



LOVE on the BRAIN



ALI HAZELWOOD



SPHERE



S P H E R E

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THE HABENULA: DISAPPOINTMENT

HERE'S MY FAVORITE piece of trivia in the whole world: Dr. Marie Skłodowska-Curie showed up to her wedding ceremony wearing her lab gown.

It's actually a pretty cool story: a scientist friend hooked her up with Pierre Curie. They awkwardly admitted to having read each other's papers, flirted over beakers full of liquid uranium, and he proposed within the year. But Marie was only meant to be in France to get her degree, and reluctantly rejected him to return to Poland.

Womp womp.

Enter the University of Krakow, villain and unintentional cupid of this story, which denied Marie a faculty position because she was a woman (very classy, U of K). Dick move, I know, but it had the fortunate side-effect of pushing Marie right back into Pierre's loving, not-yet-radioactive arms. Those two beautiful nerds married in 1895,

and Marie, who wasn't exactly making bank at the time, bought herself a wedding dress that was comfortable enough to use in the lab every day. My girl was nothing if not pragmatic.

Of course, this story becomes significantly less cool if you fast forward ten years or so, when Pierre got himself run over by a carriage and left Marie and their two daughters alone in the world. Zoom into 1906, and that's where you'll find the real moral of this tale: trusting people to stick around is a bad idea. One way or another they'll end up gone. Maybe they'll slip on the Rue Dauphine on a rainy morning and get their skull crushed by a horse-drawn cart. Maybe they'll be kidnapped by aliens and vanish into the vastness of space. Or maybe they'll have sex with your best friend six months before you're due to get married, forcing you to call off the wedding and lose tons of cash in security deposits.

The sky's the limit, really.

One might say, then, that U of K is only a minor villain. Don't get me wrong: I love picturing Dr. Curie waltzing back to Krakow *Pretty Woman*-style, wearing her wedding-slash-lab gown, brandishing her two Nobel Prize medals, and yelling, "Big Mistake. Big. *Huge*." But the real villain, the one that had Marie crying and staring at the ceiling in the late hours of the night, is loss. Grief. The intrinsic transience of human relationships. The real villain is love: an unstable isotope, constantly undergoing spontaneous nuclear decay.

And it will forever go unpunished.

Do you know what's reliable, instead? What never, *ever* abandoned Dr. Curie in all her years? Her curiosity. Her discoveries. Her accomplishments.

Science. *Science* is where it's at.

Which is why when NASA notifies me—*Me! Bee Königswasser!*—that I've been chosen as lead investigator of BLINK, one of their

most prestigious neuroengineering research projects, I screech. I screech loudly and joyously in my minuscule, windowless office on the Bethesda campus of the National Institute of Health. I screech about the amazing performance-enhancing technology I'm going to get to build for none other than NASA astronauts, and then I remember that the walls are toilet-paper thin, and that my left neighbor once filed a formal complaint against me for listening to nineties female alt-rock without headphones. So I press the back of my hand to my mouth, bite into it, and jump up and down as silently as possible while elation explodes inside me.

I feel just like I imagine Dr. Curie must have when she was finally allowed to enroll at the University of Paris in late 1891: as though a world of (preferably non-radioactive) scientific discoveries is finally within grasping distance. It is, by far, the most momentous day of my life, and kicks off a *phenomenal* weekend of celebrations. Highlights are:

- I tell the news to my three favorite colleagues, and we go out to our usual bar, guzzle several rounds of lemon drops, and take turns making hilarious impressions of that time Trevor, our ugly middle-aged boss, asked us not to fall in love with him. (Academic men tend to harbor many delusions—except for Pierre Curie, of course. Pierre would never.)
- I change my hair from pink to purple. (I have to do it at home, because junior academics can't afford salons; my shower ends up looking like a mix between a cotton candy machine and a unicorn slaughterhouse, but after the raccoon incident—which, believe me, you don't want to know about—I wasn't going to get my security deposit back anyway.)

- I take myself to Victoria's Secret and buy a set of pretty green lingerie, not allowing myself to feel guilty at the expense (even though it's been many years since someone has seen me without clothes, and if I have my way no one will for many, many more).
- I download the Couch-to-Marathon plan I've been meaning to start and do my first run. (Then I limp back home cursing my overambition, and promptly downgrade to a Couch-to-5K program. I can't believe that some people work out *every day*.)
- I bake treats for Finneas, my elderly neighbor's equally elderly cat who often visits my apartment for second dinner. (He shreds my favorite pair of Converse in gratitude. Dr. Curie, in her infinite wisdom, was probably a dog person.)

In short, I have an absolute blast. I'm not even sad when Monday comes. It's same old, same old—experiments, lab meetings, eating Lean Cuisine and shotgunning store-brand LaCroix at my desk while crunching data—but with the prospect of BLINK even the old feels new and exciting.

I'll be honest: I've been worried sick. After having four grant applications rejected in less than six months, I was sure that my career was stalling—maybe even over. Whenever Trevor called me into his office, I'd get palpitations and sweaty palms, sure that he'd tell me that my yearly contract wasn't going to be renewed. The last couple of years after I graduated with my Ph.D. haven't been a whole lot of fun.

But that's over with. Contracting for NASA is a career-making

opportunity. After all, I've been chosen after a ruthless selection process over golden boys like Josh Martin, Hank Malik, even Jan Vanderberg, that horrid guy who trash-talks my research like it's an Olympic sport. I've had my setbacks, plenty of them, but after nearly two decades of being obsessed with the brain, here I am: lead neuroscientist of BLINK. I'll design gears for *astronauts*, gears they'll use in *space*. This is how I get out of Trevor's clammy, sexist clutches. This is what buys me a long-term contract and my own lab with my own line of research. This is the turning point in my professional life—which, truthfully, is the only kind of life I care to have.

For several days I'm ecstatic. I'm exhilarated. I'm ecstatically exhilarated.

Then, on Monday at 4:33 p.m., my email pings with a message from NASA. I read the name of the person who will be co-leading BLINK with me, and all of a sudden I'm none of those things anymore.

"DO YOU REMEMBER Levi Ward?"

"*Brennt da etwas*—uh?" Over the phone, Mareike's voice is thick and sleep-laden, muffled by poor reception and long distance. "Bee? Is that you? What time is it?"

"Eight-fifteen in Maryland and . . ." I rapidly calculate the time difference. A few weeks ago Reike was in Tajikistan, but now she's in . . . Portugal, maybe? "Two a.m. your time."

Reike grunts, groans, moans, and makes a whole host of other sounds I'm all too familiar with from sharing a room with her for the first two decades of our lives. I sit back on my couch and wait it out until she asks, "Who died?"

"No one died. Well, I'm sure *someone* died, but no one we know.

Were you really sleeping? Are you sick? Should I fly out?” I’m genuinely concerned that my sister isn’t out clubbing, or skinny-dipping in the Mediterranean Sea, or frolicking with a coven of warlocks based in the forests of the Iberian Peninsula. Sleeping at night is very out of character.

“Nah. I ran out of money again.” She yawns. “Been giving private lessons to rich, spoiled Portuguese boys during the day until I make enough to fly to Norway.”

I know better than to ask “Why Norway?” since Reike’s answer would just be “Why not?” Instead I go with, “Do you need me to send you some money?” I’m not exactly flush with cash, especially after my days of (premature, as it turns out) celebrations, but I could spare a few dollars if I’m careful. And don’t eat. For a couple of days.

“Nah, the brats’ parents pay well. Ugh, Bee, a twelve-year-old tried to touch my boob yesterday.”

“Gross. What did you do?”

“I told him I’d cut off his fingers, of course. Anyway—to what do I owe the pleasure of being brutally awakened?”

“I’m sorry.”

“Nah, you’re not.”

I smile. “Nah, I’m not.” What’s the point of sharing one hundred percent of your DNA with a person if you can’t wake them up for an emergency chat? “Remember that research project I mentioned? BLINK?”

“The one you’re leading? NASA? Where you use your fancy brain science to build those fancy helmets to make fancy astronauts better in space?”

“Yes. Sort of. As it turns out, I’m not leading as much as *co*-leading. The funds come from NIH and NASA. They got into a pissing contest over which agency should be in charge, and ultimately

decided to have two leaders.” In the corner of my eye I notice a flash of orange—Finneas, lounging on the sill of my kitchen widow. I let him in with a few scratches on the head. He meows lovingly and licks my hand. “Do you remember Levi Ward?”

“Is he some guy I dated who’s trying to reach me because he has gonorrhoea?”

“Huh? No. He’s a guy I met in grad school.” I open the cupboard where I keep the Whiskas. “He was getting a Ph.D. in engineering in my lab, and was in his fifth year when I started—”

“The Wardass!”

“Yep, him!”

“I remember! Wasn’t he like . . . hot? Tall? Built?”

I bite back a smile, pouring food in Finneas’s bowl. “I’m not sure how I feel about the fact that the only thing you remember about my grad school nemesis is that he was six four.” Dr. Marie Curie’s sisters, renowned physician Bronisława Dłuska and educational activist Helena Szalayowa, would never. Unless they were thirsty wenches like Reike—in which case they absolutely would.

“*And* built. You should just be proud of my elephantine memory.”

“And I am. Anyway, I was told who the NASA co-lead for my project will be, and—”

“No way.” Reike must have sat up. Her voice is suddenly crystal clear. “*No way.*”

“Yes way.” I listen to my sister’s maniacal, gleeful cackling while I toss the empty can. “You know, you could at least pretend not to enjoy this so much.”

“Oh, I could. But will I?”

“Clearly not.”

“Did you cry when you found out?”

“No.”

“Did you head desk?”

“No.”

“Don’t lie to me. Do you have a bump on your forehead?”

“... Maybe a small one.”

“Oh, Bee. Bee, thank you for waking me up to share this outstanding piece of news. Isn’t The Wardass the guy who said that you were fugly?”

He never did, at least not in those terms, but I laugh so loud, Finneas gives me a startled glance. “I can’t believe you remember *that*.”

“Hey, I resented it a lot. You’re hot AF.”

“You only say so because I look exactly like you.”

“Why, I hadn’t even noticed.”

It’s not completely true, anyway. Yes, Reike and I are both short and slight. We have the same symmetrical features and blue eyes, the same straight dark hair. Still, we’ve long outgrown our *Parent Trap* stage, and at twenty-eight no one would struggle to tell us apart. Not when my hair has been different shades of pastel colors for the past decade, or with my love for piercings and the occasional tattoo. Reike, with her wanderlust and artistic inclinations, is the true free spirit of the family, but she can never be bothered to make free-spirit fashion statements. That’s where I, the supposedly boring scientist, come in to pick up the slack.

“So, was he? The one who insulted me by proxy?”

“Yep. Levi Ward. The one and only.”

I pour water into a bowl for Finneas. It didn’t go *quite* that way. Levi never explicitly insulted me. Implicitly, though . . .

I gave my first academic talk in my second semester of grad school, and I took it very seriously. I memorized the entire speech, re-did the PowerPoint six times, even agonized over the perfect outfit. I ended up dressing nicer than usual, and Annie, my grad school best

friend, had the well-meaning but unfortunate idea to rope Levi in to complimenting me.

“Doesn’t Bee look extra pretty today?”

It was probably the only topic of conversation she could think of. Annie was always going on about how mysteriously handsome he was after all, with the dark hair and the broad shoulders and that interesting, unusual face of his; how she wished he’d stop being so reserved and ask her out. Except that Levi didn’t seem interested in conversation. He studied me intensely, with those piercing green eyes of his. He stared at me from head to toe for several moments. And then he said . . .

Nothing. Absolutely nothing.

He just made what Tim, my ex-fiancé, later referred to as an “aghost expression,” and walked out of the lab with a wooden nod and zero compliments—not even a stilted, fake one. After that, grad school—the ultimate cesspool of gossip—did its thing, and the story took a life of its own. Students said that he’d puked all over my dress; that he’d begged me on his knees to put a paper bag over my head; that he’d been so horrified, he’d tried to cleanse his brain by drinking bleach and suffered irreparable neurological damage as a consequence. I try not to take myself too seriously, and being part of a meme of sorts was amusing, but the rumors were so wild, I started to wonder if I really was revolting.

Still, I never blamed Levi. I never resented him for refusing to be strong-armed into pretending that he found me attractive. Or . . . well, not-repulsive. He always seemed like such a man’s man, after all. Different from the boys that surrounded me. Serious, disciplined, a little broody. Intense and gifted. Alpha, whatever that even means. A girl with a septum piercing and a blue ombre wouldn’t conform to his ideals of what pretty ladies should look like, and that’s fine.

What I *do* resent Levi for are his other behaviors during the year

we overlapped. Like the fact that he never bothered to meet my eyes when I talked to him, or that he always found excuses not to come to journal club when it was my turn to present. I reserve the right to be angry for how he'd slip out of a group conversation the moment I joined, for considering me so beneath his notice that he never even said hi when I walked into the lab, for the way I caught him staring at me with an intense, displeased expression, as though I was some eldritch abomination. I reserve the right to feel bitter that after Tim and I got engaged, Levi pulled him aside and told him that he could do much better than me. Come on, who *does* that?

Most of all, I reserve the right to detest him for making it clear that he believed me to be a mediocre scientist. The rest I could have overlooked easily enough, but the lack of respect for my work . . . I'll forever grind my axe for that.

That is, until I wedge it in his groin.

Levi became my sworn archenemy on a Tuesday in April, in my Ph.D. advisor's office. Samantha Lee was—and still is—the bomb when it comes to neuroimaging. If there's a way to study a living human's brains without cracking their skull open, Sam either came up with it or mastered it. Her research is brilliant, well-funded, and highly interdisciplinary—hence the variety of Ph.D. students she mentored: cognitive neuroscientists like me, interested in studying the neural bases of behavior, but also computer scientists, biologists, psychologists. Engineers.

Even in the crowded chaos of Sam's lab, Levi stood out. He had a knack for the type of problem-solving Sam liked—the one that elevates neuroimaging to an art. In his first year, he figured out a way to build a portable infra-red spectroscopy machine that had been puzzling post-docs for a decade. By his third, he'd revolutionized the lab's data analysis pipeline. In his fourth he got a *Science* publication. And

in his fifth, when I joined the lab, Sam called us together into her office.

“There is this amazing project I’ve been wanting to kickstart,” she said with her usual enthusiasm. “If we manage to make it work, it’s going to change the entire landscape of the field. And that’s why I need my best neuroscientist and my best engineer to collaborate on it.”

It was a breezy, early spring afternoon. I remember it well, because that morning had been unforgettable: Tim on one knee, in the middle of the lab, proposing. A bit theatrical, not really my thing, but I wasn’t going to complain, not when it meant someone wanted to stand by me for good. So I looked him in the eyes, choked back the tears, and said yes.

A few hours later, I felt my engagement ring bite painfully into my clenched fist. “I don’t have time for a collaboration, Sam,” Levi said. He was standing as far away from me as he could, and yet he still managed to fill the small office and become its center of gravity. He didn’t bother to glance at me. He never did.

Sam frowned. “The other day you said you’d be on board.”

“I misspoke.” His expression was unreadable. Uncompromising. “Sorry, Sam. I’m just too busy.”

I cleared my throat and took a few steps toward him. “I know I’m just a first-year student,” I started, appeasingly, “but I can do my part, I promise. And—”

“That’s not it,” he said. His eyes briefly caught mine, green and black stormy cold, and for a brief moment he seemed stuck, as though he couldn’t look away. My heart stumbled. “Like I said, I don’t have time right now to take on new projects.”

I don’t remember why I walked out of the office alone, nor why I decided to linger right outside. I told myself that it was fine. Levi was just busy. Everyone was busy. Academia was nothing but a bunch of

busy people running around busily. I myself was super busy, because Sam was right: I was one of the best neuroscientists in the lab. I had plenty of my own work going on.

Until I overheard Sam's concerned question: "Why did you change your mind? *You* said that the project was going to be a slam dunk."

"I know. But I can't. I'm sorry."

"Can't what?"

"Work with Bee."

Sam asked him why, but I didn't stop to listen. Pursuing any kind of graduate education requires a healthy dose of masochism, but I drew the line at sticking around while someone trash-talked me to my boss. I stormed off, and by the following week, when I heard Annie chattering happily about the fact that Levi had agreed to help her on her thesis project, I'd long stopped lying to myself.

Levi Ward, His Wardness, Dr. Wardass, despised me.

Me.

Specifically me.

Yes, he was a taciturn, somber, brooding mountain of a man. He was private, an introvert. His temperament was reserved and aloof. I couldn't demand that he like me, and had no intention of doing so. Still, if he could be civil, polite, even friendly with everyone else, he could have made an effort with me too. But no—Levi Ward clearly despised me, and in the face of such hatred . . .

Well. I had no choice but to hate him back.

"You there?" Reike asks.

"Yeah," I mumble, "just ruminating about Levi."

"He's at NASA, then? Dare I hope he'll be sent to Mars to retrieve *Curiosity*?"

"Sadly, not before he's done co-leading my project." In the past few years, while my career gasped for air like a hippo with sleep ap-

nea, Levi's thrived—obnoxiously so. He published interesting studies, got a huge Department of Defense grant, and, according to an email Sam sent around, even made *Forbes's* 10 Under 40 list, the Science Edition. The only reason I've been able to stand his successes without falling on my sword is that his research has been gravitating away from neuroimaging. This made us not-quite-competitors anymore, and allowed me to just . . . never think about him. An excellent life hack, which worked superbly—until today.

Honestly, fuck today.

"I'm still enjoying this immensely, but I'll make an effort to be sisterly and sympathetic. How concerned are you to be working with him, on a scale from one to heavily breathing into a paper bag?"

I tip what's left of Finneas's water in a pot of daisies. "I think having to work with someone who thinks I'm a shit scientist warrants at least two inhalers."

"You're amazing. You're the best scientist."

"Aw, thank you." I choose to believe that Reike filing astrology and cristalotherapy under the label "science" only slightly detracts from the compliment. "It's going to be horrible. The worst. If he's anything like he used to be, I'm going to . . . Reike, are you peeing?"

A beat, filled by the noise of running water. ". . . Maybe. Hey, you're the one who woke me and my bladder up. Please, carry on."

I smile and shake my head. "If he's anything like he was at Pitt, he's going to be a nightmare to work with. Plus I'll be on his turf."

"Right, 'cause you're moving to Houston."

"For three months. My research assistant and I are leaving next week."

"I'm jealous. I'm going to be stuck here in Portugal for who knows how long, groped by knock-off Joffrey Baratheons who refuse to learn what a subjunctive is. I'm rotting, Bee."

It will never cease to befuddle me how differently Reike and I reacted to being thrown around like rubber balls during childhood, both before and after our parents' death. We were bounced from one extended family member to another, lived in a dozen countries, and all Reike wants is . . . to live in even *more* countries. Travel, see new places, experience new things. It's like yearning for change is hard-wired in her brain. She packed up the day we graduated high school and has been making her way through the continents for the past decade, complaining about being bored after a handful of weeks in one place.

I'm the opposite. I want to put down roots. Security. Stability. I thought I'd get it with Tim, but like I said, relying on others is risky business. Permanence and love are clearly incompatible, so now I'm focusing on my career. I want a long-term position as an NIH scientist, and landing BLINK is the perfect stepping-stone.

"You know what just occurred to me?"

"You forgot to flush?"

"Can't flush at night—noisy European pipes. If I do, my neighbor leaves passive-aggressive notes. But hear me out: three years ago, when I spent that summer harvesting watermelons in Australia, I met this guy from Houston. He was a riot. Cute, too. Bet I can find his email and ask him if he's single—"

"Nope."

"He had really pretty eyes and could touch the tip of his nose with his tongue—that's, like, ten percent of the population."

I make a mental note to look up whether that's true. "I'm going there to work, not to date nose-tongue guy."

"You could do both."

"I don't date."

"Why?"

“You know why.”

“No, actually.” Reike’s tone takes on its usual stubborn quality. “Listen, I know that the last time you dated—”

“I was engaged.”

“Same difference. Maybe things didn’t go well”—I lift one eyebrow at the most euphemistic euphemism I’ve ever heard—“and you want to feel safe and practice maintenance of your emotional boundaries, but that can’t prevent you from ever dating again. You can’t put all your eggs into the science basket. There are other, better baskets. Like the sex basket, and the making-out basket, and the letting-a-boy-pay-for-your-expensive-vegan-dinner basket, and—” Finneas chooses this very moment to meow loudly. Bless his little feline timing. “Bee! Did you get that kitten you’ve been talking about?”

“It’s the neighbor’s.” I lean over to nuzzle him, a silent thank-you for distracting my sister mid-sermon.

“If you don’t want to date nose-tongue guy, at least get a damn cat. You already have that stupid name picked out.”

“Meowrie Curie is a great name—and no.”

“It’s your childhood dream! Remember when we were in Austria? How we’d play Harry Potter and your Patronus was always a kitten?”

“And yours was a blobfish.” I smile. We read the books together in German, just a few weeks before moving to our maternal cousin in the UK, who wasn’t exactly thrilled to have us stay in her minuscule spare room. Ugh, I hate moving. I’m sad to leave my objectively-crappy-but-dearly-beloved Bethesda apartment. “Anyway, Harry Potter is tainted forever, and I’m not getting a cat.”

“Why?”

“Because it will die in thirteen to seventeen years, based on recent statistical data, and shatter my heart in thirteen to seventeen pieces.”

“Oh, for fuck’s sake.”

“I’ll settle for loving other people’s cats and never knowing when they pass away.”

I hear a thud, probably Reike throwing herself back into bed. “You know what your condition is? It’s called—”

“Not a condition, we’ve been over—”

“—avoidant attachment. You’re pathologically independent and don’t let others come close out of fear that they’ll eventually leave you. You have erected a fence around you—the Bee-fence—and are terrified of anything resembling emotional—” Reike’s voice fades into a jaw-breaking yawn, and I feel a wave of affection for her. Even though her favorite pastime is entering my personality traits in WebMD and diagnosing me with imaginary disorders.

“Go to bed, Reike. I’ll call you soon.”

“Yeah, okay.” Another small yawn. “But I’m right, Beetch. And you’re wrong.”

“Of course. Good night, babe.”

I hang up and spend a few more minutes petting Finneas. When he slips out to the fresh breeze of the early-spring night, I begin to pack. As I fold my skinny jeans and colorful tops, I come across something I haven’t seen in a while: a dress with yellow polka dots over blue cotton—the same blue of Dr. Curie’s wedding gown. Target, spring collection, circa five million years ago. Twelve dollars, give or take. It’s the one I was wearing when Levi decided that I am but a sentient bunion, the most repugnant of nature’s creatures.

I shrug, and stuff it into my suitcase.