum based in Whitman turns dark, becoming the curriculum of children raised to kill others and themselves. However, "Walt" tells us, the purpose of saturating the apartment with poetry is not to communicate a particular message, but to develop in the boys a sense of beauty. To some extent, it is this sense of beauty that Cat appeals to in disarming her child attacker by promising to take him to the ocean.

In "Like Beauty," Whitman's poetry is used for a completely different purpose: that of regulation. Emory Lowell, the man who created Simon, explains his choice of the poetry chip:

To regulate you. To eliminate the extremes. I could put a cap on your aggressive capabilities, I could program you to be helpful and kind, but I wanted to give you some moral sense as well. To help you cope with events I couldn't foresee. I thought that if you were programmed with the work of the great poets, you'd be better able to appreciate the consequences of your actions. (Cunningham 2005, p. 281)

For Simon, developing real emotions is accompanied by a move away from poetry: he is unwilling to recite the lines in which a child asks about grass with Emory near the end of the section, much to Emory's confusion. In both of these sections, Whitman's work is employed by a teacher character for a specific purpose, but refuses such order, yielding unpredictable results. *Specimen Days* shows Whitman's work used in three vastly different contexts and types of curriculum; each time *Leaves of Grass* resists the order imposed on it and explores a deeper, stranger sense of order.

Conclusion: Recursive Readings

You will hardly know who I am or what I mean,
But I shall be good health to you nonetheless,
And filter and fibre your blood.

Failing to fetch me at first keep encouraged,
Missing me one place search another,
I stop somewhere waiting for you.
(Walt Whitman, "Song of Myself," lines 1341-1346)

Reading is a repeated enactment of the failure to be one with, to possess, the poem. Reading is a failure of repetition and a starting over; reading misses and undertakes its search again—the "meaning" of the poem emerges in this process of repetition. (Krystyna Mazur 2005, p. 61).

The quotations from Whitman and Mazur, above, dramatize reading as a recursive process, a repeated search for meaning that in fact generates meaning in its iterations rather than finding it. Shifting now from the curriculum in the book to the curriculum of the book, I see *Specimen Days* as an invitation to recursive reading, to chaotic reading practices that push for "proliferation instead of closure and infinite possibility in place of finite interpretation," borrowing again from Mazur's comments on Whitman (p. 37). In interpreting Whitman not through critical prose or even responsive poetry, but through a ghost story, cop thriller, and sci-fi novella, Cunningham opens possibilities for thinking about interpretation not as an act of closure but as an explosion of meanings. How might such recursive reading animate curriculum? What recursions emerge when a book with a Whitman curriculum joins Whitman in the curriculum?

In closing, I turn to the work of M. Jayne Fleener (2005):

The promise of the contemporary version of New Science, for us, is [...] a manifestation of a poetic logic that will allow us to invent new ways of being in our natural world, new ways of understanding, and new ways of interacting that celebrate and explore the interplay among matter and spirit, knowing and meaning, imagination and reality. (p. 6)

Reflecting on this quotation, I am amazed how much Whitman I hear in it—the search for new connections, the celebration of relationship—the poet's logic of repetition/recursion. As an invitation to chaotic reading practices, *Specimen Days* suggests alternative possibilities for engaging with texts and for thinking about curriculum within the framework of chaos and complexity theories. In contrast to a linear approach to interpretation closing down on one intended meaning or even the tension between two potential meanings, Cunningham offers us an explosion of Whitman "meanings," set together in a complex system that could, hypothetically, continue to generate more meanings (i.e. we could continue combining these characters with other genres and time periods and see how Whitman speaks in those contexts, and

how these meanings speak to each other). Recursive reading, then, is related to other strategies involving complex systems of interpretation, such as Dennis Sumara's (2002) *Commonplace Book*, in which students read a text multiple times, literally writing in their interpretations and responses from each reading, and Alan Block's (2004) work on Talmudic interpretation, which generates a multiplicity of interpretations to form a system in which none are privileged. Clearly, Cunningham's recursive reading cannot be simply imported into curriculum, and students' interpretations of every book they read cannot be in the form of 3-part novels. But I wonder what school-based literary interpretation would look like if reading were reconsidered as a recursive process.

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