

FLOSSING

with

CAJAL

a novel



OSSAMA KHALAF

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To my father,
and to all guardians of knowledge,
past, present, and future.

PROLOGUE

*They say a butterfly flapping its wings in Cairo
can cause a storm in Sydney. I used to think it was
just mathematical poetry. Now I know better.*

The helmet felt heavier than it looked.

"Remember, focus completely on two things," V instructed, his voice becoming methodical. "First, Cajal himself. Picture everything you know about him. Second, where you want to meet him."

Heart hammering against my ribs. I took in the basement one last time. Monitors casting blue shadows across concrete walls. Fiber optic cables snaking like luminescent veins through the darkness.

Twenty-one days. That's all that remained between me and academic exile.

I closed my eyes. The electrodes tingled against my scalp. Somewhere in this technological maze, a scientific

genius waited to be awakened. Or nothing but failure and wasted hope.

"Perfect," V murmured, his Latvian accent thickening. "Neural patterns are strong and clear. Beginning calibration phase now."

My throat tightened. I conjured Cajal's penetrating gaze from those sepia photographs, his distinguished beard, his formal attire of a nineteenth-century academic. Would he understand what drove me to this precipice?

V's voice came from very far away. "Initiating simulation in three..."

"Two..."

"One..."

The world dissolved.

ACT 1

THE ROT

ADAM

Earlier that day

I jerked awake to the sound of my own snoring, a thin line of drool connecting my cheek to Cajal's 1888 paper on the cerebellum.

Blinking against the pale morning light filtering through my narrow window, I peeled my face from the page with a groan.

I squinted at my watch. 6:12.

Fell asleep at the desk again.

My neck protested as I stretched, vertebrae popping like bubble wrap.

"Perfect," I muttered, examining the damp smudge I'd left on Cajal's intricate drawing of Purkinje cells. I rubbed away the paper marks from my cheek.

I had fallen asleep contemplating the father of neuroscience, and now I'd literally drooled on his legacy.

The studio apartment materialized around me in all its seventeen-square-meter glory. The single room contained my entire existence with everything within

arm's reach of everything else. *Efficient, and perfect for a student*, the realtor had called it. *What she meant was: all you can afford on a PhD stipend.*

The kitchenette occupied one wall, the bed another, and the bathroom was a marvel of spatial engineering. I could shower, brush my teeth, and nearly touch all four walls simultaneously.

I reached for my coffee mug, found it empty. I shuffled the seven steps to my kitchenette to prepare another cup.

My moka pot waited on the induction plate like an old friend. I filled the bottom chamber with water, tamped fresh grounds into the filter basket, and assembled the aluminum pieces with the precise movements of someone who'd performed this ritual thousands of times.

Waiting for the coffee, I leaned against the narrow ledge beneath my window. A vertical strip maybe fifty centimeters wide, designed by someone who clearly believed natural light was a luxury. From this angle, I could see my slice of Zurich: three buildings, a corner of the Limmat River, and a construction crane that had been frozen in the same position for a few weeks. I'd been tracking it.

Outside, my neighborhood was waking up with Swiss punctuality. The same delivery truck passed at 6:23, the same elderly woman walked her Schnauzer at 6:25. I had been in Switzerland long enough to

set my watch by the neighbors' routines, though I'd never managed to sync my own life to their precision. The Swiss existed in a different temporal dimension, one where deadlines weren't suggestions and time management wasn't a foreign concept.

The familiar gurgle as coffee began percolating provided the morning's first comfort. My phone buzzed: "THESIS DEADLINE REMINDER - 21 DAYS REMAINING."

Five hundred and four hours to save six years of graduate school.

I did the math automatically. The kind of calculation that becomes second nature when you're living on borrowed time.

The moka pot hissed its completion as my stomach tightened. I grabbed a mug with a faded logo from some symposium I couldn't recall attending. While pouring the coffee, my phone lit up with a notification from my mother I'd missed yesterday.

"How are you Habibi? Did you eat something other than coffee today?"

The timestamp showed she'd sent it fourteen hours ago. Guilt pricked at me. My mom's messages were the one thing I tried not to procrastinate on. After my father died, she'd returned to Cairo while I stayed in Zurich. Our relationship had become a series of text messages and occasional video calls, each of us pretending we weren't lonely.

I typed back:

"Sorry for the late reply. I'm fine. Made actual pasta yesterday, not just from a packet. How's the new apartment?"

Liar. The pasta had been microwaved leftovers from the department lunch three days ago.

I sipped my coffee, letting the bitter liquid jump-start my brain. Back at my desk, I surveyed the battlefield. Coffee rings overlapped like Olympic symbols. My headphones hung from a small statue of Isis, one of Dad's teaching replicas. He'd treasured it. I'd given it a job. Beyond it, three distinct archaeological layers had formed over the months: journal articles at the bottom, my notes in the middle, and the chaos of sticky notes on top.

Dad would have appreciated the comparison. He'd always said that understanding layers was the key to understanding time itself.

The memory of him kneeling in Egyptian sand, carefully brushing dust from pottery fragments, flashed through my mind. Ten years gone, and still these moments ambushed me without warning.

Thesis. Deadline. Focus, please!

I returned to Cajal's paper, the one I'd fallen asleep reading. While skimming through it, something felt off. I had read this paper at least a dozen times before. It was foundational to my thesis. But now, looking closely at

the yellowed photocopy, I couldn't shake the feeling that something was missing.

I scanned Cajal's elegant descriptions of neurons. The text was all there, the beautiful hand-drawn illustrations intact, but the methods section seemed thinner somehow. Less detailed.

I distinctly remembered Cajal describing a specific variation of the Golgi staining technique that had allowed him to visualize nerve cells more clearly.

But that paragraph wasn't there.

I rifled through my notes, finding where I had previously cited this very technique. My handwriting stared back at me, describing a procedure that was no longer in the source material.

Maybe I'm misremembering. Sleep deprivation does weird things to memory. Basic neuroscience.

But this wasn't the first time I had experienced this sensation. Last week, while reviewing Golgi's original papers, I had noticed similar gaps. Technical details that I was certain had been there before. Details I'd built significant portions of my thesis around.

I sipped my coffee, its bitterness matching my mood. "This is what happens when you leave experimental work for historical analysis," I sighed. "You start hallucinating details in century-old papers."

I had started my PhD studying living brains, then COVID-19 hit and forced me into historical research

instead. From studying neurons to studying the people who first studied neurons.

You didn't just switch topics. You switched centuries. Now you're paying for it.

My phone vibrated with a calendar alert: "Ask Goodman for an extension at today's meeting." The screen glared at me accusingly, a digital reminder of my impending doom. My jaw clenched as I realized I'd completely forgotten about the meeting with my supervisor. I needed to rush to the lab to prepare before facing Professor Goodman with his unblinking stare of judgment.

I grabbed my backpack, stuffed the scattered notes inside, and downed the last of my coffee. The mug clinked against the desk, revealing a tiny piece missing in the rim that I hadn't seen earlier.

Strange. I never chip things.

I stared at the crack longer than necessary, my brain trying to assign significance to normal wear and tear. But lately, small inconsistencies had been bothering me more than they should. Missing references in papers I had read dozens of times, citations that led nowhere.

Stress. Definitely just stress.

I locked my apartment with the familiar triple-check: doorknob, deadbolt, one more tug just to be sure.

The morning air hit my face as I jogged to catch the approaching tram, sliding through the doors just before they closed with a pneumatic hiss.

The familiar route to the university unfolded outside the window. The same buildings, the same streets, the same faces buried in phones or staring vacantly ahead. I had made this journey so many times I could measure it in heartbeats.

I caught my reflection in the window glass. Dark circles under darker eyes, three-day stubble, hair reaching that awkward length where the curls took on a life of their own, springing in all directions. The face of a man trapped between worlds. Not quite a student anymore, not quite a doctor yet.

Academic purgatory.

The tram lurched to a stop at the university station. I joined the stream of students and faculty flowing toward the neuroscience building, my backpack heavy with notes and anxiety. In a matter of minutes, I'd be sitting across from Professor Goodman, requesting yet another extension. I could only hope this meeting wouldn't end as disastrously as I anticipated.

One more day in the life of Adam Kamel, perpetual graduate student. Maybe today would be different.

Probably not.

HABITAT

I stepped into the lab, greeted by the familiar symphony of equipment hums. Centrifuges whirred in their corner while the steady beep-beep of PCR machines counted thermal cycles. The antiseptic smell of ethanol mingled with the subtler scent of cell culture media from the incubator room.

Every surface gleamed with Marguerite's obsessive cleanliness. As a tenured lab manager who treated the lab like her private property, she loved pipettes arranged in perfect ascending order, waste containers precisely aligned with the bench edge, not a single paper out of place.

After six years, this laboratory felt more like home than my cramped studio apartment. I'd spent more hours beneath these fluorescent lights than anywhere else, including my own bed. I could navigate between equipment blindfolded. The place had imprinted on my very DNA.

Marguerite stood at her bench, back perfectly straight as she pipetted with flawless precision. Her silver bun didn't dare release a single strand as she worked. The tip of her tongue peeked from the corner of her mouth, the only sign of concentration breaking through her composed exterior.

"Bonjour, Adam," she said, glancing up briefly before returning to her work. "You are looking... 'ow do you say... like something ze cat dragged in, non?" Her distinct French accent always transported me straight to a Pink Panther movie with Inspector Clouseau.

"Morning, Maggie."

She winced slightly at the nickname but continued her methodical pipetting. Each movement was performed with the same meticulous care she'd shown for the past three decades. Aspirate, dispense, eject, new tip. Her wire-rimmed glasses caught the light as she tilted her head to check her work.

"I am placing ze orders zis afternoon," she announced, straightening a row of PCR tubes that already formed a perfect line. "Do you need any reagents?"

I glanced at my bench space, the one area of the lab Marguerite couldn't maintain in museum-quality condition despite her valiant efforts. Empty boxes and dwindling reagent stocks testified to my procrastination in lab management.

"No thanks, Maggie. I'm good." *All I need is an extension to finish my thesis.*

"Très bien." Her tone suggested she'd expected nothing less from my chaotic approach to laboratory supplies.

As I walked past her station toward my desk, Marguerite called after me, her French accent lilting over my name. "Oh, Adam! Au fait, Amy was looking for you yesterday. She was..." She paused, searching for the right English wording, then continued, "quite anxious."

Heat crept up my neck. Amy Gadallah, my colleague who joined the lab a few years back. A name my brain couldn't help but interpret as AMYGDALA, permanently linking her with the brain's fear center. Fitting, since she radiated anxiety like a heater radiates warmth.

"Did she say what she wanted?"

Marguerite shrugged with Gallic eloquence. "Non. But she came twice. Ze second time, she left a note."

I nodded my thanks and continued to my desk, where a folded piece of paper sat propped against my monitor. Amy's handwriting was predictably anxious. She'd pressed hard enough into the paper to leave indentations on the desk beneath. Several words were crossed out and rewritten.

I tucked the note into my pocket without reading it. Whatever fresh catastrophe occupied Amy's mind

would have to wait until after my meeting with Goodman.

I pulled my laptop from my bag and connected it to the external monitor. The screen flickered to life, displaying the same Cajal paper that had been haunting me since morning. The missing details seemed to mock me from the page. I minimized the window and checked my email to find the little envelope icon bouncing cheerfully. Five new emails since yesterday. I opened the first one.

From: b.goodman@polytechnic.ch.edu

Subject: THESIS STATUS FOR TODAY'S MEETING

Body: [empty]

Be Good, man! The irony wasn't lost on me. Professor Ben Goodman, whose email username appeared to literally instruct him to behave decently, yet he stood as possibly the most insufferable person I'd ever met in academia. Out of an entire department full of caring faculty, I somehow landed with him overseeing my thesis. The law of attraction showing its cruelest side.

For Goodman, why bother writing an actual email when you could just scream your demands in the subject line and let everyone else figure out the details. The man only knew how to communicate through angry emails and barely hidden frustration.

I scanned the other emails. University deadline reminders, conference announcements for events I

couldn't afford, LinkedIn requests from classmates now making six figures while I survived on instant ramen. As I was about to close my inbox, I received another Goodman special.

From: b.goodman@polytechnic.ch.edu

Subject: ALSO NEED BIBLIOGRAPHY UPDATE FORMATTED CORRECTLY THIS TIME

Body: [empty]

Masterpiece of efficient rudeness. Classic Goodman.

I felt a hand on my shoulder and turned to find Amy standing behind me.

"Finally found you," she said.

Amy hovered at my shoulder, her presence a physical manifestation of anxiety. Her hair was pulled back in what had started as a neat ponytail but now resembled a fraying rope. Dark circles shadowed her eyes, rivaling my own sleep-deprived raccoon look.

"Did you get my note?" Her fingers twisted the hem of her lab coat, stretching the fabric into permanent wrinkles. "I left it right here. I made sure it was perfectly visible. I even aligned it with the edge of your monitor."

Of course, you did. The Marguerite effect spreads like a contagion in this lab.

"Just found it," I said, patting my pocket. "Haven't had a chance to read it yet. I've got Goodman breathing down my neck about my thesis."

Her eyes widened. "Oh god, I'm sorry. I shouldn't have interrupted. It's just that—" She suddenly stopped, took a deep breath that seemed to do nothing for her anxiety levels, and continued, "I need help with my data analysis. The Western diet experiment with my AD mice?"

I vaguely recalled her project. She'd been feeding McDonald's-like food to mice with Alzheimer's, tracking how quickly their little mouse brains deteriorated.

"The correlation between processed food consumption and cognitive decline is showing up in the maze tests, but my statistical analysis is..." Her voice trailed off as she made her fingers burst outward from her temple, mimicking a small explosion in her brain.

I stared at her, thinking how fortunate her mice actually were. Three square meals a day, climate-controlled housing, and dedicated healthcare. Plus, they got euthanized when they'd had enough. Countless PhD students would kill for that deal. Luxury accommodations with a guaranteed expiration date!

"I tried running it through SPSS, but I keep getting these error messages, and Professor Goodman said if I don't have preliminary results by Friday's lab meeting, he might have to reconsider my PhD project, and you know what that means." Her words tumbled out faster now, a verbal avalanche of anxiety.

Amy had metamorphosed into Amygdala in full fight-or-flight mode.

I definitely can't handle this right now.

"Amy, I've got Goodman in fifteen minutes. Can we talk about this afterward?"

She froze, then nodded so rapidly I worried for her neck. "Of course. Yes. Sorry. Absolutely. I'll just..." She backed away, bumping into an empty chair. "I'll be at my desk. Whenever you're free. No rush. Well, some rush because Friday, but—"

"I'll find you after my meeting," I interrupted, already dreading adding her statistical crisis to my mounting problems.

As Amy retreated to her desk, I quickly gathered my notes, bracing myself for what was sure to be another absolutely delightful exchange with Goodman.

BE GOOD, MAN!

I stood outside my supervisor's office, mentally cycling through my opening arguments for an extension. I looked up at the polished nameplate: "Prof. Benjamin Goodman, Ph.D., Department Head." Through the frosted glass, I could see his silhouette. My fist raised, hesitant to knock, delaying the inevitable.

Just get it over with, Adam. The worst he can say is no.

Actually, the worst he can say is no while staring unblinkingly into your soul for forty-five uncomfortable seconds.

I knocked three times. "Come in," Goodman's voice sliced through the door.

I took a deep breath and stepped inside.

The office hadn't changed since my last visit. The space felt more like a museum exhibit titled *Academic Success* than a working professor's office. Immaculate bookshelves displaying pristine first editions of neuroscience classics, awards arranged at precise angles, and framed journal covers where his name appeared

conspicuously often. I'd heard whispers that undergrads played "Spot the Actual Goodman Contribution" as a drinking game when reviewing his publications.

He sat behind his massive oak desk, a fortress separating him from the plebeian concerns of graduate students. The harsh fluorescent light reflected off his balding head as he continued typing for several seconds before acknowledging my presence.

"Adam. Sit." He gestured vaguely toward the chair across from him, the same uncomfortable wooden seat that had witnessed countless student breakdowns.

"You're late," he said without bothering to look up from his screen, his fingers tapping on his keyboard.

I'm actually two minutes early, but sure, let's start with fictional tardiness.

"Sorry, Professor. Thank you for making time to see me." I settled into the chair, placing my folder of evidence on my lap. "I wanted to discuss my thesis deadline."

His fingers stopped mid-keystroke. He looked up at me with that stare of his that always made me feel like a specimen under a microscope.

"Another extension?" The corner of his mouth curled upward. "You've had five years, Adam. Two extensions already. That's almost six years total."

"I understand, but I've encountered some unexpected complications with the historical analysis." I

opened my folder, pulling out my evidence to show him. "Here, there are inconsistencies—"

"Have you discussed this with Mariana?"

"No, I didn't talk about that with Dr. Carvalho. I wanted to speak with you first." I shifted uncomfortably in the hard chair.

I should have gone to Mariana first. She would have at least listened without that predatory stare. Probably wouldn't have made me feel like I'm wasting her oxygen.

"Interesting choice." He leaned back, forming a steeple with his fingers. "You know that Mariana handles the day-to-day supervisory duties for your project, correct? I'm more of an advisor with an oversight role."

"I thought since you're the main supervisor, I should—"

"Let me be clear." He cut me off again. "You've had five years and two extensions already. Your shift from practical work to historical analysis was your choice."

"It wasn't exactly a choice," I countered. "The COVID lockdown destroyed three years of my experimental work. All my neural stem cell cultures died in the incubators when we couldn't access the lab. The mouse colonies were euthanized."

For a moment, I was back there. March 2020, watching helplessly through a video call as lab technicians disposed of my meticulously bred transgenic mice, each representing months of work and thousands of research francs.

"Everyone faced challenges during that time," Goodman said dismissively. "Science adapts. You chose to switch to studying Cajal and his contemporaries rather than designing new experiments."

Because you refused to extend funding for new mouse colonies. You said the switch to historical analysis would be more practical.

"The historical approach made sense given the constraints," I said carefully. "But now I'm finding inconsistencies in the foundational papers. Sections on methodology that I previously cited are incomplete or missing entirely."

The office phone started ringing. He picked it up, held it to his ear for a few seconds, then hung up without speaking.

He fixed me with a gaze that screamed complete indifference. "Memory is fallible, Adam. Especially under pressure." He turned back to his computer. "The deadline stands. Three weeks."

"But Professor Goodman, these aren't memory issues. I have photocopies with highlighted sections that no longer appear in the originals."

"Then your photocopies were from different editions." He didn't look up from his screen. "This sounds like disorganization, not a research crisis."

An email notification pinged on his computer. He immediately began typing, effectively dismissing me while I was still sitting there.

Six years of my academic existence hang in the balance, and he can't even pretend to care for five minutes.

He glanced at his watch. "I have another meeting. Three weeks, Adam. Not a single day more."

As I gathered my papers to leave his office, I noticed a framed photo on the wall I hadn't seen before. It showed Goodman shaking hands with the university president, both smiling broadly. The plaque beneath it read: "Department of Neuroscience Excellence Award."

For excellence in making students question their life choices, no doubt.



I dragged myself back to the lab. The hallway stretched endlessly, each step bringing me closer to the realization that my academic career was balanced on a knife-edge.

I reached the lab and spotted Mariana at her desk, poring over data printouts with her characteristic focus. Her long, dark brown hair was pulled into a bun with a pencil, a habit of hers when juggling between dry lab and wet lab activities.

Unlike Goodman's sterile office, Mariana's space felt lived-in. Academic journals were stacked in neat piles beside a small Portuguese flag and family photos. A tin of pastries she regularly brought to share with students sat on the corner of her desk.

"Adam, o meu querido! Amy told me you had a meeting with Ben today. How did it go?" She looked up, her warm eyes immediately registering my distress. "Ah, not well, I see. Come, and have a seat."

I collapsed into a chair beside her, dropping my folder on her desk. "He refused the extension. Three weeks or nothing."

Mariana sighed, reaching for her thermos. "That man! Let me pour you some proper coffee that I brought from home, not that rubbish we have in the break room. Then you will tell me everything."

She poured dark, aromatic coffee into two small cups. The rich scent filled the air, momentarily distracting me from my impending academic doom.

"In Portugal, we never discuss problems without coffee," she said, handing me a cup. "Now, what exactly happened?"

I explained my meeting with Goodman, his dismissal of the discrepancies I'd found, and his ultimatum. Mariana listened attentively, her expression growing increasingly concerned.

"This is troubling," she said when I finished. "Not just Ben's behavior, which is unfortunately typical, but these inconsistencies you're finding."

"You believe me?" I couldn't keep the surprise from my voice.

"Of course, I believe you, Adam. You are one of my most meticulous students." She tapped my folder. "May I see your notes?"

I opened it, showing her my highlighted photocopies and the corresponding originals with missing sections. "Here's Cajal's paper on the cerebellum. The methodology section I cited last year in my annual report had detailed descriptions of the staining techniques he used. Now half those details are gone from the original source."

Mariana examined the papers carefully, her brow furrowed. "This is very strange. These aren't different editions?"

"No. Same journal, same volume, same publication date. I checked multiple times." I scrolled through my phone, pulling up more evidence. "It's not just Cajal's paper. I found the same issues in Golgi's paper on staining techniques and Helmholtz's visual perception paper. My notes and cloud photos prove it."

She nodded slowly. "I've known you long enough, Adam. You're not careless, and you're certainly not imagining things."

The relief of being believed nearly overwhelmed me. "So, what do I do? Goodman thinks I'm making excuses."

"Ben Goodman cares about two things only. Publications with his name on and maintaining his

power in the department." She leaned forward, lowering her voice. "But I care about the integrity of science and the wellbeing of my students."

"I truly appreciate that, Mariana, but I can't complete a proper historical analysis if the historical sources keep changing."

She was silent for a moment before her eyes lit up. "Perhaps that becomes part of your thesis."

"What do you mean?"

"Document these changes. Compare your notes with the current versions. Instead of just analyzing historical methodologies, analyze how our understanding of them is shifting."

"You think that could work?"

"It could. It would make for compelling work, a meta-analysis examining how scientific knowledge is preserved," she said. "And it might explain what's happening to those texts."

For the first time that day, I felt a flicker of hope. "Goodman will hate it."

"Probably," Mariana said, refilling our coffee cups. "But he'll accept any considerable solution rather than admit he failed to supervise you properly."

I took a sip of the strong coffee, feeling my mind begin to clear. "Thank you, Mariana. For believing me. For helping."

"That's what real mentors do, Adam." She squeezed my hand briefly. "Now, let's make a plan for these three weeks. We will not let good science disappear without a fight."

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NOW

KNOWLEDGE IS
DISAPPEARING.
TIME IS RUNNING OUT.

ABOUT THE AUTHOR



Ossama Khalaf is a neuroscientist who hung up his lab coat to pick up the pen. His research has taken him across six countries on four different continents. After earning his PhD from Switzerland's Brain Mind Institute at EPFL, he wrote *Focused Mind* to help people reclaim their attention in an age of distraction.

Now, Ossama is channeling his academic experience into literary fiction. *Flossing with Cajal*, his debut novel, follows a PhD student facing a mind-boggling crisis

when knowledge starts mysteriously vanishing, a story born from his own years in neuroscience labs.

In his writings, Ossama brings scientific curiosity and storytelling passion to explore what makes us human.

When not writing, Ossama can be found hiking or pondering life's big questions.

FROM THE AUTHOR

Thank you for taking this journey with Adam.

If you enjoyed reading *Flossing with Cajal*, please consider leaving a review on **Amazon** or **Goodreads**. This is how other readers discover stories like Adam's. Even a single sentence helps more than you might imagine. I read every review and am genuinely grateful you spent time in this world I created.

Future stories are already brewing. If you'd like to know when the next one arrives, connect with me on social media @**OssamaKhalaf** or visit my website: **ossamakhalaf.com**

Thank you for reading.

— Ossama