In a short essay from high school, Jamie Burke offered a whimsical approach to adversity. “Struggles are the vegetables of life,” he wrote. They “do not appear the tastiest, but are necessary to attempt good health.” With a flair for the figurative, he described both his sensorimotor challenges and the therapies and accommodations that have allowed him to flourish. Take, for example, his sensitivity to smell and hearing. From the moment he began his inclusion journey as a young boy with classical autism, he dreaded the malodorous mosh pit of the cafeteria. He dreamt of lunch “being served in a room far from cooking, so smells are not sickening.” Lunch should be “a time for peaceful eating and not loud talking and annoying bells and whistles, which split my ears as a sword in use of killing monsters.” “My ears hear colossally well,” he noted, “so noise can be difficult.”

Anxiety could be difficult, too—very difficult. It arrived, the burly, six-foot-seven Jamie said, “as a constant visitor, just as breathing.” He believed his “cells have a nucleus filled with it.” Pacing offered some relief, but he felt as if a porcupine were constantly prodding his nerves. “Sensory integration has been like a giant Band-Aid to my body,” he reported. “It wraps up the
stingers as a ball of cotton and makes things more comfortable for me.” Such therapy took many forms, either striving to subdue his overperforming senses or to draw out his underperforming ones, all the while working to blend them in a manner that neurotypicals take for granted. For instance, Jamie used—in fact, still uses—an augmentative communication device called a Lightwriter, which allowed him to “both see the words and hear them in a constant voice that was always the same . . . in speed and tone.” The simultaneity stitched vision and hearing together, making each more useful.

Samonas (“spectral activated music of optimal natural structure”) listening therapy promoted better auditory processing of speech. According to Jamie, “It gives your ears the feeling of reaching the bridge over the missing meaning of sounds.” It helped, he said, with both “distinction” and “connection.” Heavily patterned classical music, adapted to emphasize high-frequency overtones at targeted moments and shifting strategically from ear to ear, is thought to aid the listener in taking in the full auditory spectrum and processing it more efficiently. Suddenly, Jamie could hear “whole words.” “Before,” he commented, “I would lose certain sounds, and the words seemed as garbage to be thrown out with no use to them.”

Other therapies focused on his proprioception, or the awareness of his body in space. Not only is there demonstrable dysfunction in the brain’s motor areas in classical autism but also the two cerebral hemispheres don’t communicate as well as they might. Therapies like neurological drumming and figure-eight movements on a rope swing facilitate midline crossing, which in his case worked to integrate the two sides of his body. With the former, the patient alternates hitting a drum with his left and right hands as the clinician moves the drum and forces him to reach on a diagonal. These therapies, Jamie contended, “gave me faster speed in typing with both hands, and helped me to organize my body when I cut food, ate, shaved and washed my hair.”

Basic, improvised accommodations made a difference as well. “In elementary school, beanbag seats, rocking chairs, headphones with music, net swings, and being squeezed between two mats in the physical therapy room allowed me my upsets,” he wittily explained, “but . . . never . . . the request to leave the school.” To make lunch bearable, he would collect his loaded tray at the entrance of the cafeteria, having ordered it in advance, and thereby avoid the “ordeal of looking at and smelling all the many foods.” Although he lamented eating by himself in a quiet place, he knew that he had to manage stress. Henry David Thoreau, that paragon of primitive solitude, once remarked of his aversion to comfortable urbanity, “I would rather sit on a
pumpkin and have it all to myself, than be crowded on a velvet cushion.” He, too, had his quirks, and, some believe, may have been on the spectrum. Or, as one of Aesop’s fables advises, “Better to eat a crust in peace than to partake of a banquet in anxiety.”

Some of these accommodations fell away as Jamie grew older; others took their place. When he matriculated to Syracuse University, which was just a short drive from his house, he had to acquaint professors with the kinds of needs most had never encountered before. (Jamie is thought to be only the eighth or ninth student with classical autism ever to earn a college degree.) For one thing, he had a classroom aide, as he did in elementary, middle, and high school. The aide helped him to remain on task, oversaw his augmentative communication devices, and studied with him. For another, he frequently stimmed in class—this allowed him to vent nervous energy and, paradoxically, to take in the lecture. Albert Einstein once quipped, “A man who can drive safely while kissing a pretty girl is simply not giving the kiss the attention it deserves.” In autism, however, the postures of attention are different: driving can facilitate, as it were, the ardent movement of lips. “Really, I think my stims may help my management to absorb information at times,” Jamie has said.

Because anxiety often inhibited word retrieval and rendered auditory processing difficult, he made sure that his professors didn’t leap to conclusions about his ability. “I feel stronger when you get to know me and my autism. Your knowledge is my power,” he explained. If he struggled to respond to a question, it wasn’t necessarily because he didn’t know the answer or was like other distracted (or hungover) college students. Jamie much preferred a classroom with windows, and he wished to sit near natural light rather than “in the middle of the crush of desks.” He asked his professors not to speak too quickly and requested that course materials be available in alternative formats so that he could both see and hear them. Fairly typically, he needed extra time on tests, but he also needed them in a larger font. And he wanted to take tests in a private room so as to be able to read them aloud to himself. In labs, he needed a stereohead (what Jamie called a “dual-eyed”) microscope and time to do the labs alone. His motor impairments made the process excruciatingly slow, and he didn’t want the other students to have to wait for him.

About inclusion, the young man with a chinstrap beard and auburn hair was at once starry-eyed and pragmatic. “Certainly students like me struggle at times, but when we struggle . . . I see the lowering of expectations,” Jamie remarked at an autism conference in Vermont in 2013. “I have been truly fortunate with people who respect me and . . . try to help my success . . . as a
student. Passionate, creative ways are sometimes necessary.” He was especially appreciative of teachers who believed in his “potential as a true possibility.” “I am not planning a segregated life for myself,” he told the audience, but “our bodies need . . . support in order to live in the world.” Speaking directly to educators, he pleaded, “Do not just give us the desk then leave us to only fill the seat. We are certainly worth your efforts.”

At the same time, he fully acknowledged the disabling aspects of autism, which couldn’t always be circumvented, and he knew his own sensory limits. “I am greatly perplexed when I see young students’ systems being overwhelmed trying to be what is ‘normal,’” he warned. The summer before my son, DJ, embarked on his own college adventure, he asked Jamie about living in the dorm. “Not a chance,” he replied. “It’s too long in the day.” It was all he could do to keep it together from 9 to 5. He needed to be able to return from campus at night to the familiar space and rituals of home. For him autism was “a balance straddling the gulf between what is desired and what is.”

But lest you hear too much resignation in that statement, consider the fact that Jamie desired to speak, and at the age of thirteen, to the astonishment of many an expert, including Albert Galaburda at Harvard University, he accomplished this feat. As a small child, he had been taught to type on a keyboard using that much-maligned technique called facilitated communication (FC). With FC (or supported typing), the person with autism is offered resistance at the hand, elbow, or shoulder as he manipulates a keyboard. Eventually, Jamie learned how to type independently and then started to speak what he pecked out, two fingers at a time, like an oilfield pumpjack or “thirsty bird,” as that contraption is sometimes called. “I decided to take a risk and began to try just one word,” he recounted. “I know my voice sounded foolish, but it felt ok to try.”

“The voice is a wild thing,” Willa Cather wrote. “It can’t be bred in captivity. It is a sport, like the silver fox. It happens.” And yet Jamie’s voice was indeed bred in captivity. “When I was growing up . . . I could see the words in my brain,” he recalled, “but . . . they died as soon as they were born. What made me feel angry was . . . that I knew exactly what I was to say and my brain was retreating in defeat.” An innovative occupational therapist used a range of movement therapies, including rhythmic drumming and a metronome, to mechanically coax a voice from Jamie’s fingertips. At first, he could only speak while typing; then he could only read aloud something that he himself had typed, the memory of having produced the words with his fingers somehow guiding his mouth. Now he can read aloud another person’s
text and even speak without first typing what he wants to say. As the Zen adage puts it, “Leap and the net will appear.” When he is nervous, however, he still prefers to prime his voice motorically. “This is the journey I am on,” Jamie told the Vermont conference audience, “from a boy in his tender years with no voice, to a boy who could begin to find his voice and formulate useful language.” “It has taken many, many people who presumed me to be competent and who held my dreams,” he said gratefully.

I recount the story of Jamie’s eggplant or green pepper response to adversity because the novel we read together by Skype—Leslie Marmon Silko’s Ceremony—features a protagonist who must similarly find his way to health. Not health in the strictly narrow, Western, medical sense but in the much broader Native American sense, where an individual’s illness or dysfunction can only be healed in relation to the health of his or her community. Of the protagonist Tayo, the medicine man, Betonie says, “The becoming must be cared for closely” (120). This becoming turns out to be a rich, sensorimotor odyssey, one that Jamie could very much relate to. His own sensorimotor odyssey began at the Jowonio School in Syracuse, an institution devoted to the principle of inclusion. In the language of the Haudenosaunee, a group of Native American tribes in the Northeast and Great Lakes areas of the United States, “Jowonio” means “to set free.” “I was a little boy with luck,” Jamie recalled, “because Jowonio was a joyous . . . place of community.”

Published to great acclaim in March of 1977, Ceremony tells the story of a World War II veteran of mixed Laguna-Pueblo and white ancestry who returns from combat in the Philippines with a severe case of battle fatigue, or what we now call posttraumatic stress disorder. After convalescing for a period at a VA hospital, Tayo travels to the impoverished Laguna reservation in New Mexico where his aunt and grandmother reside, still haunted by the death of his cousin Rocky during the infamous Bataan Death March of 1942. He had promised to look after Rocky, whose head a Japanese soldier had sadistically cracked in two. Western medicine fails to help Tayo, who, like many Native Americans, was encouraged to leave the old customs behind in favor of the material promises of assimilation. In his case, he joined the army.

The novel tracks Tayo’s agonizing descent into alcoholism and destructive behavior as he fleetingly recalls, through his grandmother and the New Mexico landscape itself, a long forgotten way of relating to the world. Eventually, the ministrations of the mixed-race medicine man Betonie and
a phantom woman (or spirit figure) bring about Tayo’s recovery. That recovery coincides with the return of rain to the drought-plagued reservation. During combat in the Philippines, Tayo cursed the jungle’s unending deluge; the curse, he comes to realize, worked too well. At the end of the book, he completes a ceremony that “restores harmony with [his] natural surroundings and . . . with [his people],” Silko remarked in an interview.

Considered by some to be the first Native American novel by a woman, Ceremony won its author many honors, including an inaugural MacArthur (or “genius”) Award in 1981. The book is widely taught in high school and college and is considered a seminal text in Native American literature. As the Western writer Larry McMurtry notes, it “has been startling and moving readers in their thousands for more than a quarter-century.” It isn’t, however, your typical novel—not by a long shot. The Native writer N. Scott Momaday has labeled it “a telling” because it is so filled with, and shaped by, the mythic creation stories of tribal culture, which is a distinctly oral, as opposed to print, phenomenon. The book also seems to present a Native version of magical realism, one that paradoxically amplifies the gritty verisimilitude of reservation life while also making palpable the living force of the Laguna past and land. Some scholars have read the novel as an early and powerful ecological statement; others have called the land, which has been contaminated by nuclear testing, the novel’s primary storyteller.

I’m embarrassed to admit that I hadn’t read Ceremony before I did so with Jamie by Skype. I’d simply not gotten around to it; nor had I assigned it for a class, which is sometimes the motivation I need to fill such professional lacunae. Jamie and I had been friends for a decade by the time we began our collaborative discussions. I had met him and his parents, Mike and Sheree, at an autism conference about a year or so after he had learned to speak. Mike was a former corrections officer who traveled the country selling baseball memorabilia; Sheree was a former administrative assistant who worked part-time and supported her son’s inclusion—Jamie was the third of three truly strapping Burke boys. (The oldest is six-foot-nine.) In every sense, my son, DJ, looked up to Jamie, and because they shared the experience of being inclusion pioneers, the two grew quite close.

I knew that, having now graduated from Syracuse, Jamie missed what he called “structured learning.” I also knew of his fascination with Native American culture. Maybe he could participate in my project, I thought; maybe we could read Ceremony together. At SU, he had majored in Religion and Society and minored in Native American Studies, yet his interest in the lat-
ter long predated his postsecondary pursuits. As he pointed out, his hometown sits “on Native lands but most don’t know it.”

Lake Onondaga, the birthplace of the Haudenosaunee, borders Interstate 690 as it heads southeast from the New York Thruway to the western suburbs of Syracuse and then into the city itself. On the shores of Onondaga, in the thirteenth or fourteenth century—the date is still in question—the Peacemaker Dekanawidah founded a political and cultural union, a confederacy, of five previously warring nations: Oneida, Mohawk, Cayuga, Onondaga, and Seneca. (The Tuscarora were added in the eighteenth century.) The Great Law of Peace, which Jamie studied in the fourth grade, lays out in wampum symbols a kind of storied constitution, along with rules and prescribed ceremonies. *I have uprooted the Great White Pine Tree. In this cavern we shall toss our weapons of war and bury the hatchets of hatred as we replant the Tree of Peace. On top of this tree I will place an eagle to watch for any dangers that may come to endanger this peace. I will also send out four white roots of peace. If anyone seeks peace, they can trace the roots back and find shelter here.*

If you grew up in Syracuse, you couldn’t miss the befoulment of Lake Onondaga, even if you knew nothing about its importance to the Haudenosaunee. In the seventeenth century, a group of Jesuits set up a mission on the northeast shore of the lake. The Onondaga welcomed them, and an agreement was ceremonially proclaimed: *We shall call each other Brother, as we are equal. In one canoe is our way of life, laws, and people. In the other is your ship with your laws, religion, and people. Our vessels will travel side by side down the river of life. Each will respect the ways of the other and will not interfere with the other, forever. As in any good contract, the terms were meticulously spelled out: Forever will be as long as the grass is green, as long as the water runs downhill, and as long as the sun rises in the east and sets in the west.* In Mario Puzo’s novel *The Godfather*, Don Corleone tells a rival family, “We are all honorable men here. We do not have to give each other assurances as if we were lawyers.”

The discovery of salty brine springs at the southern end of Onondaga soon attracted the interest of settlers. Salt was not only a prized seasoning but also a crucial preservative. It had value. After the War of Independence, New York State took control of the lake, and commercial salt production burgeoned—to the point that throughout the eighteenth and nineteenth centuries, Syracuse was referred to as the “Salt City” and Onondaga as “Salt Lake.” The mineral was so central to the region that when the Erie Canal opened in 1825, someone dubbed it “the ditch that salt built.” Between 1797
and 1917, nearly twelve million tons of finished salt were produced. The waste from this process was dumped directly into Lake Onondaga, but the environmental damage was only just beginning.

The real culprits would turn out to be soda ash, which was needed to make industrial products, such as glass, and mercury, which was needed to make chlorine. By the mid-1970s, Allied Chemical was responsible for releasing an estimated twenty-five pounds of mercury into the lake each day. It was as if Skyholder himself, the high god of Haudenosaunee mythology, had been poisoned, and the lake eventually succumbed: ice harvesting was outlawed in 1901, swimming in 1940, and fishing in 1970. The very place where, more than half a millennium before, the confederacy had been consecrated, was now a superfund site, the most polluted lake in America. An old Cree saying warns, “When all the trees have been cut down, when all the animals have been hunted, when all the waters are polluted, when all the air is unsafe to breathe, only then will you discover you cannot eat money.”

In English we speak of a man being worth his salt—but not his lake. As he grew up, Jamie followed the environmental protests in Syracuse. He loved to read about the different Indian nations—both in school and on his own. A favorite teacher, who “felt the sadness in dear destruction,” exposed him to the history of conquest. She also exposed him to Native American creation stories, unleashing a veritable obsession—what the typical autism expert would term, without irony, a “restricted interest.” (As one website puts it, “Restricted and repetitive interests and activities are . . . [a] key feature[] of autism. Watching a fan spin around for hours; flipping the flag on a toy mailbox up and down again and again; taking a spoon or other inanimate object everywhere as though it were the most special thing in the world.”) Looking back, Jamie said, “I simply love the idea of the earth as the valuable essence of life. I feel comfortable in this culture.” He especially appreciated contemporary efforts at tribal rebirth—what he called “developing the hope of living in liberation after being devastated in fundamental life.”

At Syracuse he was able to take a number of classes with Native American professors, and he was pleased by “the respect he received as a learner.” He felt not only welcomed, which is rare enough in inclusive education, but also treasured. “I have noticed,” Jamie wrote, “that in the study of the Native Americans, there seems to be a calling for . . . demonstrating the life-worth of all communities of people, whether they are the Nations of the Haudenosaunee, Iroquois, or Mohawk, or communities of people who . . . struggle with communication, motor dysfunction, or sensory regulation. [Everyone]
The Heavens of the Brain

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This is the context in which Jamie and I read Ceremony, roughly twenty pages a week for twelve weeks. I knew going into our Skype discussions that autistic readers tend to wonderfully scramble typical patterns of identification. When I had discussed Moby-Dick with Tito, I was astonished by how much he identified with the book’s central mammal—he especially loved Ishmael’s descriptions of the very different ways that whales hear and see, linking these descriptions to his own neurodiverse sensing. And when I had discussed Adventures of Huckleberry Finn with DJ, I was astonished as much by his ferocious identification with the runaway slave Jim as by his identification with the lonesome river.

Jamie, in contrast, was more conventional. He naturally identified with the Native American protagonist and immediately empathized with Tayo’s debilitating fear. (I say “conventional” because a novel encourages the reader to get behind its hero, even as, in the case of Ceremony, it may tamper with the conceit of a strictly individual or human one.) “I have journeyed in my own system of terror to a dimension of peace,” Jamie said. For him, the terror was the recognition of “being abnormal in the social world” and the possession of a sensory system so differently integrated and intense as to produce constant anxiety. “Many are lost in fear. Fundamental to know others suffer and greatly emerge,” he commented. When I asked him how he had vanquished his terror, he replied, “The contribution of therapies is paramount to my value of calm.”

The connection to the novel’s protagonist was strengthened by his father’s service in Vietnam. A marine, Mike had fought in the Battle of Hamburger...
Hill, so named for the way that men had been ground up like beef. Part of Operation Apache Snow, this ill-advised assault on the North Vietnamese Army resulted in the deaths of seventy-two Americans; five times that number were wounded. A quiet, dependable man, Mike had a granite dignity about him. “My father,” Jamie explained, “effected love as a natural discourse to leave the memories behind.” In the novel, of course, Tayo also finds love and in the process begins to heal.

Jamie’s understanding of traumatic recovery seems profoundly astute: it involves, in his words, “not vitally destroying the emotion of fear but moving through the connection it brings to life.” When we discussed the difference between the white man’s medical response to trauma and the Native American’s ceremonial response, we lingered over the medicine man Betonie’s remark: “In that hospital they don’t bury the dead, they keep them in rooms and talk to them” (114). In Jamie’s analysis, “White people deem pills as returning to health, but Native Americans believe that the soul of the past within the physical must be healed first. The body will follow.” “When the mind and the soul are in illness, the physical,” he clarified, “can be recuperated but not whole. It is as a living death.” The ceremonial response to trauma, which is at once communal and somatic, seeks to heal a failure of relation—between body and mind, past and present, individual and group, people and land.

In this way, to identify with Tayo was to identify with other entities as well. The Acu, or “place that always was,” if not a character per se, is certainly a presence, even a conscious being, in Ceremony, and Jamie shared both the author’s nonlinear sense of time and her ecological politics. The novel, to put it simply, doesn’t have a setting: the Laguna people don’t live on the land; rather, they live in and through it. Because Silko refuses all manner of dichotomies and instead insists on dynamic simultaneity, Jamie’s identification with Tayo wasn’t finally a conventional gesture at all. Rather, by identifying with him, he was identifying with the Native dream of wholeness in which the alienated individual falls away and a place and a people, along with its vital history, stand proud.

We had begun to discuss Ceremony in April 2014, a few weeks after my spring break, and I was already feeling the crush of late semester obligations. We’d Skype at the end of a workday when I was typically tired and a tad irritable. I have terrific students at Grinnell, but when they get stressed, many of them become scattered, even downright spacey. And because the college tries to cram too many events and meetings into that cruelest of months,
it compounds the frenzy of the school year’s conclusion. With confidence, and more than a bit of sass, Walt Whitman exclaims in *Song of Myself*: “My words itch at your ears till you understand them.” In April and early May, itching frankly won’t cut it. A professor’s words need to burrow like a cockroach into the auditory canal. (Cockroaches, according to experts, crawl into peoples’ ears more than any other bug. I read this on Yahoo last week. “Positively thigmotaxic,” they like tight-fitting spaces.)

And yet, no matter how tired or irritable I was—to think of one’s pedagogy as an insect invasion is pretty irritable—Jamie would snap me out of it. “Hi, friend, good to see you,” he would say. “Fun to engage this most enjoyable time.” His dedication to the novel and our discussions moved me greatly; it went so far beyond mere diligence or enthusiasm. “Really, I feel the reality of having a strong obligation to read this,” he said, though he often found the novel “highly distressing to the emotions.” He wondered about how DJ manages “deep upset”: “Can he shed tears and express this? I cannot myself and strongly carry the dependent emotion of crying in my mind.” In one conversation, he proclaimed, “Literature is very vital to my knowledge.” And then he asked, “How do kids search in their hearts when they cannot read these books?”

A Native American professor at Syracuse had once described Jamie’s writing as “dreamy.” There was indeed something to this description, but the *Brigadoon* quality often seemed more diagrammatic than pictorial, more math than mist. Imagine a kind of divine geometry: all manner of shapes floating in the air, the cathedral of life rendered as a set of three-dimensional plans. An aficionado of complex symmetry, Jamie attempted to translate his formidable spatial perceptions, which are governed largely by the right cerebral hemisphere, into language, which is governed largely by the left, with all of the syntactical and usage challenges this entailed. For example, he called the business of talking about how a book intersects with our lives “dimensional truth.” Laguna chants were “harmonies of elevation.” Human voices “carry visual form.” Ceremonies “can structure visual connection with the grounding of the past.” When he liked something I said, he would respond with “cool as ice” or “highly structural.” There was no greater compliment he could give than to appreciate an entity’s essential organization.

In *The Autistic Brain*, Temple Grandin provides a clue as to what may be going on. Whereas in her groundbreaking work *Thinking in Pictures* she simply conceived of neurotypicals as verbal thinkers and autistic thinkers as visual ones, in this book she ruffles the binary in order to account for autistics
who are verbal thinkers and autistics who are visual thinkers but in ways very different from herself. “What I called a picture thinker,” she reports, “[the new research] called an object visualizer, and what I called a pattern thinker, [it] called a spatial visualizer.” Grandin excelled at the former but was surprisingly poor at the latter. Spatial visualizers can manipulate objects in their heads, moving them at will in a kind of organic calculus, as though they were determining the volume of a solid of revolution without equations. Grandin can see these objects in astonishing detail, but to map them she must move around the object herself, as though she were holding a video camera.

Neuroimaging has shown that there are two visual pathways in the brain: the ventral, which handles the appearance of objects, and the dorsal, which handles the position and relation of objects in space. As Grandin notes, “People obviously use both pathways, relying more on one or the other depending on the task.” But in autism a particular path may be dominant, exceedingly so. In the 1920s, a German psychologist noticed that hallucinations—from drugs, migraines, flickering lights, and other causes—took one or more geometric forms: tunnels, spirals, lattices, or cobwebs. In the 1980s, a mathematician at Cal Tech hypothesized that “because hallucinations moved independently of the eye, the source of the images was not on the retina but in the visual cortex itself.” In other words, the hallucinations were a reflection of the fractal geometry that undergirds functional sight, a geometry that turns out to be ubiquitous in nature. When you hallucinate, you see seeing. It’s quite possible that in autism, where bottom-up processing is the norm, spatial visualizers behave a bit like a computer, a natural one, synthesizing and manipulating visual information to discover the living essence of objects in space. They see an object, at least initially, the way that a dorsally driven visual cortex, and not the eye in service to the frontal lobes, would “see” it.

Whenever I applauded Jamie’s insights and spoke more generally about cognitive strengths in autism, he would say, “You are a wonderful man.” But he could also tease me about being too professorial. Sometimes I’d lose track of what I was doing. I’d think I was at the annual Modern Language Association conference blathering away with my colleagues. “You are engaging the academic,” he would say cheerfully. “A professor is someone who talks in someone else’s sleep,” the British poet W. H. Auden quipped. Even more devastating is this remark by the Danish philosopher Søren Kierkegaard: “Take away paradox from the thinker and you have a professor.”

Jamie reminded me of one of the reasons I had fallen in love with literature in the first place: it is a sanctuary for paradox, a Jurassic Park where
roaring contradictions thrive—long after, we might say, an asteroid struck the human mind with such force that it sent a cloud of rationality into the frontal lobes and precipitated their extinction. A paradox doesn’t need to be resolved; it is a way of thinking multiple things at once, a way of moving beyond the restrictive categories of language. Take the word “disability,” for example. Is autism a disability? Perhaps it is a disabling ability? Or even an enabling disability? Literary language, as Tito demonstrated, is as fluid as the sea, and it allows us to swim around or under the terms that constitute thought. In my teaching, I try to analyze a text without mastering it, and I try to hold back as much as I can so that my students discover things on their own. With Jamie I strove less to be a professor than an older, book-loving comrade. “There are two kinds of teachers,” wrote Robert Frost, “the kind that fill you with so much quail shot that you can’t move, and the kind that just gives you a little prod behind and you jump to the skies.”

Increasingly Jamie believed that the novel welcomes an autistic neurology. While Ceremony obviously presents a story, it dramatizes space, not time, the customary engine of narrative. In fact, it does away with the latter altogether, or at least its unidirectional version, because it has come to signify inexorable ruin. At one point in the novel, as Tayo searches for some cattle that white ranchers have stolen, he muses, “The ride into the mountain had branched into all directions of time. . . . Rocky and I are walking across the ridge in moonlight. . . . This night is a single night; and there has never been any other” (179). By treating time as space, Tayo begins to escape the iron logic of loss. He experiences the fullness of the past through something like radical stereopsis, or depth perception. The image of Rocky gestures at unseen dimensions, including the “four worlds below,” where the spirits of the dead reside, and the space of mythological figures such as Corn Mother and Thought-Woman.

When I inquired as to why Silko interrupts the story with Native legends and poems, Jamie replied, “Through the poems, memories and ceremonies are slowly returned to Tayo’s mind. They are the voices of the past seeking connection to the present. They exist outside of the novel and must somehow be brought in.” “Tayo,” he remarked in a startling figure, “is listening with more than ears.” And Jamie, it seemed to me, was reading with more than eyes. He was using his considerable visuospatial prowess to illuminate the novel’s spiritual geography. Betonie’s counsel that “the becoming must be cared for closely” thus applies as much to the protagonist as to the
reader who is asked to think like a spatial visualizer and to piece together—dynamically—the novel’s own “becoming.”

“How would Silko understand autism?” I asked, intrigued by the prospect that Jamie’s affinity for Native American culture was as much a matter of cognitive style as it was hospitable feeling or political conviction. Although he certainly experienced the equivalent of “the Native American world of challenges,” something about his own sensing lined up with what he had encountered in his studies at Syracuse and in reading Ceremony with me. Pointing to the mute boy Shush who lives with Betonie and who is said to have been raised by bears—think of him as a Native twist on the feral child—Jamie believed Silko would reject the prevailing stereotype of autistics as “deeply tuned out.” She would view the condition not only as a potential shamanic gift, he maintained, but also as a mark of profound connection with nature. “Perhaps Shush is autistic,” he speculated, “in that he sees beyond the purely physical.”

In a conceit that reflected Silko’s desire to preserve the endangered values and traditions of an oral culture in a print medium, Jamie presented autism as a kind of literacy instructor. “Autism plays ideas as a mother in the reading of books,” he said, “meaning that the mother, or earth, formulates connection in the strong sense of the Indian language.” I remember being perplexed by this statement but also having a sense of what he meant. The irony of associating autism with parenting, let alone teaching, did not, however, escape me. Autism, according to Jamie, is at once a mother instructing her children and Mother Nature herself, a source of interpretable, life-sustaining lessons. Literacy in this understanding becomes a way of being in the world as much as a phonological, orthographical, semantic, syntactical, and morphological technique; the book of life, as reflected in the language of the Laguna people, emerges from the land. Like Silko, Jamie refused to accept a strict dichotomy between reading and living or between thinking and seeing.

Although autism is a profoundly visuospatial intelligence, it doesn’t preclude verbal ability—that should go without saying. Just as Grandin learned to express herself in language, so, too, did Jamie, though he acknowledged that the translation of the visual into the verbal continues to be frustrating. My point is that certain works of literature seem especially to reward a visuospatial intelligence. When Jamie reported that he “really enjoys the strong visual emotions that Silko extends to readers” or references her “words of visual courage,” he could be said to confirm what cognitive scholars already know: that literature’s concrete diction elicits mental imagery in the minds of
readers. But when he says, “I enhance the process of interpreting the patterns of language in order to demonstrate the progress of movement in the visual” or “I work in the beauty of the production of image evolving in my world of interpretation,” he points to something conspicuously autistic: the kind of videographic imagination that Grandin and others have talked about.

Grandin’s seminal book *Thinking in Pictures* begins like this: “I think in pictures. Words are like a second language to me. I translate both spoken and written words into full-color movies, complete with sound, which run like a VCR tape in my head. When somebody speaks to me, his words are instantly translated into pictures. Language-based thinkers often find this phenomenon difficult to understand, but in my job as an equipment designer for the livestock industry, visual thinking is a tremendous advantage.” Jamie hasn’t yet found employment that would allow him to exploit his own capacity to think in pictures, but he would agree with Grandin. “My creation of visual mind is something I am passionate about,” he emphasized. To him, reading literature is akin to watching a 3D (or even 4D) film in his head. While the typical reader seems to connect a novel’s images like a primitive, flip-book animator, Jamie connects them like an award-winning Hollywood producer! He “enhances,” as he says, the “process of interpreting the patterns of language” by giving words not only more flesh but also more motion. Such enhancement proved especially useful when he began to explore Silko’s idea of reparative becoming through ceremonial movement.

Scholars of modernist literature speak of a literary style called “stream of consciousness” in which, as a common dictionary definition puts it, “a character’s thoughts, feelings, and reactions are depicted in a continuous flow, uninterrupted by objective description or conventional dialogue.” Images run into each other like entities in a flood: lawn chairs collide with trashcans; strollers collide with bicycles. It’s a constant, cerebral ampersand in which the non sequitur reigns! Silko no doubt uses this technique to convey Tayo’s anguished state of mind, but she is finally interested in something else, something much more ambitious. She wants to convey, as Jamie helped me to understand, an evolving relationship between the land, the past, and a people—an evolution that in no way sacrifices that past or renders it defunct. Call it “stream of geography” or the spatial visualizer’s antidote to linear history.

Jamie’s movie-making mind dedicated itself to the project of vitally seeing Tayo’s slow passage back to wholeness. In a Western context, the poet Wendell Berry remarks, “The concept of health is rooted in the concept of wholeness. To be healthy is to be whole. The word *health* belongs to a family
of words, a listing of which will suggest how far the consideration of health must carry us: heal, whole, wholesome, hale, hallow, holy.” Jamie was intimately familiar with this broader notion of health, which for him involved not only the many therapies and accommodations he had received but also, and just as important, the community of support he had worked to establish. From that community emerged a kind of palpable spirituality. His “creation of visual mind” and his love of Native American culture fueled his identification with Tayo, and, as will become clear, it encouraged him to map his motor challenges onto Silko’s hero.

In chapter 1, Tito explained the phenomenon of hyperfocusing. One consequence of local overconnectivity and a greater reliance on posterior sensory regions of the brain to think is a preference for details over categories and the concrete over the abstract. Jamie experienced this phenomenon as well, and it, too, seemed—uncannily—to serve the needs of the novel. Before thinking tree, for example, he takes in “the molecular structure of the good freedom of the natural world.” “Details are my friends,” he explained. Like a poststructuralist of the visual, Jamie celebrates each tree’s irreducible particularity, noting, “The wood of the forest of trees perhaps engages the brain to connect with the work of differences.” The category tree and the even bigger category forest emerge slowly. “I believe it’s seeing the tree in the process of creation,” he remarked. With this kind of seeing, the world doesn’t exist in advance as something to be used or mastered.

“Delayed decoding,” to borrow another scholar’s memorable phrase, facilitates extraordinary pattern detection in autism. In fact, the ability to think beneath the category is crucial for seeing how ostensibly discrete things might connect or how ostensibly linked things might connect differently. The researcher Tim Langdell found that autistics excel at “pure pattern” whereas neurotypicals excel at “social pattern” — “pure pattern” hides in plain sight, as in the test where the autistic boy called that decorative pillow a ravioli. It contradicts the socially assigned and accepted meaning of things, and in this way it can foster creativity. As Grandin writes, “The trick to coming up with novel uses for a brick is not to be attached to its identity as a brick. The trick is to reconceive it as a non-brick.” Imagine a mason doing just that by using his beloved materials to shatter the plate-glass tyranny of his employer. In this scenario, the mason becomes a matador and the boss a bull—both see red.

Hans Asperger, the doctor who separately discovered autism in Austria during the late 1930s, believed that “the enhanced pattern-recognition of his autistic patients would make them valuable code-breakers for the Reich.”
In bravely stating this view, Asperger, according to the recent book _NeuroTribes: The Legacy of Autism and the Future of Neurodiversity_, was trying to save them from the Nazi T-4 program, which ended up euthanizing some 300,000 people it deemed “life unworthy of life.” Asperger looked beyond the disabling aspects of autism and discerned otherwise imperceptible ability. Pure pattern recognition can thus have a paradoxically social use: it can protect against coagulated prejudice.

Over the course of our discussions, Jamie revealed his considerable ability to “sequence the pattern”; “the pattern is what I see in the first look,” he said. “I like following it. Truly I am summoning the answers and revealing what the information connects.” Unlike Grandin and other so-called “high-functioning” autistics, he doesn’t attribute his advanced patterning skills to a Spock-like repudiation of emotion; his seeing isn’t strictly logical, however bottom-up it may be. Nor is it a-social, not in the least. What Jamie describes above sounds a lot like motif tracing, a staple of literary study. A motif, as any first-year literature student knows, is a reoccurring image or theme that musically structures a novel, poem, or play. This structure is subtle, and it requires not only searching for it in unexpected places but also recognizing it in unexpected forms. I took note of how Jamie had translated a nonconceptual autistic propensity—to see patterns—into a conceptual neurotypical one. In literature he had found a meeting point for the two processing styles. “Books are patterning on thoughts,” he said confidently.

_Ceremony_ makes great use of patterns—and not just in the way that a skilled author does. Rather, the ritual that restores Tayo to health literally requires improved pattern detection. Tayo is said to be “involved with other things [than words]: memories and shifting sounds heard in the night, diamond patterns, black on white; the energy of the designs spiraled deep, then protruded suddenly into three-dimensional summits, their depth and height dizzy and shifting with the eye” (212). The woman with whom he makes love wears a blanket. Tayo “did not miss the designs woven across the blanket in four colors: patterns of storm clouds in white and grey; black lightning scattered through brown wind” (165). When I asked Jamie about this passage, he replied, “The pattern is of the universe and through her he will receive the heavens of the brain.” To be certain that I hadn’t missed the import of this insight (or his miraculous phrasing), he added, “I mean that this pattern will open the thought to remembering what Betonie has spoken of and seen as vision.”
In *Ceremony*, an actual picture of “the pattern of stars the old man drew on the ground that night” (165) appears. “Why would a novel, which is an art form made of words, include a drawing of a constellation?” I asked. “It is important to reveal the vital process of emotion, especially when those stars will passionately interpret a pattern of return. To me the drawing looked simply as a thought of pure energy,” he replied. How interesting: Jamie seemed to put his finger on Silko’s need at this moment for something like an autistic, which is to say visuospatial, intelligence. The patterning of words alone, she hints, is inadequate: the writer’s tiny graphic signifiers can’t quite depict the volumetric depth or annulated shape of prophecy.

Neurobiological accounts of trauma, interestingly enough, reveal an analogous overreliance on the brain’s posterior sensory regions and right-hemispheric limbic structures. What matters to such an intelligence and what seems more likely to initiate healing in trauma is not language alienated from the body—the so-called talking cure—or language alienated from the patient’s environment, but embodied, communal activities such as yoga and dance that holistically incorporate language. Traumatic images become healing ones, Silko implies in a Native American context, through ceremonial movement. But new patterns are paramount. They bring new thoughts, new possibilities.

In this way, a multiracial author insists on a multimedia form. The future depends, as Betonie understood, on adapting the old ways, including the transformation of oral storytelling into print narrative. Burke called this sort of “changing with the present” “intelligent continuation,” and the phrase can be applied as much to Tayo’s “journeying into the place of memory” as to his own journeying into the place of typing and speech.

...  

IT WAS A TYPICAL February morning in Grinnell—cold, gray, and, above all, windy. The plains writer Greta Ehrlich once titled a book *The Solace of Open Spaces*, but I’ve never found such openness to be a balm. As I drove to the public radio station in Iowa City, I kept looking at the scraggily pines that served as a windbreak for the farmhouses I passed. Facing west, stooping in spite of themselves, they struggled in the late-winter gale. The fronts that come through, their endless histrionics, mock the tight-lipped stoicism of these trees. It’s as if they are trying to offset some embarrassment of sky—some nimbostratus aunt, say, who descends upon the house and pours out
her intimate miseries. The weather in Iowa, I once told a friend, is like a Sharon Olds poem: it’s entirely too confessional.

In 2011, my wife, Emily, and I had coedited a collection of writings about the concept of neurodiversity, and I had convinced the host of Iowa Public Radio’s noon show The Exchange to have us on—not only us but also two of the volume’s contributors: a graduate student at Penn State named Scott Robertson and Jamie Robertson, who was vice president of the Autistic Self Advocacy Network and who had contributed an essay titled “Neurodiversity, Quality of Life, and Autistic Adults: Shifting Research and Professional Focuses onto Real-Life Challenges,” would phone into the program from State College. Jamie, who had contributed to the self-advocate roundtable and whose words in an email to me became the volume’s epigraph, would participate via the public radio station in Syracuse. (“I must send forward my bold appreciation for taking the soul of this topic . . . to be shared among the many and diverse hearts who will attempt a new understanding,” the epigraph reads. “It can be very lovely when curious old patterns of comprehension shift to a more connected and true demonstration of the improved focus. My deep thanks, then, for the spirit of change and challenge.”)

To make things still more complicated, Emily would phone in from Grinnell—only I would be in the IPR studio in Iowa City. I had told the host, Ben Kieffer, that Jamie would need to type his remarks before speaking them, which presented a problem: dead air, a period of near-silence in which listeners would be treated to the faint sound of fingers on a keyboard. But since this was a show about neurodiversity, Kieffer went with it, explaining periodically to the audience what they were hearing. In 1964, a writer for Life magazine commented on the many improbable things that Guglielmo Marconi’s contraption had spawned: “Radio tried everything, and it all worked. It even invented a new kind of singer whose voice wasn’t even loud enough to carry across a hotel bedroom, and Americans, as it turned out, would rather hear these ‘crooners’ than any big-bellied tenor who ever shook an opera house chandelier.” Jamie’s voice could certainly carry, but it needed motoric priming before it could make the light fixtures swoon.

As far as we knew, this was the first live radio interview with a formerly nonspeaking autist—or at least one who’d learned to speak at thirteen. I was apprehensive, to put it mildly. In fact, as I donned the IPR headphones and positioned my mouth in front of the microphone, I thought of Ronald Reagan’s ill-conceived mic-test joke: “My fellow Americans, I am pleased to
tell you I just signed legislation which outlaws Russia forever. The bombing will begin in five minutes.” What might I say? “I have just signed legislation that outlaws normalcy forever. Inclusion will begin in five seconds.”

The social psychologist Carol Gilligan, whose 1982 book *In a Different Voice* sparked a much-needed consideration of gender in the field of ethics, trenchantly observes, “Speaking and listening are a form of psychic breathing.” My son, DJ, would love this notion—the ears and mouths of people operating as lungs, the body politic and all of its ethnic, racial, gender, class, and neurological differences striving for homeostasis. I thought of how labored psychic breathing can become when a particular group hasn’t been invited to join the conversation. *Whatever happens on air will be fine,* I told myself. Indeed, it would be an improvement upon the constant palaver of nonautistics about autism. Let the majority listen for a while. After all, “listening,” as autist Dawn Prince once pointedly remarked, “is the superior half of speaking.”

For as long as I had known Jamie, I had marveled at his ability to type independently, which is rare in classical autism, and to speak aloud what he had typed, which is even rarer. Jamie had distinguished himself in these (and other) respects, but how exactly had he done so?

I was, of course, familiar with the research that conceived of autism as a sensorimotor disorder. That view had emerged when the stranglehold of mechanistic thinking about the brain began to relax. Scientists abandoned modular notions of brain functioning (this controls that, etc.) in favor of complex networks that connect otherwise distinct regions in intricately patterned ways. Even the oldest, most primitive, “reptilian” regions, such as the basal ganglia and cerebellum, which had been thought to contribute narrowly to motor function, were implicated in higher-order thought. (The basal ganglia enable voluntary motor actions whereas the cerebellum ensures “coordination, precision and accurate timing.”) In fact, Gerald Edelman coined the phrase “basal syntax” to emphasize the fundamental relationship between movement and language.

Speaking, to be sure, is one of the most complicated motoric things that humans do—speaking as the act of making discernible sounds but also the act of stringing such sounds together in a fluently sequential way. Language, argued Marcel Kinsbourne, is an “elaboration, extension and abstraction of sensorimotor function.” It evolved from “utterances that were coincident with and driven by the same rhythm as the movement in question.” Or
as Iain McGilchrist put it more recently, “The deep structure of syntax is founded on the fixed sequences of limb movement in running creatures.” These researchers point to the fully integrated and embodied nature of human cognition: it is neither modular in its operation nor cut off from the flesh. Indeed, the brain depends on a body—a very active body—to think. (Even—or especially—when it claims to be a kind of self-made man!) “A voice cannot carry the tongue and lips that gave it wings,” the Lebanese poet Kahlil Gibran once lamented. “Alone it must seek the ether. And alone and without his nest shall the eagle fly across the sun.”

This is not to say that impairments in the “nest”—in the basal ganglia and cerebellum—fail to manifest themselves in specific ways. Rather, it is to insist on a holistic understanding of both dysfunction and potential remediation. Over the last five or six years, the scientific literature has confirmed what autistics, parents, and clinicians have known for quite some time: that autism spectrum disorders (ASD) are “associated with significant and widespread alterations in motor performance,” as a meta-analysis from 2010 concluded. This study went so far as to propose that motor differences, particularly in the basal ganglia and cerebellum, constitute a “core element” of autism and that “interventions aimed at improving . . . motor coordination (i.e., gait and balance, arm functions and movement planning)” should be developed.

But what is at stake in such interventions? Nothing less than being itself. If we remember the pithy formulation of two systems scientists—that “to move is to perceive, and to perceive is to move”—then we might begin to fathom the extraordinary dynamism of this constant feedback loop. We might also be less tempted to conceive of impaired social interaction in autism, for example, or perseverative “behavior” as evidence of innate cortical dysfunction than as “downstream effects of . . . various noisy, unpredictable and unreliable peripheral inputs.” This last bit is researcher-speak for disturbances in sensory processing and action broadly construed. If such disturbances can be corrected or circumvented, the reigning narrative of ASD falters dramatically.

Listen to the editors of a groundbreaking book on movement differences in autism. I quote Elizabeth Torres and Anne Donnellan at length because they effectively depict what typical maturation accomplishes and, in turn, help us to see the hidden challenges that autistics face:

When the sensations from our ever changing physical motions emerge as a stable percept that we can reliably predict, we begin to anticipate
the sensory consequences of our impending actions with remarkable certainty. . . . We begin to understand cause and effect in the physical world that we interact with, a world that includes others in social motion as well. The understanding of our own actions through their sensations helps us scaffold social cognition by establishing first the sense of self as an anchor, and then the sense of others and their relative motions. . . . It is through the sensations of our own movements and through those of the movements of others as we sense them kinesthetically and visually that we learn to mentally navigate actions, to acquire a sense of agency and autonomy, and to eventually imagine, in a disembodied way, what it would be like to perform a physical action without actually having to do it.

Analyzing the movements of typical toddlers, Torres discovered that three-year-olds “do not yet have statistical predictability of temporal features of their limb movements.” It’s not only that they lack the control and motor fluency of four-year-olds but also that their movements are still conspicuously random: there’s too much noise, and too little signal, as they respond with their bodies to a moving and endlessly variable world.

Even when they attempt to produce the same movement, the movement is different—that’s the point. The organism must be able to adapt spontaneously to the demands of the present, which in all of its swirling specificity only vaguely resembles the moment just before it. These toddlers haven’t yet assimilated what the philosopher Maria Brincker and Torres call “sensorimotor priors”: a sturdy, “probabilistic expectation about the variability itself.” In this key respect, classical autistics operate motorically like typical three-year-olds.

Brincker views “sensorimotor priors” . . . as a kind of predictable probabilistic body, an abstract body that we can ‘bring into’ counterfactual scenarios and thus use to navigate and make decisions in spaces we do not stand in current embodied relations to.” In contrast, autistics must “rely on their ‘here & now’ body and world sensation.” They are beautifully stuck in the present, unable to leverage the past to create an immediate, if less captivating because motorically homogenized, future. They are like Adam and Eve taking their first entrancing step in the Garden. They are living quite literally in the moment—again and again and again. I am unaware of anyone who has proposed a link between “weak central coherence”—the business of sensing so much detail as to make forming conceptual generalizations difficult—and a lack of “sensorimotor priors.” In both cases, as probabilistic expecta-
tion offers little guidance, perception and movement stall, like a stunt plane whose angle of attack has exceeded maximum lift. They remain immured in mesmerizing intensity, not propelled by the customary procedures—the flight plan—of temporal abstraction.

For this reason, another researcher in the collection, Pat Amos, argues that autism should be considered a temporo-spatial processing disorder akin to Parkinson’s syndrome or certain traumatic brain injuries. She writes,

It is often observed that the sense of time appears to work differently for many people with autism. That would not be surprising, given the increasing evidence that autism involves challenges to neural connectivity and different ways of assembling experiences. What has to be connected in order to accurately sense time is something even more complicated than, for example, connecting speech sounds with facial movements. Time is not a mode or channel of sensory experience, but an amodal property that unites the perceptions of different senses. We sense time through comparisons of our experiences, bootstrapping from events of known duration to establish expectations about other events; repeated events in the world and familiar rhythms of the body come to stand for intervals of time, with which new events can be compared.

Amos concludes, “If these embodied experiences are unreliable for people on the autism spectrum, it might make sense that the comparison process also would prove challenging, resulting in a panicked feeling of being adrift in a sea of time.”

Enter the drum and metronome. As the authors of yet another essay in the volume report, not only does auditory rhythm activate a person’s motor systems, but there is also “evidence of rapid motor synchronization to an external rhythmic cue in persons with and without neurological disability.” As anyone who has ever attended a dance or tapped their fingers to a song on their iPod knows, a particular beat can physiologically commandeer our bodies, prompting us to move in concert with it. Scientists call this phenomenon “entrainment,” and it has far-reaching implications for rehabilitative interventions. Research has demonstrated that auditory rhythmic cueing offers a “temporal template for [the] organization of motor output.” It affects both “the timing of movement and the total movement pattern” by “add[ing] stability in motor control immediately (within two or three stimuli) rather than through a gradual learning process.” It’s like a referee, or the shot clock at a basketball game: it imposes itself on the action. By
“influencing motor anticipation . . . the [listener’s] response pattern gradually becom[es] automatized.”

In this way, such cueing can compensate for irregularities in the basal ganglia or cerebellum and perhaps even encourage cortical plasticity. As the authors note, the cerebellum has been shown to aid “in computing the temporal parameters of incoming sensory stimuli and outgoing movements as well as in novel, temporally precise motor movements.” It is the organic “comparator” of which Amos speaks. It “predicts the timing of an upcoming movement, utilizes sensory feedback from the current movement, compares ongoing performance to an internal model, and then adapts responses such as force and/or trajectory.” Like a kind of motorized auditory wheelchair, rhythmic cueing can move the struggling autist along. It can do much of the work of “sensorimotor priors.”

Neurological drumming and a metronome helped Jamie to type independently and eventually to speak. Samonas listening therapy helped him to tie his shoes. “So many things were hard for me to learn,” he reported. About that latter milestone, which he had achieved at the age of fifteen, he said, “My brain moved into hiding the reason for not being able to do it.” “Like saying letters, mostly there was no pattern to follow in my brain for tying my shoelaces. After much practice . . . it seemed a pattern moved into my brain, giving directions to my hands. I think my music therapy gave help with this.” By pattern, Jamie means something like a path or continuum, a kind of impetus that helps to string a series of motor actions together. His body needed the conviction of a moving sidewalk at the airport or a bowling ball that’s kept out of the gutter by bumpers—momentum and direction driving intentionality forward and instilling confidence. The authors of the aforementioned article write, “Building an anticipatory means of motor control in autism might . . . facilitate the development of internal models for motor planning.” This seems to be what happened with Jamie.

Like him, Tito also used auditory motor cueing to learn how to tie his shoes, except that his cue of choice was metrical poetry—in particular, a poem by the eighteenth-century British romantic poet William Blake. Wrapping, in his words, the tetrameter of the poem around his fingers, he coaxed them to execute the necessary movements. If we should no longer think of the brain as modular (but, rather, as a fully embodied, plastic, and integrated network, one capable of neural accommodations and workarounds), perhaps we should no longer think of the arts as narrowly modular, too. They are not
simply effete refinement—an unimportant evolutionary inheritance, a kind of “auditory cheesecake,” as Stephen Pinker once described music. Auden famously lamented, “Poetry makes nothing happen,” but that’s not true, as least with respect to its effects on the body and, as we will see, its ability, through the phenomenon of motor coupling, to foster community.

“The predictability of musical stimuli and the use of stimuli to improve motor planning may have additional effects on cognitive, communicative, and social functioning.” Indeed! Tito was so plagued by anxiety as a young boy and Soma had so run out of ways to mollify him that one day she popped into her eight-track recorder a tape of British metrical poetry and he stopped dead in his tracks, becoming quite calm. The way some people leave the TV on all day, Tito leaves poetry on—“as a background to [his] sound environment.” “It gives me a secured feeling because of the predictability formed by the pattern in words,” he explained.

I had heard of clinicians using poetry to help patients understand their emotions, but that is largely a content-based endeavor. I had never considered the psychological benefits of rhythm and rhyme. When I pressed Tito on this notion, he replied, “A rhyme is a very linear auditory experience. And so is the beat—be it in tetrameter or in pentameter. It arouses the cortical mind with certain meaningful language experience and arouses the subcortical mind with the expectation of the mechanical beat that is offered by the lines of the poem. Anxiety is subcortical. Anxiety gets diluted by the experience.” Delving into the matter more deeply, I discovered that he was right. A study from 2013 found that metrical patterning and phonological resonance between words “help to structure a verse line in time.” Such structuring, I reasoned, may work to pull the autistic listener into the future. There was even evidence that these things “led . . . to more positively perceived and felt emotions.” With its loud and regular horn, the sonic train of verse may provide precisely what the proverbial psychologist orders: the feeling of moving forward.

It may also aid in what Frederick Turner calls the brain’s “synthetic and predictive activity of hypothesis construction.” By that he means our ability to answer the question “What's next?” without overly taxing the system. “By ruling out certain rhythmic possibilities,” Turner writes, “meter satisfies the brain's procrustean demand for unambiguity and clear distinctions. By combining elements of repetition and isochrony [the rhythmic division of time into equal portions] on the one hand with variation on the other, it nicely fulfills the . . . habituative need for controlled novelty.” That need, as I have shown, is overwhelming in classical autism.
I came to think that formal poetry had served as a kind of prosthesis for Tito—the equivalent of Ahab’s ivory leg or “the auger hole [on the Pequod’s quarter deck], bored about half an inch or so into the plank” (125–26). “His bone leg steadied in that hole,” Ahab, Ishmael tells us, could “st[and] erect, looking straight out beyond the ship’s ever-pitching prow” (126). Tito, too, needed a way to stand erect—to captain the heaving ship of his senses. Like Ahab’s, his was a homespun accommodation, something worked up out of necessity, in the absence of formal help from professionals. All across the country, parents of autistic children—usually the mothers—tinker in this way. Sometimes, as in Jamie’s case, they’re aided by innovative occupational therapists, psychologists, and speech-language pathologists. Rarely do parents or clinicians or autistics themselves(!) get the recognition they deserve as the experimental vanguard of scientific knowledge.

With Sheree sitting quietly beside him and offering the “grace” he said he needed to engage in the autism wars, Jamie performed magnificently during the program on neurodiversity. The Exchange host began by asking him why he needed to type his answers before speaking them. As he hunted and pecked in the background, I tried to establish a context for his answer, explaining the problem of poor sensory integration in autism and noting the way that Jamie’s Lightwriter device joined the visual and the auditory in real time. “It’s seeing and hearing together,” he had once said to some education professors. When he typed, the word would dutifully emerge on the screen and then just as dutifully be voiced by the mechanical synthesizer. Both print font and voice remained stable.

Whereas typical children move from speech to literacy by connecting the sounds they produce with ease to the graphic marks on a page, Jamie moved in the opposite direction by connecting the graphic marks on his Lightwriter to the sounds coming out of the synthesizer. The Lightwriter served as prompt and model; the metronome, as external motor-planning device. With his eyes, in effect, being asked to move his tongue, and his ears, in effect, being asked to move his limbs, he jerry-rigged a voice, one whose nest most certainly travels with it as it flies across the sun! Aggressive auditory-visual and auditory-motor coupling overwhelmed the considerable obstacles to speech.

“The patterns are powerful only when brains are given a thoughtful way of exchange,” Jamie told the IPR audience. I sensed that the host didn’t quite know what to make of this answer, for he immediately said, “To your knowledge, Ralph, this doesn’t happen every day on radio or in the media very
much?” “Ever,” I replied, both stressing the word and drawing it out. What was most intriguing to me (and what obviously couldn’t be explored on the radio) was that motor memory in one domain (typing) could facilitate motor performance in another (speech). On a basic level that made sense: movement has to be translatable from one form to another—in this case, from arm and hand movements to tongue and voice-box movements. But how could the memory of the former aid the performance of the latter?

A recent study revealed that listening to unfamiliar music activates the listener’s motor systems. Even more interesting, the interstices between songs on a familiar CD do the same. The researchers hypothesized that motor areas support sequential mastery and, in the process, provide a memory boost. This is why we all know which song is coming next on our favorite CD. It is as if our motor systems create an essential continuum by constantly anticipating—we might even say, by constantly remembering—the future. They listen, in Jamie’s phrase, “with more than ears.” They listen when technically there is nothing to listen to and, in so doing, provide “intelligent continuation.” Perhaps Jamie’s tongue and voice box moved with more than arms. Perhaps, in perfect stillness, they remembered how to talk.

“What has full inclusion meant for you, Jamie?” the host then asked. “How has it made you different from how you would have been had you not been included in regular education?” With a kind of spiritual gusto, he replied, “Perhaps it’s the power of belief in the soul of the independent individual.” “Inclusion is important initiation to life,” he added, repeating the phrase. When he had been asked this question in the past, Jamie had emphasized the importance of what inclusion proponents call a “print-rich environment.” “Exposure to the printed word is like water to the desert,” he said. “Only books could lead the way to gain understanding [of] how to say sounds.”

At one point, Kieffer raised the issue of the infamous Autism Speaks fundraising pitch that I mentioned in the previous chapter; he even played a clip of the nearly satanic voice of ASD. Resisting our unequivocal denunciation of the ad (and others like it), he said, “These people mean well. What’s wrong with wanting to fix autism?” While Jamie typed out his answer—“I hear Jamie clicking away on his keyboard,” Kieffer remarked enthusiastically—Emily spoke about the conundrum of self-esteem in a world that conceives of the autist as regrettably broken: “Self-advocates have had to give themselves the confidence that they are worthy of being advocated for,” she said. “There must be a way of advancing scientific agendas without demeaning people,” I insisted. When Jamie was ready to speak aloud what he had typed,
he dismissed the scary, Darth Vader–like voice: “It does not speak to the people of autism in my life. Fears are not supports but the destroyers of forward movement.” They are a threat, he might have said, to “intelligent continuation.” The audience couldn’t have appreciated the full resonance of his statement. I didn’t appreciate it at the time, but after reading *Ceremony* with Jamie and listening to the program again, I do now.

Carol Welch once commented, “Movement is a medicine for creating change in a person’s physical, emotional, and mental states.” It is also a way of uniting people. A recent study pointed to yet another benefit of auditory rhythmic cueing. It confirmed that, “having listened to a rhythmic beat, individuals’ movements become more aligned to the frequency of that beat” and, even more important, that “when alignment to the rhythmic stimulus occurs in two interacting individuals, manifesting as increased motor coupling, their interpersonal attitudes toward one another become more positive.” Here, we have the very basis of Native American community: the social bonding through ritual that neurologically knits people together.

In this context, prophecy is less an actual prediction than a holistic sense of how the body moves in the world. “There were transitions that had to be made in order to become whole again” (157), Betonie explains. We might think of these transitions as akin to the gaps or interstices in a complex motor task. Call what is required to navigate them *spiritual* priors. Tayo needs a sense of time that is at once productively spatial and linear. In touch with the spirit world, the former rejects the so-called ruin of Native history; the latter insists on pushing forward. The future will not be worth living if it cannot be remembered motorically.

A line from one of the poemlike chants that interrupts the novel proclaims, “I am walking back to belonging” (133), and Tayo himself is described as “want[ing] to walk until he recognized himself again” (143). At the end of the novel, as he moves ceremonially through the landscape with the woman who has drawn him out of traumatic remembrance, we are told, “Every step formed another word” (218). Movement is language, a fully embodied and embedded narrative of healing. There is simply no point in talking about Native recovery apart from the body or place of belonging. “The ear for the story and the eye for the patterns were theirs” (236), the novel declares. “The feeling was theirs: we came out of the land and we are hers” (236).

As we read *Ceremony* together, Jamie saw in Tayo’s story his own story of coming to life through speech. “The ability to speak with voice curiously created many new patterns of access,” he noted. “Before I had voice, I couldn’t
write because the letters were wavy.” “The shapes,” he continued, “were wading in waves. I could absolutely see the language, but when my voice moved forward, it formulated the form differently.” “Now,” he reported, “I am simply reading text when I see the words.” Learning to speak also changed how Jamie retrieved language, and it gave his own language feeling. “When I lived in silence there wasn’t emotion,” he said, adding, “Keyboards carry no energy” and “Typing cannot return the emotion.” Jamie is alluding, of course, to “emotional prosody,” that crucial quality of the spoken word. Summing up his neuroplastic, sensorimotor journey and calling out experts who presume not only mental, but also social, incompetence in autism, he asserted, “I vitally correct the movement of much truth in the challenge of speaking.”

It is more than a bit ironic that Western neuroscience has begun to embrace a notion of the integrated and holistic body that is similar to ancient Native notions—without, of course, the spiritual dimension, which Jamie relishes. The current concepts of embodied, embedded, and extended cognition depict human beings in a world of tangible affordances—one might even say, of undeclared assistive technologies. Disability reveals the fiction of the self-reliant individual by emphasizing the complex accommodative ecologies that make life possible for all of us. In this way, the idea of medicine as facilitating relationship, not correcting lamentable physiological flaws, is completely compatible with the concept of neurodiversity. Understanding his own progress as a mover in physical, mental, and spiritual terms, Jamie maintained, “We are just people on the transition, Ralph.” “Harmony for me,” he said, “is all structural realities and great worlds connecting with people and dimensions to create peace and calm and engagement of hearts and minds which then move in the dear success of lovely life.”