

INSIGHTS



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BOOKS *et al.*

REVIEW ROUNDUP

Summer reading 2023

Indigenous narratives inform an ecologist's ode to the octopus. An underappreciated form of communication takes center stage in a linguist's life's work. A much-maligned party drug gains respect as a therapeutic agent. From a fictional glimpse into the lives of hysteria patients in 19th-century Paris, to a fascinating history of California's dwindling redwoods, to a soul-searching account of a voyage to Antarctica, the books on this year's summer reading list invite careful reflection on topics ranging from physics to codebreaking. Read on for reviews written by alumni of the AAAS Mass Media Science & Engineering Fellows program of nine books with strong science themes set to publish this summer. —Valerie Thompson

In a Flight of Starlings

Reviewed by **Robert Frederick¹**

In his latest book, *In a Flight of Starlings*, Nobel Prize-winning physicist Giorgio Parisi sets himself a task that he admits is possible but not easy: to convey both scientific results and, more importantly, how scientists create them. His overall goal is to highlight how science and society are intertwined, a coproduction, shaping and being shaped by one another.

Historically, this task has not always been so challenging. For centuries, readers of the Royal Society's *Philosophical Transactions*, the world's longest-running scientific journal, were encouraged to replicate experiments for themselves, thereby enacting the publisher's motto, *Nullius in verba* ("Take nobody's word for it"). As science became more specialized and experiments became more complicated, however, the need for a new system emerged. In the 1830s, the Royal Society introduced the peer-review process.

Unfortunately, Parisi writes, this process has led some scientists and science communicators to overemphasize results, avoiding the more difficult task of explaining the underlying evidence and analysis, while also failing to stress science's inherent uncertainty. As a result, when new evidence contradicts previously peer-reviewed findings, public trust in the scientific enterprise wanes. That distrust, in turn, can lead to science denialism and disastrous consequences.

The book's opening chapter on Parisi's experience studying the collective behavior of airborne flocks of starlings is an accessible tale of trial and error, scientific and technological advances, surprise and delight. Why a theoretical physicist spent decades studying these birds is answered by the next few chapters: Parisi did not specialize, despite receiving advice to do so from fellow CERN physicist Martinus "Tini" Veltman, who was doing his own Nobel Prize-winning work at the time. Parisi argues that it was because he studied many things simultaneously that he made connections among different fields that led to new discoveries.

The book's subsequent chapters require considerably more patience. In chapter 5, for example, readers might struggle to understand the mathematical modification that Parisi used to develop his theory about spin glasses, the work for which he won a Nobel Prize in Physics in 2021.

Parisi writes that his Nobel Prize—



winning discovery happened by accident: He was researching a mathematical tool that he planned to apply to an unrelated problem, encountered a conceptual error that led the tool to produce incoherent results, reworked the math himself, and discovered the spin glass equations. Indeed, several of Parisi's memorable anecdotes bring to mind Louis Pasteur's famous quote about how chance favors the prepared mind.

With humility, Parisi also shares stories of how his preparation and intuition have sometimes failed him. He devotes an entire chapter, for example, to recounting how a series of missteps in 1973 led him to shelve an idea rather than spend "a moment's thought" pursuing alternative hypotheses. A few months later, three other scientists had that same thought and coauthored a paper that would go on to win them a Nobel Prize in 2004.

Although Parisi's stated goal is to address a wide audience, this book speaks directly to fellow scientists and to anyone who communicates science. We must communicate both results and methods, Parisi maintains, all while sharing science's "beauty, importance, and cultural value," lest we share in the responsibility for encouraging science denialism.

In a Flight of Starlings: The Wonders of Complex Systems. Giorgio Parisi, Penguin Press, 2023, 144 pp.

I Feel Love

Reviewed by **Elie Dolgin**²

On a sunny September morning in 1975, two university students, Carl Resnikoff and Judith Gips, boarded a ferry in San Francisco Bay. Each swallowed a small capsule filled with a crystalline white powder. Their afternoon was soon filled with laughter, waves of euphoria, and a profound sense of compassion for each other and all of humanity. The pair were the first people identified by name to have taken 3,4-methylenedioxymethamphetamine—a drug better known as MDMA, molly, ecstasy, or simply "E."

Millions of others have since "rolled" on MDMA. The drug initially gained popularity among practitioners of psychedelic-assisted psychotherapy, before being discovered by young partygoers in the nightclub and rave scenes. Governments around the world then cracked down on the compound, leading to the rise of an underground drug trade fueled by a chemistry whiz who synthesized kilograms of near-pure MDMA out of a converted laboratory in southern Brazil. The stash was sold by a priest turned MDMA kingpin who, before serving a 7-year sentence for drug dealing, donated thousands of pills (which were then sold for cash) to help fund animal toxicity studies intended to demonstrate MDMA's safety.

Science journalist Rachel Nuwer recounts

all this and more in her new book, *I Feel Love*, which details the complex and fascinating saga of how MDMA, a once obscure party drug, a controversial therapy tool, and a powerful symbol of the human desire for connection. While the stories and figures she describes may not share the same level of public recognition as those surrounding "Bicycle Day"—the anniversary of chemist Albert Hofmann's first intentional LSD trip—they are no less captivating. And as regulatory approval nears—pharmaceutical-grade MDMA will soon be available in Australia as a treatment for posttraumatic stress disorder, with authorizations in other countries expected soon—the need for an improved understanding and public awareness of the drug's potential effects on the brain has never been more urgent.

Much of the terrain that Nuwer treads was previously explored in Michael Pollan's 2018 bestseller, *How to Change Your Mind*, which delved into the science, culture, and history of "classical" psychedelics such as LSD and psilocybin. That influential treatise helped raise mainstream consciousness about the therapeutic potential of these substances and marked a turning point in the rise of today's psychedelic renaissance. But as Nuwer writes, "MDMA has its own distinct history and compelling cast of characters, its own unique neurological mechanisms and potential for both ill and good."

I Feel Love thus serves as something

of an unofficial sequel to Pollan's literary landmark, filling in details about a therapeutically promising drug left out of that earlier narrative. Scientifically, it picks up where Pollan left off, highlighting years of additional research into how psychedelics rewrite the brain so as to create a renewed state of childlike openness and suggestibility, while also underscoring clinical data demonstrating the safety and efficacy of MDMA as a treatment for everything from alcoholism to social anxiety disorder.

As MDMA stands poised to become a cornerstone of mental health treatment, readers must ask themselves: Are they ready to roll?

I Feel Love: MDMA and the Quest for Connection in a Fractured World. Rachel Nuwer, Bloomsbury, 2023, 384 pp.

Many Things Under a Rock

Reviewed by **Dan Blustein**³

What has seven arms, can shape-shift to match a tuft of algae, and neutralizes a live clam by drilling a hole in its shell and injecting paralyzing saliva? If you guessed a male octopus that just lost an arm to a cannibalistic female after a failed mating attempt, you would be correct!

Many Things Under a Rock, by ecologist David Scheel, includes numerous such dramatic and captivating octopus factoids, but it also presents an accessible and nuanced exploration of the lives of these intriguing invertebrates. The book's careful scientific observation, contextualized with modern and historical accounts of the species from Western and Native peoples, is an engaging read and a refreshing break from the seemingly steady stream of "sharktopus" thrillers with which we have been presented in recent years.

Scheel, a cephalopod researcher, quickly garners the reader's trust with his meticulous description of octopuses in the lab and in the wild. We follow along as Scheel's perspective shifts from an initial fear of these mysterious creatures, driven by legends of gigantic octopuses wrestling with divers, to one of nuanced respect. He details his transformation into an octopus expert as the book progresses, recounting expeditions to the frigid depths of the northern Pacific and to southern Australian clam beds as he searched for clues about how different octopus species interact with their environment, predators, prey, and each other.

Exploring the octopus requires a multidisciplinary approach, to which Scheel



The octopus is featured in Indigenous stories and cultural items, such as this textile crafted by a Kuna Indian artist.

commits as he weaves together Western evolutionary history, behavior, ecology, and neuroscience with Indigenous ways of knowing. He illustrates the connections between octopus biology and Native Alaskan octopus histories, for example, by revealing how variations in Indigenous language seem to reflect octopus natural history. The root "am-" in the Inuit word for octopus, "amikuk," means "skin," he reveals—a seeming reference to the key evolutionary adaptation differentiating octopus from more-ancient mollusks: the loss of an external shell and the emergence of skin that enables swimming.

Warming waters have driven transient octopus population booms in Japan and England throughout the past 150 years, a phenomenon that is also reflected in various Indigenous histories. Scheel connects these histories by discussing how communities have made sense of local changes in octopus abundance.

A few of the book's descriptions of octopus actions and anatomy may be too detailed for nonexperts, but such instances are infrequent and further reinforce Scheel's precise attention to detail in recounting his field observations. Scheel also references a range of scientific studies throughout the text, including some very recent work, although readers must rely on a notes section at the end rather than in-text citations to learn more about this research.

The word for "octopus" in Eyak—a language native to Southcentral Alaska—is "tse-le:x-guh," which translates literally as "many things under a rock." The book's title is thus a descriptor, not only of an octopus's eight arms sheltered by a protective rock but also the many mysteries left to unravel about these extraordinary creatures.

Many Things Under a Rock: The Mysteries of Octopuses. David Scheel, Norton, 2023, 320 pp.

The Hidden History of Code-Breaking

Reviewed by **Francisco J. Guerrero**⁴

Chock-full of code puzzles for readers to solve, Sinclair McKay's *The Hidden History of Code-Breaking* is an interactive exploration of the seemingly never-ending arms race between codemakers and codebreakers. The book's strengths include its focus on the motivations behind code creation and the individuals who created some of history's most well-known codes. McKay writes, for example, about the serendipitous moment Samuel Morse first conceived of the dots, dashes, and spaces that would become Morse code while on board a transatlantic ship. Like vessels crossing the ocean, Morse imagined words going on a similar journey, carried by short electrical impulses along very long wires. McKay also highlights the stories of individuals who used their intelligence, persistence, and creativity to crack codes that stumped others for years. This latter group includes Alan Turing, whose Bletchley Park team eventually cracked the Enigma code used by the Nazis during World War II.

McKay's writing is clear and engaging, making complex concepts and theories accessible to readers without oversimplifying them. In chapter 12, for example, he balances technical details and storytelling masterfully while exploring the Human Genome Project. Here, complex ideas such as gene sequencing are woven skillfully into tales about solving the mystery of what makes us human.

The book touches on various fields, including linguistics, math, history, archaeology, literature, biology, and politics, and demonstrates how codebreaking has influenced these fields throughout history,

offering a rich and insightful perspective for readers interested in the intersection of these fields. In chapter 5, for example, McKay explores the role of human relationships in the evolution of codes and ciphers, noting how secret lovers have long encoded messages in poetry, songs, and other romantic expressions to arrange specific dates and encounters.

Shortcomings include the fact that the puzzles presented for readers to solve throughout the book are of varying and inconsistent difficulty, a few contain inherent language and cultural biases that may not be accessible to all readers, and the instructions to solve them are not always clear. Furthermore, the book's focus on historical military and government codes may not appeal to all readers, especially those inclined toward modern cryptography applications. The book could also have benefited from more detailed explanations or images of some codes and artifacts. For example, McKay's description of the Phaistos disc would have been clearer if accompanied by a pictorial diagram.

Despite these weaknesses, *The Hidden History of Code-Breaking* is a worthwhile introduction to the world of codes and ciphers that offers a glimpse into the fascinating realm of encryption and how codes have been used throughout history. Its puzzles and historical trivia would make for interesting summer travel companions.

The Hidden History of Code-Breaking: The Secret World of Cyphers, Uncrackable Codes, and Elusive Encryptions. Sinclair McKay, Pegasus, 2023, 400 pp.

Thinking with Your Hands

Reviewed by **Lisa Aziz-Zadeh**⁵

How does gesture influence thinking? What does it reveal about language and conceptual learning? How can we use it to teach, parent, and heal? These are among the many questions Susan Goldin-Meadow discusses in her thorough and powerful book, *Thinking with Your Hands*. The volume synthesizes the author's 50+ years of expertise in gesture research, for which, among other awards and accolades, she won election into the National Academy of Sciences in 2020 and was the recipient of the prestigious David E. Rumelhart Prize in 2021.

In the book's first chapter, Goldin-Meadow discusses how gesture can reveal whether a child is ready to learn a new concept. She and her colleagues found, for example, that children will sometimes provide

a wrong answer to a mathematical question while simultaneously revealing through gesture that they understand the underlying concept, a mismatch that can be used as a sign that the child is on the cusp of learning the idea being taught. But educators must be attuned to gesture to maximize this learning stage—not recognizing the gesture-speech mismatch is a loss of a teachable moment, she argues.

Meanwhile, in chapter 4, Goldin-Meadow reveals that children who are not taught language—for example, deaf children whose hearing parents do not use sign language—will often develop language spontaneously. By studying the so-called “homesign” gestures made by such children, researchers have determined that humans can develop certain language features on their own—for example, creating gesture sentences that are hierarchically structured. Other aspects of language, however, such as the use of the passive voice, need to be learned. Interestingly, mathematical reasoning appears to require more person-to-person teaching than does language; apparently not all abstract concepts are similar in their amenability to self-invention.

After discussing how gesture can be used to improve teaching, parenting, and rehabilitation, Goldin-Meadow questions whether mediums that do not reveal gesture—auditory recordings, for example, or live or recorded videos that restrict gesture space—should be admissible in judicial hearings. Laboratory studies indicate that an interviewer's gestures might introduce biases in a witness's memory and, simultaneously, that a witness's gestures may reveal more information than their speech alone.

It is at this point that the true power of this book emerges: Having convinced



Gestures can convey information that speech cannot, making them critical features of communication.

the reader to accept the importance and impact of gesture, Goldin-Meadow urges us to question its broader societal implications. That she might bring a lay audience this far in their appreciation of the vital but often overlooked impact of gesture on interpersonal communication is a triumph of this book.

Thinking with Your Hands: The Surprising Science Behind How Gestures Shape Our Thoughts.

Susan Goldin-Meadow, Basic Books, 2023, 272 pp.

The Madwomen of Paris

Reviewed by **Stephani Sutherland**⁶

The Madwomen of Paris by Jennifer Cody Epstein tells the fictional story of Laure, a young woman living in Paris in the late 19th century who has been orphaned, separated from her sister, and, like so many real women of that time, institutionalized with hysteria at the Salpêtrière asylum. There, Laure recovers and—with few other choices as a penniless young woman—stays on to work as a nursemaid to other hysterical patients. Her determination to be reunited with her sister is complicated by the arrival of a mysterious new patient, Josephine, who has clearly undergone a serious trauma but has no memory of what has happened to her.

Josephine becomes a “star patient” of the asylum's head doctor, Jean-Martin Charcot, who hypnotizes his hysterical patients to study the disease, often in front of a packed public audience. Under hypnosis, patients are subjected to all sorts of humiliations, including sexual assault. Those who behave badly receive “hydrotherapy,” which consists of being sprayed with a strong hose, or are thrown into the “softs” (padded cells). The worst fate, it seems, is to be assigned to the “lunacy” wing of the hospital, where patients' sanity is believed to be beyond repair. Josephine is placed under Laure's care, and together they survive the horrific conditions of the asylum and unravel the mystery of Josephine's past.

Readers are informed up front that “Though inspired by a real place (the Salpêtrière asylum, now a teaching hospital in Paris), real events, and real historical figures, *The Madwomen of Paris* is a work of fiction.” But a key character of the book, Charcot, was a real person, sometimes referred to as the “father of neurology.” In addition to studying hysteria, the real Charcot connected pathophysiology with the symptoms of neurological diseases, allowing him to make the first diagnoses of multiple sclerosis and amyotrophic lateral sclerosis, among

other diseases. Josephine, too, is based in part on a real “star” patient—Augustine Gleizes—the author explains in a note.

The book’s blend of fact and fiction may leave readers with questions about which parts of the story reflect reality and which do not. For example, were the conditions truly as terrible for institutionalized women at that time as the book describes? Cody Epstein notes that she has “done what historical novelists can happily (if perhaps uncomfortably for some) do, shifting and omitting some events and chronologies, and entirely inventing others.”

Other unanswered questions may inspire further reading. Hysteria is no longer recognized as a medical disorder, for example, so what really afflicted the patients in the asylum?

In any case, Cody Epstein has achieved her goal of immersing readers in the “stranger-than-fiction universe” of late-19th-century Paris. At a time when women’s reproductive rights are under threat and people with unexplained medical conditions are routinely gaslit, *The Madwomen of Paris* provides a fascinating look back at a condition with modern-day resonance.

The Madwomen of Paris: A Novel. Jennifer Cody Epstein, Ballantine Books, 2023, 336 pp.

Life on Other Planets

Reviewed by **Clare Fieseler**⁷

Aomawa Shields is many things: daughter of musicians, boarding school star, trained actor, sometimes astronomer, and a person with a deeply curious mind. Her 2015 TED talk “How we’ll find life on other planets” propelled her to internet fame and inspired the title of her new memoir, *Life on Other Planets*. But Shields should not be defined by her alien-seeking research. As she puts it: “I am a champion of interdisciplinarity.”

Shields’s powerfully personal book tells the story of a Black woman with two passions finding her place in the world. After a failed first start as an astrophysics PhD student, Shields pursued professional acting for a decade. She eventually returned to the stars—and graduate school—restarting a career as an astrobiologist and, later, professor. Her journey is filled with self-doubt and serious soul-searching, but here’s what

is clear: Modern science is still built for the easily defined worker. As a scientist-turned-journalist myself, I said “yes” out loud multiple times as I read how hard it was for Shields to be an interdisciplinarian and career-pivoter.

In *Life on Other Planets*, Shields makes a stand against a kind of unbridled scientific success that comes at any cost. Hers is a story of applying to the US astronaut program three times, rejected each time and wiser for it. The time away from her daughter would not have been worth it, she realized. She normalizes a view of the scientific career that is always changing. Goals will—and should—evolve as we learn more about ourselves and the objects we study.

In one moving scene, Shields describes her elation at being invited to lunch by Ann Druyan, Carl Sagan’s widow and writing partner, where Shields receives a warm embrace and mutual respect from “the most important person” in Sagan’s life. Shields and Sagan are the closest of kindred spirits, sharing a propensity for polymathy and a passion for science communication. As a Black woman, the obstacles Shields encountered ascending to a Sagan-like professional position feel unfair. She describes her experiences in touching detail, but she does not interrogate the external societal structures that continue to serve as obstacles for women and people of color, not to mention polymaths.

What, if anything, should change so that the life of an astronomer-slash-actor is not so arduous? The book should be a warning



Aomawa Shields stands in front of the Arecibo Observatory in Puerto Rico in 1996.

to the scientific community that, still today, pays lip service to STEAM (science, technology, engineering, arts, and mathematics) while leaving behind the people who do that work: scientific artists and artistic scientists.

Imagining the reader as someone compelled by the cosmos, like herself, Shields gets to the root of it: “What do I want for you? I want you to look up and be amazed. I want you to feel supported, less lonely and afraid, a part of rather than apart from.” We may or may not be alone in the Universe, but Shields makes a case for togetherness, with each other and within ourselves.

Life on Other Planets: A Memoir of Finding My Place in the Universe. Aomawa Shields, Viking, 2023, 352 pp.

The Ghost Forest

Reviewed by **Bridget Alex**⁸

Evolving some 200 million years ago, redwood trees survived the rupturing of Pangea, the meteor that offed the dinosaurs, and innumerable natural catastrophes and climate swings. Individual trees have attained heights of more than 350 feet, trunks with 30-foot diameters, and 3000th birthdays.

In the mid-19th century, these primordial giants flourished in a 2-million-acre forest that stretched along California’s coast from the Bay Area to the Oregon border. Today, just 4% of this land harbors coast (or California) redwoods. The trees’ evolutionary cousin, the giant sequoia, ekes by in scattered groves of the Sierra Nevada. *The Ghost Forest* explores how and why the world’s tallest trees were logged nearly to extinction in less than two centuries.

Greg King is an authoritative guide for this journey, highlights of which include extractive capitalism, specious regulations, and shady dealings. A journalist and environmental activist, he also enters the plot as a protagonist who led campaigns in the 1980s and 1990s to save declining old-growth forests. The book interweaves King’s experiences from the front lines of eco-activism with his decades of archival research into the forces behind redwood decimation.

The history unfolds in three eras. During the late 1800s, private companies illegally acquired lands inhabited by coast redwoods. After World War I, loggers liquidated these forests and sold the prized timber to make

¹The reviewer is at the Global Virus Network, Baltimore, MD 21201, USA. Email: ref@gvn.org ²The reviewer is a science journalist in Somerville, MA, USA. Email: elie@eliedolgin.com ³The reviewer is at the Department of Psychology, Acadia University, Wolfville, NS B4P 2R6, Canada. Email: dan@danblu.com ⁴The reviewer is at the Department of Forest Engineering, Resources, and Management, Oregon State University, Corvallis, OR 97333, USA. Email: francisco.guerrero@oregonstate.edu ⁵The reviewer is at the Department of Psychology, University of Southern California, Los Angeles, CA 90089, USA. Email: lazizzad@usc.edu ⁶The reviewer is a freelance writer based in Claremont, CA, USA. Email: sutherland@nasw.org ⁷The reviewer is at the National Museum of Natural History, Smithsonian Institution, Washington, DC 20013, USA, and *The Post and Courier*, Charleston, SC 29403, USA. Email: clare.fieseler@gmail.com ⁸The reviewer is at the Department of Human Evolutionary Biology, Harvard University, Cambridge, MA 02138, USA. Email: balex@harvard.edu ⁹The reviewer is at the Department of Earth and Environmental Sciences, Columbia University, New York, NY 10027, USA. Email: ehc2150@columbia.edu



Logging and disingenuous conservation efforts have substantially reduced populations of California redwoods (*Sequoia sempervirens*).

water and oil pipes, railway ties, shingles, telephone poles, and other infrastructure for the growing country. Near the end of the 20th century, corporations profited once more from the swindled land when they sold redwood stands back to the government.

The book triumphs as a comprehensive accounting of events and entities that ushered in this irreplaceable loss. Synthesizing decades of sleuthing, King reveals unexpected culprits such as the Save the Redwoods League—an organization created by business titans wanting to protect scenic redwood stands so the public would be placated but logging could continue out of sight. He also tactfully grapples with vile redwood protectors: Eugenicists and Nazi supporters considered the trees to be “apex species” worthy of life.

For casual readers, some portions will drag as King names historical individuals and companies that figure only briefly and situates tree groves within California watershed geography. The text also becomes oversaturated with superlatives for redwood size, forest acres, and timber planks and payouts—but how else does one describe astronomical profits made from felling vast swaths of the world’s tallest trees?

Patient readers will be rewarded because the pace quickens to that of a page-turner when King recounts tales of harrowing activism in the 1980s and 1990s. Suffering arrests, death threats, and FBI infiltrators, he and colleagues staged heroic protests, once even scaling the Golden Gate Bridge.

Although set in the past, the book is urgently of-the-moment. Early perpetrators of what is now called “greenwashing,” corporate leaders hatched the Save the Redwoods League at Bohemian Grove, the elite resort recently in headlines because of Supreme Court Justice Clarence Thomas’s visits, for example. More broadly, the systems of power and wealth that targeted the

redwoods and their protectors continue to inflict violence on Earth’s defenders worldwide. If the trends of global warming and deforestation hold steady, *The Ghost Forest* may eventually read as a prequel to the ghost planet.

The Ghost Forest: Racists, Radicals, and Real Estate in the California Redwoods. Greg King. PublicAffairs, 2023, 480 pp.

The Quickening

Reviewed by Elizabeth Case⁹

In *The Quickening*, Elizabeth Rush takes readers to the precipice of the climate crisis. Aboard the *Nathaniel B. Palmer*, an American icebreaker, Rush and a crew of scientists, journalists, and support staff set bow and stern in front of Thwaites Glacier for the first time in history, sampling water in unnamed bays; collecting sediments, shells, and bones; and sending submarines under the glacier to photograph evidence of past rates of glacial retreat.

The Quickening is framed as a play in four acts. The cast consists of the scientists, crew, two other journalists, and the glacier (although, interestingly, not Rush herself). Interspersed between Rush’s monologues, her shipmates tell stories about their births, the reasons they do the work they do, and the lessons they learn from it. The glacier, of course, never speaks directly. Instead, it calves, groans, and creaks—communications left open to our interpretation.

Rush’s descriptions of the ice and ocean transport readers to the ship’s bridge. The first iceberg she sees is “dove gray,” “whipped meringue,” “a milky-aquamarine spire,” and “the pearly luster of kyanite.” Later, between floes, “where the nearly frozen water shows,” she recalls “a turquoise

so deep it torques all it touches into something new.”

The Quickening is an intensely personal story—a memoir that is also an act of processing as Rush works through her decision to have a child as the climate crisis looms. The book’s title references the sensation a mother experiences when a baby first moves in utero—a nod not just to Rush’s own efforts to become pregnant but also to the moment scientists noticed that Thwaites had begun to respond to climate change.

As a scientist, I have also traveled to Thwaites. I am planning to go again this year. And because, as Rush points out, no pregnant people are allowed to work in or around Antarctica, each year I go is another year my partner and I must wait to start a family, another year of uncertainty about whether the desire for a child is selfish, biological, logical, or loving. *The Quickening* helped me orient these questions, although, of course, it could not answer them.

I did wonder about the sense of agency Rush grants to Thwaites and whether it undermines humankind’s responsibility for the planet’s future. At one point, she asks, “Will Miami even exist in one hundred years?” and answers, “Thwaites will decide.” Rush is referring to how much sea level rise Thwaites will contribute as it melts. But it is us—and really a small subset of us—who will decide. We may already have, if the glacier has already begun unstably collapsing.

This response aside, *The Quickening* is a poignant, necessary addition to the body of Antarctic literature, one that centers—without glorifying—motherhood, uncertainty, community, vulnerability, and beauty in a rapidly melting world.

The Quickening: Creation and Community at the Ends of the Earth. Elizabeth Rush. Milkweed Editions, 2023, 424 pp.

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Summer reading 2023

Robert Frederick, Elie Dolgin, Dan Blustein, Francisco J. Guerrero, Lisa Aziz-Zadeh, Stephani Sutherland, Clare Fieseler, Bridget Alex, and Elizabeth Case

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