My Year of Memory and Mathematics

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My Year of Memory and Mathematics

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Synopsis

I relive one stream of my state of mind over the pandemic year of 2020.

Keywords: pandemic, memory.

March 2020.

I wandered emptied halls at my university. It was as though I’d been reading head down on a bench in a crowded park, then looked up to see that everyone had vanished, like an episode of The Twilight Zone come to life. Sudden isolation shock, free floating disequilibrium.

COVID-19 infections exploded, stories of overcrowded emergency rooms, of underestimated deaths, happening as yet to no one I knew, but rumbling like the advance of distant thunder, perturbing us all, portending.

Quarantine coerced me inward, surfacing distant memories of being alone . . . my seventeenth year . . .

Every night, after our cramped Phoenix house of nine subsided into silence, outside my narrow, plywood-walled “room” (constructed by my father in a corner of the living room, for me, the oldest child), I’d sit reading in an easy chair within an island of light. (Because inside that “room,” jammed as it was with bed, desk, bookshelf, chair, and light pole, reading came harder.)
Immersed elsewhere, gone from the house in my head, wherever the book was taking me, there was no family to escape. I could concentrate, alone.

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By my graduating semester at an all-boy Jesuit high school, I always chose to eat lunch alone.

Midday I walked west, to the other side of our classroom buildings, crossing over the manicured grass lawn fronting the school, to a towering palm tree farthest away. I sat on the ground with my back pressed into the rough bark, facing away from the school, opened my bag lunch and ate in silence. As nearly the youngest in my class, and among the tiny minority of lower-middle-class students in school with the children of professionals, some wealthy, some
in fact super-rich, I always felt myself an anomaly, not understanding the social rules, wearing the right clothes, or speaking the language. So, I just completed my work, and otherwise slipped into the crowd most days. Eating lunch alone relieved the omnipresent, social strain. Solitude with a purpose, my necessary period of peace.

None of my immediate circle or family contracted COVID-19 or were first responders in the hot emergency rooms and coughing wards of the ventilated. But out of our family past, a nearly forgotten story of my maternal grandfather drifted forth . . .

In 1893, Eugene St. Laurent was born in St. Guillaume, Quebec. When he was eleven, his father succumbed to the “fever” known as “le mal des États-Unis” (that United States sickness), and transplanted the family to Woonsocket, Rhode Island. A decade later, in December 1915, Eugene’s Quebecois aunt, in her holiday letter, wondered about him, “... est-il donc parti pour la guerre?” (is he then gone to war?) It would be five months after the U.S. entered World War I, that Eugene did enlist, joining the Regular Army as a Private on September 18, 1917; see Figure 2.

His enlistment record entry, “Drug clerk (student)” under “Knowledge of any vocation”, swept him into the Medical Department. Following less than two months at the Medical Officers Training Camp in Fort Harrison, Indiana, he found himself assigned to a new Base Hospital at Camp Greene, North Carolina. The new year brought promotion to Private First Class, and in June, his Naturalization Certificate, a benefit he’d counted on as an immigrant.

Late that year of 1918, the infamous influenza pandemic struck. Numbers of sick and wounded at Camp Greene dramatically increased, from 1,122 in August to an incredible 4,256 in October, harried by a death rate of six percent, most of them influenza patients aged twenty to forty [4, page 674]. Eugene was twenty-five.
Descriptions of suffering soldiers were striking and disturbing.

At one camp a medical officer noted how often a victim’s face turned “purplish, reddish, ... ashen” in color, “brilliant pink or red” fluids ... brought up from the respiratory tract ... autopsy reports noting lungs resembling red currant jelly. [2, page 164]

My future grandfather survived and lived another forty-six years, dying when I was twelve. I only learned of his story long after. I wished now I knew how he’d coped.

Every daily newscast led with COVID-19 statistics and graphs, as I stumbled ahead suddenly teaching university mathematics synchronously online, my students and I feeling compressed in quarantine. Memories of stressors in my past stirred into daylight, triggered by my grandfather’s military tale ...
As 1969 came to a close, I turned eighteen. The military draft was still in effect, as it had been since 1940. My Selective Service draft classification starting January 1970 was II-S, the standard student deferment, because I attended university in California full-time. If I retained that deferment, after graduation years later, my classification would revert to the default 1-A, meaning “available for military service.” Having watched unsettling daily Vietnam war dispatches on television for years, I confess I met the prospect of being called up with trepidation.

The rules, however, had just changed dramatically back in November, when President Nixon signed an Executive Order establishing “a random selection sequence for induction,” meaning a draft lottery to be held each year going forward. Any man who then chose to maintain 1-A status for an entire year, and was not called up, would be permanently excused from mandatory military service.

I made that choice.

And there was more, a mathematical story as it turned out. The initial lottery procedure was flawed. Birthdays placed into separate capsules were loaded into a drum, then drawn one by one in sequence, the enclosed day assigned that sequence number. After the 1970 drawing, birthdays appearing later in the year seemed to have received unusually many low sequence numbers. My own late December birthday received the low number three. Had that been my year, I’d have been shipped to Vietnam. A statistical analysis determined that Selective Service officials had failed to mix the capsules in the drum sufficiently well to guarantee a fair draw. So, for the 1971 drawing (my year), two drums were used, each containing 366 capsules. As a capsule containing a day was drawn from one drum, at the same time a capsule containing a sequence number was drawn from the other drum. That birthday was assigned the chosen sequence number. So, mine was the first year the draft lottery was fair [3].

My birthday received the sequence number 192. A year of stressful waiting loomed.
As this uncomfortable memory retreated, I began to long for what we, teachers and students, suddenly now missed in our isolation . . .

Before the pandemic, students arriving for office hours crowded through my open door, flopped onto two chairs, stood, or sat down on the floor. Watching them write and speak mathematics at my chalkboard, I learned what I could not learn in any other way: The order in which they wrote different parts of expressions; whether they word-wrapped a string of inequalities or equals signs; whether they realized statements to prove were sentences, composed of shorter sentences, called hypotheses and conclusions; whether informal phrasings naively replaced precise definitions. As well, did they: Begin by writing hypotheses? Note what they want to prove? Indicate a proof technique? Start that technique correctly, the logic clear? Switch, if needed? And perhaps most importantly, did they miss the forest for the trees, letting symbolic precision precede an idea for a proof, falling down the rabbit hole of fussy details before the broad strokes of an argument were even brushed out?

I missed that interplay. I missed asking the writing student to stop, and the non-writing student(s) to comment, emboldened to express any confusion about what the writing student had written, a greater impact than if mentioned by me; the give and take of body language, gesture, glances of confusion; teaching them to redirect frustration into constructive work; how overwhelmingly they preferred to immediately hear from me when an argument failed, “The first two lines are on track, but the last line is wrong,” as long as I helped them clamber out of that current ravine of failure; how being wrong became procedure, not a reflection on their ability, and making errors an irritating, but personally neutral fact of life.

I missed the good humor, laughing at ourselves, the self-deprecating “Well, that doesn’t work!” easing the pain of stumbles and recoveries; another student there to add, “I would have made the same mistake;” a community of struggle. My student, Shelby, was a regular. After graduating, she recalled:

Dr. [D] also made office hours different than other professors.
When you come to him with questions about homework or a
topic from class, he makes sure you leave the office having learned something instead of just the answer to a problem. I can attest to the many times I got frustrated when [he] made me stand up at the board in his office and walk him through each small detail of a single problem until I finally worked, mostly on my own, out why I was confused. This method was used for whoever came into his office and for whatever course the question came from. This was yet another way [he] let us practice communication and collaboration in courses where we would normally not get to do so. [1]

I missed the physicality and emotional heft of these events, the flow and nuance, the energy of a group in a room, the pleasant exhaustion at the end of a work session like resting on a bench after a long jog, as students pocketed cellphones, erased the board, chatted with each other, and lifted up their ubiquitous backpacks to go.

I missed welcoming them into the space of systematic thinking that is the mathematical way, a space they too could inhabit shoulder to shoulder with me, a space they could explore once it was shown to them, a space otherwise difficult for novices to envision or pry their way into, bumping into trees, missing the forest.

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Fond memories of those intense teaching moments lift my spirit. I’m adapting. I now ask my students to record themselves explaining their solution to a question. I hear their voices and capture some of that lost office hour energy.

For myself, I savor the primal splash of sunlight on my skin, when I remind myself to step outdoors. I warm to the precision of my mathematics lectures, not only written out live with the care being seated and alone allows, but now video-recorded and PDF-preserved to be refined at leisure. I revel in creating more thoughtful, searching assessments, absorbing the advice of a vast online universe of mathematical colleagues.

In short, I’m beginning again to glimpse joy.
Figure 3: The author, fall 2019. Photo by Brandon Parigo, UMKC.

References


Author bio:

Today, I’m a Teaching Professor of Mathematics at the University of Missouri - Kansas City (UMKC). But when my professional life began in fall 1984, holding only a master’s degree, I was hired as an unranked, non-regular, non-tenure-track (three negations!) visiting instructor. For nineteen years I taught Calculus I and II in an early morning, off campus, UMKC program I co-ran for gifted and talented high school seniors, as well as a single course on the main campus. I earned a Ph.D. in Mathematics, then when that program terminated, after an agonizing month wondering whether I still had a job, moved to that campus. From the start, mathematical exposition seems to have manifested as the central thread of my career, as I created over fifty original expository talks; coordinated a series of invited expository talks for twenty-three years; mentored dozens of students to give such talks; recorded entire College Algebra and Calculus I courses (over seventy hours) posted on UMKC’s YouTube channel; and started, twenty-one years ago, an annual writing intensive history of mathematics course that I very much enjoy, out of which my students have produced a couple dozen expository mathematics publications and won over twenty writing awards, some local, some national (HOM SIGMAA). Meanwhile, I taught twenty-six different undergraduate courses and four graduate courses. I’m still non-regular and non-tenure-track (only two negations), teaching four different classes each fall and spring semester, mostly at the junior and senior level. As I wrap up my thirty-seventh year here, this last one teaching entirely online from home, more than ever I value vivid exposition.