

4 THE LETTING GO

The struggle of maturity is to recover the seriousness of a child at play.

—Friedrich Nietzsche

THE THEATER IS EMPTY; the house lights are low. Yo-Yo Ma is lugging his cello across the stage toward a lonely metal chair at its center. The instrument looks heavy, and Ma takes delicate steps, the long horsehair bow jutting out into space. He sits, steadies himself in the chair, and stares for a long moment at the sheet music. Then he raises his right arm, positions his fingers on the wooden neck, and drags the bow across the strings. The first note sounds like a beautiful moan.

I'm sitting next to Bruce Adolphe, the composer of the piece Ma is rehearsing, and he seems a little nervous. Because Ma is such a celebrity—in the previous two months, he's played twenty-three concerts in eighteen cities—this is the first time Adolphe has heard him play the music. "There's always that anxiety that comes during the run-throughs," Adolphe says. "I've been living with these notes for so long, but it always sounds different when it's up on stage." Ma is sight-reading the piece, so he begins play-

ing slowly, like someone trying to decipher the first pages of a novel written in a barely familiar language. Sometimes he stops in the middle of a phrase and then repeats the notes with a slightly different interpretation.

And then, after a few tentative minutes, Ma begins to disappear into the music. I see it first in his body, which begins to subtly sway. The movement then spreads to his right arm, so that the bow starts to trace wider and wider arcs in the air. Before long, Ma's shoulders are relaxed and expressive, drawing together whenever the tempo increases. And when he repeats the theme of the piece, his eyes briefly close, as if he were entranced by the same beauty he's pouring into space. I look over at Adolphe: his tension has turned into a faint smile.

Bruce Adolphe first met Ma at the Juilliard School in New York City. Although Ma was only fifteen years old at the time, he was already an established performer, having played for JFK at the White House and with Leonard Bernstein on national television. Adolphe was a promising young composer who had just written his first cello piece. "Unfortunately, I had no idea what I was doing," Adolphe remembers. "I'd never written for the instrument before." He'd shown a draft of his composition to a Juilliard instructor, who told him that the piece featured a chord that was impossible to play. Before Adolphe could correct the music, however, Ma decided to rehearse the composition in his dorm room. "Yo-Yo played through my piece, sight-reading the whole thing," Adolphe says. "And when that impossible chord came, he somehow found a way to play it. His bow was straight across all four strings. Afterward, I asked him how he did it, because I had been told by the teacher that it couldn't be done. And Yo-Yo said,

'You're right. I don't think it can be done.' And so we started over again, and this time when the chord came I yelled, 'Stop!' We both looked at his left hand, and it was completely contorted on the fingerboard. The hand position he had somehow found was uncomfortable for him to hold; his fingers were twisted in a most unnatural way. 'See,' Yo-Yo said, 'you're right, you really can't play that.' But he did!"

For Adolphe, the story is a reminder of Ma's astonishing talent, his ability to play those unplayable chords. It's a virtuosity that has turned Ma into one of the most famous classical performers in the world, an artist celebrated for a wide variety of recordings, from the cello suites of Bach to the swing of American bluegrass. He's improvised with Bobby McFerrin, recorded scores for Hollywood blockbusters, and popularized the melodies of Central Asia. "Sometimes, I'll watch him play and I'll feel that same awe I felt as a student at Juilliard," Adolphe says. "He can take your notes and he can find the thing that makes them come alive. Ma is a technical master, of course, but what makes him such a special performer is that he also knows when to release technique for something deeper, for that depth of emotion that no one else can find."

But Ma wasn't always such an expressive performer. In fact, his pursuit of musical emotion began only after a memorable failure. "I was nineteen and I had worked my butt off," Ma told David Blum of *The New Yorker* in 1989. "I knew the music inside and out. While sitting there at the concert, playing all the notes correctly, I started to wonder, 'Why am I here? What's at stake?' *Nothing*. Not only is the audience bored but I myself am bored. Perfection is not very communicative." For Ma, the tedium of the flawless performance taught him that there is often a tradeoff be-

tween perfection and expression. "If you are only worried about not making a mistake, then you will communicate nothing," he says. "You will have missed the point of making music, which is to make people feel something."

This search for emotion shapes the way Ma approaches every concert. He doesn't begin by analyzing the details of his cello part or by glancing at what the violins are supposed to play. Instead, he reviews the complete score, searching for the larger story. "I always look at a piece of music like a detective novel," Ma says. "Maybe the novel is about a murder. Well, who committed the murder? Why did he do it? My job is to retrace the story so that the audience feels the suspense. So that when the climax comes, they're right there with me, listening to my beautiful detective story. It's all about making people care about what happens next."

Ma's unusual musical approach is apparent during these rehearsals, as he carefully refines his interpretations of Adolphe's score. Over the course of the afternoon, his performance steadily accumulates its feeling; his body grows more loose-limbed and expressive. Ma's slight shifts of interpretation—hushing a *pianissimo* even more, speeding up a melodic riff, exaggerating a *crescendo*—turn a work of intricate tonal patterns into a passionate narrative. These shifts are not in the score, and yet they reveal what the score is trying to say. Most of the time, Ma can't explain what inspired these changes, but that doesn't matter: he has learned to trust himself, to follow his storytelling instincts.

And this is why Ma sways as he plays: Because he can't restrain himself. Because he is experiencing the same emotions that he is trying to express. Because he is letting himself go. "The best storytellers always get really into their own stories," Ma says. "They're waving their arms, laughing at their own jokes. That's

what I try to be like on stage . . . I know that some of the best music happens when you let yourself get a little carried away.”¹

To make this kind of performance possible, Ma cultivates an easy, casual air backstage. Thirty minutes before the concert begins, Ma disappears into a quiet room. When he reemerges, I expect him to be somber and serious and maybe a little nervous. Instead, Ma is just as disarming and funny as ever, teasing me about my tie, eating a banana, and making small talk with Adolphe. This ease is not a pose: Ma needs to stay relaxed. If he is too clenched with focus, too edgy with nerves, then the range of his musical expression will vanish. He will not be able to listen to those feelings that guide his playing.

“People always ask me how I stay loose before a performance,” Ma says. “The first thing I tell them is that everybody gets nervous. You can’t help it. But what I do before I walk onstage is I pretend that I’m the host of a big dinner party, and everybody in the audience is in my living room. And one of the worst things you can do as a host is to show you’re worried. Is the fish overcooked? Is the wine too warm? Is the beef too rare? If you show that you’re worried, then everybody feels uncomfortable. This is what I learned from Julia Child. You know, she would drop her roast chicken on the floor, but did she scream? Did she cry or panic? No, she just calmly picked the chicken off the floor and managed to keep her smile. Playing the cello is the same way. I will make a mistake on stage. And you know what? *I welcome that first mistake*. Because

1. In many respects, Ma’s obsession with spontaneity and expression—and his disinterest in perfection—evokes an earlier mode of performance. The classical music of the eighteenth century, for instance, is full of cadenzas, those brief parentheses in the score where the performer is supposed to play “freely.” (The practice peaked with Mozart, who wrote cadenzas into most of his compositions.) In these frantic and somewhat unscripted moments, the performer was able to become a personality and express what he felt.

then I can shrug it off and keep smiling. Then I can get on with the performance and turn off that part of the mind that judges everything. I’m not thinking or worrying anymore. And it’s when I’m least conscious of what I’m doing, when I’m just lost in the emotion of the music, that I’m performing at my best.”

I.

There is something scary about letting ourselves go. It means that we will screw up, that we will relinquish the possibility of perfection. It means that we will say things we didn’t mean to say and express feelings that we can’t explain. It means that we will be onstage and not have complete control, that we won’t know what we’re going to play until we begin, until the bow is drawn across the strings.

While this spontaneous method might be frightening, it’s also an extremely valuable source of creativity. In fact, the act of letting go has inspired some of the most famous works of modern culture, from John Coltrane’s saxophone solos to Jackson Pollock’s drip paintings. It’s Miles Davis playing his trumpet on *Kind of Blue*—most of the album was recorded on the very first take—and Lenny Bruce inventing jokes at Carnegie Hall. Although this kind of creativity has always been defined by its secrecy, we are now beginning to understand how it happens.

The story begins in the brain. Charles Limb, a neuroscientist at Johns Hopkins University, has investigated the mental process underlying improvisation. Limb is a self-proclaimed music addict—he has a small recording studio near his office—and has long been obsessed with the fleshy substrate of creative performance. “How did Coltrane do it?” Limb asks. “How did he get up there onstage and improvise his music for an hour or sometimes more? Sure, a lot of musicians can throw out a creative little ditty

here and there, but to continually produce masterpiece after masterpiece is nothing short of remarkable. I wanted to know how that happened.”²

Although Limb’s experiment was simple in concept—he was going to watch jazz pianists improvise new tunes while in a brain scanner—it proved difficult to execute. That’s because the giant superconducting magnets in fMRI machines require absolute stillness of the body part being studied, which meant that Limb needed to design a custom keyboard that could be played while the pianists were lying down. (The setup involved an intricate system of angled mirrors, so the subjects could see their hands.) Each musician began by playing pieces that required no imagination, such as the C-major scale and a simple blues tune memorized in advance. But then came the creativity condition: the subject was told to improvise a new melody as she played along with a recorded jazz quartet.

While the subject was riffing on the keyboard, the scanner was monitoring minor shifts in brain activity. The scientists found that jazz improv relied on a carefully choreographed set of mental events. The process started with a surge of activity in the medial prefrontal cortex, an area at the front of the brain that is closely

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 2. *The birth of jazz improv is often traced back to Charles “Buddy” Bolden, an early-twentieth-century cornetist and one of the most popular musicians in New Orleans. In 1907, Bolden had a psychotic break, and he spent the rest of his life in a mental institution. (He was buried in an unmarked grave in 1930.) According to Dr. Sean Spence, a psychiatrist at the University of Sheffield, Bolden suffered from dementia praecox, an illness that was later classified as a variant of schizophrenia. Spence speculates that Bolden’s unrelenting “madness”—he was hospitalized after threatening to attack people in the street—was actually a crucial inspiration for his “madcap” musical improv. His disordered thoughts, combined with his inability to read music, allowed him to arrange notes in a new way. Subsequent studies have found a disconcerting correlation between success in jazz and mental illness, from the heroin addiction of Charlie Parker to the erratic moods of Thelonious Monk to the debilitating depression and phantom-limb pain of Cole Porter.*

associated with self-expression. (Limb refers to it as the “center of autobiography” in the brain.) This suggests that the musician was engaged in a kind of storytelling, searching for the notes that reflected her personal style.

At the same time, the scientists observed, there was a dramatic shift in a nearby circuit, the dorsolateral prefrontal cortex (DLPFC). While the DLPFC has many talents, it’s most closely associated with impulse control. This is the bit of neural matter that keeps each of us from making embarrassing confessions, or grabbing at food, or stealing from a store. In other words, it’s a neural restraint system, a set of handcuffs that the mind uses on itself.

What does self-control have to do with creative improvisation? Before a single note was played in the improv condition, each of the pianists exhibited a “deactivation” of the DLPFC, as the brain instantly silenced the circuit. (In contrast, this area remained active when the pianist played a memorized tune.) The musicians were inhibiting their inhibitions, slipping off those mental handcuffs. According to Limb, this allowed them to create new music without worrying about what they were creating. They were letting themselves go.

But unleashing the mind is not enough—successful improv requires a very particular kind of creative expression. After it slips off the handcuffs, the brain must still find something interesting to say. This is the generation phase of the improv process, in which performers unleash a flood of raw material. What’s so astonishing about this creative production, however, is that it’s not reckless or random. Instead, the spontaneously generated ideas are constrained by the particular rules of the form. The jazz pianists, for instance, needed to improvise in the right key and tempo and mode. Jackson Pollock had to drip the paint in a precise pattern

across the canvas. Or look at Yo-Yo Ma: his emotional release always fits the exacting requirements of the music. He sways, but he sways in perfect time. "I think the best way to perform is when your unconscious is fully available to you, but you're still a little conscious too," Ma says. "It's like when you're lying in bed in the early morning. I always have my best ideas then. And I think it's because I'm still half-asleep, listening to what my unconscious is telling me. But at the same time, I'm not in the midst of some crazy dream, because then it's just crazy. I guess it's a controlled kind of craziness. That's the ideal state for performance."

How does the brain find this liminal space? That was the question asked in a recent fMRI study by neuroscientists at Harvard in which twelve classically trained pianists were told to invent melodies. Unlike the Limb study, which compared brain activity during improv and memorized piano pieces, this experiment was designed to compare brain activity during different kinds of improv. (This would allow the scientists to detect the neural substrate shared by *every* form of spontaneous creativity, not just those bits of brain associated with particular types of music.) As expected, the various improv conditions—regardless of the musical genre—led to a surge of activity in a variety of neural areas, including the premotor cortex and the inferior frontal gyrus. The premotor activity is simply an echo of execution, as the new musical patterns are translated into bodily movements. The inferior frontal gyrus, however, is most closely associated with language and the production of speech. Why, then, is it so active when people compose on the spot? The scientists argue that expert musicians invent new melodies by relying on the same mental muscles used to create a sentence; every note is like a word. "Those bebop players play what sounds like seventy notes within a few seconds," says Aaron Berkowitz, the lead author on the Harvard

study. "There's no time to think of each individual note. They have to have some patterns in their toolbox."

Of course, the development of these patterns requires years of practice, which is why Berkowitz compares improvisation to the learning of a second language. At first, he says, it's all about the vocabulary words; students must memorize a dizzying number of nouns, adjectives, and verb conjugations. Likewise, musicians need to immerse themselves in the art, internalizing the intricacies of Shostakovich or Coltrane or Hendrix. After musicians have studied for years, however, the process of articulation starts to become automatic—the language student doesn't need to contemplate her verb charts before speaking, just as the musician can play without worrying about the movement of his fingers. It's only at this point, *after* expertise has been achieved, that improvisation can take place. When the new music is needed, the notes are simply there, waiting to be expressed. It looks easy because they have already worked so hard.

These cortical machinations reveal the wonder of improvisation, the mirrors and wire behind this magic trick of creativity. They capture a mind able to selectively silence that which keeps us silent. And then, just when we've found the courage to create something new, the brain surprises us with a perfectly tuned burst of expression. This is what we sound like when nothing is holding us back.

2.

Clay Marzo has been waiting all morning for waves. He's standing with his surfboard next to a NO TRESPASSING sign on the edge of a pineapple field, looking down at a remote beach on the northwest shore of Maui. There are no tourists here because there is no sand, just a field of jagged lava rocks and a private dirt road. The