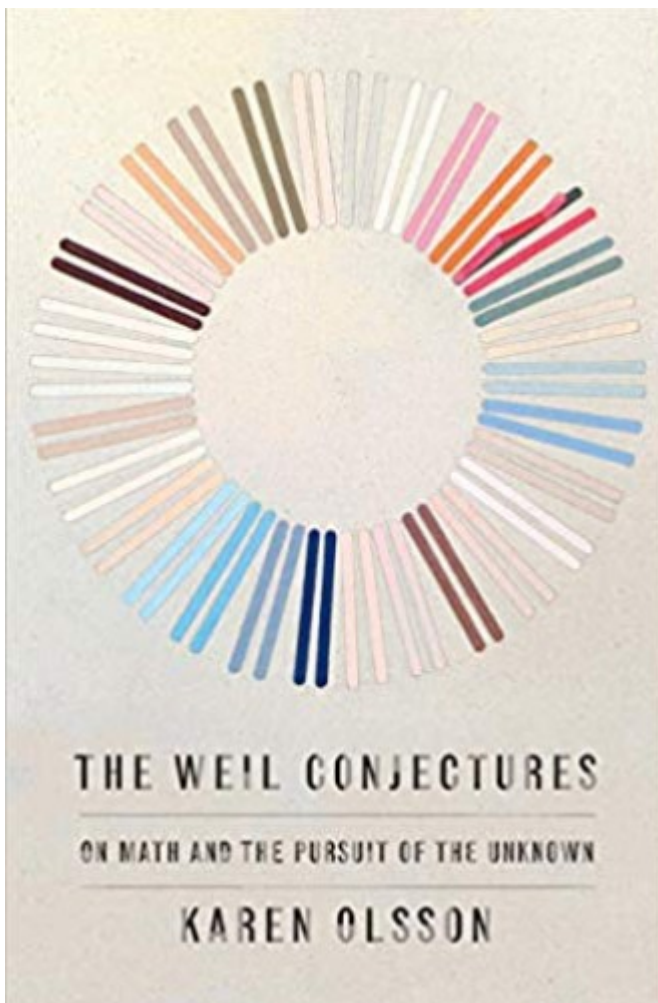


Simone and André the obscure

The Weil siblings and the dense worlds of their minds

by [Olivia Bustion](#) in the [October 23, 2019](#) issue

In Review



The Weil Conjectures

On Math and the Pursuit of the Unknown

By Karen Olsson
by Farrar, Straus and Giroux

As a teenager, Simone Weil thought about killing herself. The reason? She could no longer keep up with her older brother André at math. “I didn’t mind having no visible successes,” she later explained, “but what did grieve me was the idea of being excluded from that transcendent kingdom to which only the truly great have access and wherein truth abides. I preferred to die rather than live without that truth.”

André would go on to become one of the most influential mathematicians of the 20th century. Simone would go on to become a writer, philosopher, and political activist—influential in her own right, posthumously celebrated by poets, ethicists, theologians, and cultural critics.

As adults, the Weil siblings argued with one another about André’s “type of math.” Simone found algebra distasteful, “a manipulation without any reality behind it,” “merely a game, referring only to itself,” “too removed from life,” “untethered from any study of nature,” “divorced from the material world”—in a word, useless. She gravitated instead to the geometry of the ancient Greeks, believing that for them math “was not just a mental exercise but a key to nature.”

Still, André’s transcendent kingdom retained its fascination for Simone. She implored her brother to help her understand his research. He replied that “telling non-specialists of my research or of any other mathematical research” would be “like explaining a symphony to a deaf person.”

André maintained this snappish insistence on the inaccessibility of math for the rest of his long life. At 88, he told the renowned film director Akira Kurosawa, “I have a great advantage over you. I can love and admire your work, but you cannot love and admire my work.” By André’s lights, even the history of math should be off limits to outsiders: only mathematicians are capable of telling the discipline’s story, he argued, and the only reason to tell it is to inspire new mathematical research.

Fortunately, Karen Olsson’s portrait of the Weil siblings does not heed André’s advice. *The Weil Conjectures* achieves a moving rapprochement between brother and sister.

Olsson shows that André’s math was not untethered from nature. His most important contributions—the conjectures alluded to in the title—look to topology

(the study of geometric properties and spatial relations) for a solution to a problem in algebraic number theory (which studies the properties of integers and rational numbers using the techniques of abstract algebra). For Olsson, the takeaway here is that “no mathematics, not even number theory, is divorced from our geometrical intuition,” meaning “no mathematics is entirely cut off from the sensual.”

On Olsson’s account, it is Simone’s writing, not André’s math, that is too removed from life—“dense,” “baffling,” “abstract,” “hard to digest,” full of “oblique flights of theorizing.” And it was not André the mathematician but Simone the “almost-Catholic” mystic who untethered herself from nature—going “for long stretches without food and rest,” praying “in the name of Christ” for the obliteration of her capacity for thought and feeling, seeking an “invisible world” she took “to be more real than the visible one.”

Ultimately, though, André and Simone pursued the same sort of thing. “Each had the run of an elaborate mental (or mental-spiritual) universe,” Olsson remarks. For André, that universe was polynomial equations; for Simone, it was Christian Platonism.

Olsson frames her portrait of the Weil siblings with reflections on her own relationship to math. Having majored in math at Harvard, Olsson shares André’s passion for “these constructed realms and the relations within and among them,” “models nested within models, labyrinths built on top of labyrinths, the unlikely connections.” But she ended up a novelist, and she shares Simone’s impatience with the uselessness of math. Watching a YouTube lecture from an abstract algebra class that she took in college makes Olsson “tetchy,” as if “itching from the inside.” “Who cares? I am a midlife mother of two,” she protests, “and this is the most pointless thing I could possibly be doing.”

In the end, Olsson reconciles her passion and her impatience in the same way that she resolves the quarrel between André and Simone—by suggesting that her college love affair with math was a helpful “preamble” to her career as a novelist. Math, like fiction, involves world making, the exploration of “a kind of alternative universe.”

Olsson’s writing style clinches these reconciliations. On one level, the book reads like a mathematical conjecture, offering conditional statements about one thing (André’s math) based on its similarities to another (Simone’s spirituality). And Olsson’s description of “the best kind of mathematical proof” could double as a

description of her own prose: “clean and powerful.”

On another level, the book reads like one of the thick exercise books in which Simone scribbled bold apothegms about love and detachment alongside personal notes, quotations from Homer, and calculations in trigonometry—except in Olsson’s case, the apothegms are tentative, the quotations are from Anne Carson, and the calculations are nostalgic references to function machines. In other words, *The Weil Conjectures* reads like Simone’s book *Gravity and Grace* as written for Generation X.

I worry, though, that Olsson gives André the last word on the accessibility of math. For all her rhapsodizing about the “eros” of doing math, she rarely discusses the math she invokes, instead complaining about her supposed limitations as a mathematical thinker. She is not like “the true math people” she met in college, “the wunderkinds, the superstars”—she’s “just the ordinary type of smart.” André’s work “is over my head,” she claims, so much so that she fears asking a professional mathematician to explain it to her: “In my mind I am that deaf person, nagging a composer to explain a symphony.” Contrary to what this statement might suggest, mathematicians can make seemingly esoteric math accessible to people who are “just the ordinary type of smart.” (See, for example, *Quanta Magazine*.)

All this math-is-over-my-head talk troubles me, coming as it does from a woman who studied math in college but felt “intimidated” by her male “quote-unquote peers,” in a book about another woman who loved math but felt inadequate next to her older brother.

Virginia Woolf wrote in 1929 that for centuries women “have served” as funhouse mirrors in which a father or a brother or a husband “can see himself at breakfast and at dinner at least twice the size he really is.” If Shakespeare had “a sister with a gift like her brother’s,” Woolf imagines, his sister would have “dashed her brains out on the moor or mopped and mowed about the highways crazed with the torture that her gift had put her to.” Simone apparently understood her brother’s research much better than she ever let him know. She died by self-starvation at 34. Woolf predicted it would be “another century or so” before women stopped being mirrors and started being makers. I’m ready for a world in which the mathematician’s sister can put on the body that she so often laid down.