

The Miracle and Madness of Science That Changed the World

Benjamín Labatut's novel "The Maniac" examines the dawn of the nuclear age and the brilliant, sometimes troubled minds behind it.

By Tom McCarthy

Tom McCarthy's latest novel is "The Making of Incarnation."

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THE MANIAC, by Benjamín Labatut

In an 1897 letter to his friend Robert Cunninghame Graham, Joseph Conrad lays out his worldview. "There is — let us say — a machine," he writes. "It evolved itself (I am severely scientific) out of a chaos of scraps of iron and behold! — it knits. I am horrified at the horrible work and stand appalled. I feel it ought to embroider — but it goes on knitting."

He's just getting started. As his conceit moves through its gears, his horror deepens. "The infamous thing has made itself: made itself without thought, without conscience, without foresight, without eyes, without heart," Conrad shudders. "It knits us in and it knits us out. It has knitted time, space, pain, death, corruption, despair and all the illusions — and nothing matters."

"Severely scientific": The tension between this ultrarational label and the poetic (if fatalistic) imagery that follows makes the vision even more unsettling. It's exactly the type of tension that runs through Benjamín Labatut's new book, "The Maniac," behind whose pages Conrad's phantasmic knitting machine seems to hum along without pause.

In an early passage, an infant John von Neumann gawks at the Jacquard loom his father has brought home, "a giant metal insect with 10,000 legs, gobbling up instructions and excreting silken threads like a deformed and aged spider," wondering how punch cards can turn into patterned fabric. ("How could holes transmit information?" he asks.) He crawls beneath it, "fondling" and even dismantling it in an attempt to decipher its mysteries.

Later we see von Neumann, as a math wiz working on the Manhattan Project, manifest the same fascination for computers that J. Robert Oppenheimer sets up. "We had to

physically restrain him to prevent him from taking those IBM machines apart,” his colleague Richard Feynman informs us. The code printout of another colleague, Nils Aall Barricelli, is pictured as “gorgeous filigrees of dots and lines that intermingled, fused and then tore apart like the teeth of a broken zipper.” And von Neumann himself, having gained ascendancy within the project (and far beyond) after appropriating this blueprint, is described by a disgruntled Barricelli as “a gluttonous spider on the web that ties all military and government interests.” Decades after Conrad’s letter, it seems, man has turned into the fate-loom; the machine is us.

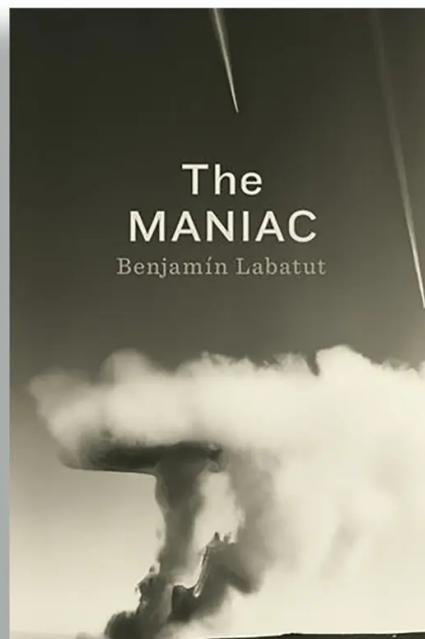
Most of “The Maniac” focuses on the life and times of von Neumann (1903-57), as filtered through remembrances by family members, friends and foes (borders between these groups are rather porous). It’s a study of historical, intellectual and, not least, political exchanges that reshaped an era. Beyond its mid-20th-century viewfinder, though, it quickly becomes clear that what “The Maniac” is really trying to get a lock on is our current age of digital-informational mastery and subjection. When von Neumann proclaims that, thanks to his computational advances, “all processes that are stable we shall predict” and “all processes that are unstable we shall control,” we’re being prompted to reflect on today’s ubiquitous predictive-slash-determinative algorithms. When he publishes a paper about the feasibility of a self-reproducing machine — “you need to have a mechanism, not only of copying a being, but of copying the instructions that specify that being” — few contemporary readers will fail to home straight in on the fraught subject of A.I.

Haunting von Neumann’s thought experiment is the specter of a construct that, in its very internal perfection, lacks the element that would account for itself as a construct. “If someone succeeded in creating a formal system of axioms that was free of all internal paradoxes and contradictions,” another of von Neumann’s interlocutors, the logician Kurt Gödel, explains, “it would always be incomplete, because it would contain truths and statements that — while being undeniably true — could never be proven within the laws of that system.”

This “ontological limit” — the unprovable truth — is “a mathematician’s nightmare.” Moments like this are the hinges by which “The Maniac” opens out into its deeper (and, for me, more compelling) theme: the relation between reason and madness. Almost all the scientists populating the book are mad, their desire “to understand, to grasp the core of things” invariably wedded to “an uncontrollable mania”; even their scrupulously observed reason, their mode of logic elevated to religion, is framed as a form of madness. Von Neumann’s response to the detonation of the Trinity bomb, the world’s first nuclear explosion, is “so utterly rational that it bordered on the psychopathic,” his second wife, Klara Dan, muses; the game theory-derived system of mutually assured destruction he devises in its wake is “perfectly rational insanity,” according to its co-founder Oskar Morgenstern.

Pondering Gödel's own descent into mania, the physicist Eugene Wigner claims that "paranoia is logic run amok." If you've convinced yourself that there's a reason for everything, "it's a small step to begin to see hidden machinations and agents operating to manipulate the most common, everyday occurrences." One could say the same for the rationale of QAnon — or its paranoid-psychotic and yet technologically modern predecessor National Socialism, which the mathematician Gabor Szego glosses as "the madness that was coming," even as he notes that fanaticism, in the 1930s, "was the norm ... even among us mathematicians."

In a wonderfully counterintuitive volte-face, though, Labatut has Morgenstern end his MAD deliberations by pointing out that humans are not perfect poker players. They are *irrational*, a fact that, while instigating "the ungovernable chaos that we see all around us," is also the "mercy" that saves us, "a strange angel that protects us from the mad dreams of reason."



A couple of friends of mine who'd liked Labatut's debut, "When We Cease to Understand the World," blinked when I told them I'd be reviewing his new "novel." "The Maniac" does, by and large, assume the guise of fiction — first-person accounts, occasional stream-of-consciousness — but I did find myself wondering what it gained from this that a (minor and essentially rhetorical) tweak into long-form journalism would retract.

At its best, as in the stunning opening sequence reconstructing the murder-suicide of the physicist Paul Ehrenfest and his disabled son, or in the final section's gripping

account of a computer defeating the world's best human Go player, you just throw up your hands and think, *Who cares what discourse label we assign this stuff? It's great.* The fiction-versus-nonfiction question doesn't really have an answer anyway, for the good reason that the novel has always, since its inception, been a hybrid, impure form, stranded (as the most cursory glance at Defoe, Behn or Sterne, never mind Acker, Burroughs or Heti, will demonstrate) between the various stools of epic poetry, the essay, theological-cum-personal confession and so on. It is, to borrow Gödel's term, incomplete, right down to its (missing) core.

If there is a critique to be leveled at Labatut, it falls in the realm not of genre but of gender. Amid — or, more aptly, beneath — the panoply of brilliant men in "The Maniac," women function as bit players. At Los Alamos they're even called "computers," since they carry out the secondary, workaday calculations that are then fed upward for male geniuses to work their magic on. But does von Neumann really deserve the title "Father of Computers," granted him here by his first wife, Mariette Kovesi? Doesn't Ada Lovelace have a prior claim as their mother? Feynman's description of the Trinity bomb as "a little Frankenstein monster" should remind us that it was Mary Shelley, not von Neumann and his coterie, who first grasped the monumental stakes of modeling the total code of life, its own instructions for self-replication, and that it was Rosalind Franklin — working alongside, not under, Maurice Wilkins — who first carried out this modeling.

To be fair, Labatut's not unaware of this. If he can't retro-populate White Sands with female leads, he at least grants his women broader, more incisive wisdom. Ehrenfest's lover Nelly Posthumus Meyjes delivers a persuasive lecture on the Pythagorean myth of the irrational, suggesting that while scientists would never accept the fact that "nature cannot be cognized as a whole," artists, by contrast, "had already fully embraced it." The mathematician Martin Davis's wife, Virginia, storms out of a Trinity dinner party, condemning the men's failure to fully take on board the consequences of their atom splitting. She is a textile artist — a hanging detail that points back toward the novel's many looms and weavings.

For the Greeks, the fates spinning the threads of human lives were female (as Conrad knew, recasting them as Belgian secretaries in "Heart of Darkness"). So was Theseus' wool-ball navigator, Ariadne. And so, too, was the Ithacan ur-weaver Penelope, whose perpetual making and unraveling of her tapestry beat Gödel to an incompleteness theory by thousands of years.

"Text," by the way, means something woven, from which we get "textile." It might just be that Penelope was not only testing her own version of the ontological limit, but also embedding it — in absent form, a hole — within the weft and warp of what we would eventually call the novel.

THE MANIAC | By Benjamín Labatut | 354 pp. | Penguin Press | \$28

A correction was made on Oct. 12, 2023: An earlier version of this review, citing an uncorrected advance copy of Labatut's novel, misstated the name of the mathematician Martin Davis's wife. Her name was Virginia Davis, not Lydia.

When we learn of a mistake, we acknowledge it with a correction. If you spot an error, please let us know at nytnews@nytimes.com. [Learn more](#)

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