

PROLOGUE

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Emil Konopinski felt happiest with the men who stole fire from the gods and unleashed it upon the Earth.

He walked along Bathtub Row toward Fuller Lodge with Enrico Fermi, Herbert York, and Edward Teller. They'd grown close during the frenetic years of the Manhattan Project as they struggled to loose the strong force of the atom.

And now that Russia had the bomb years earlier than expected, they'd returned to the towering Ponderosa Pines and sculpted mesas of Los Alamos to build something far more deadly.

Konopinski was thrilled to be back. During the Manhattan Project he'd felt so alive, so consumed by purpose. Working alongside such luminaries on the most complex problems ever tackled by humanity was the greatest privilege of his life. Unlike most people, they spoke his language and thought his thoughts. He felt known, and he loved each of them for it, even Edward Teller.

Such minds thrived on ideas, which ranged from the profound to the absurd. Often the two were difficult to tell apart. Herbert York, who at twenty-eight was by far the youngest, kept the conversation anchored on the absurd. He spoke with enthusiasm that bordered on manic. His arms flailed in wide gyrations. Between his black hair, olive skin, and expressiveness, people often assumed he was Italian instead of Native American.

“Acceleration alone makes it impossible,” York said. “Ignoring relativity, constant acceleration at 1G would require a year to reach light speed. And then what of deceleration? Another year to make it physically bearable?”

Enrico Fermi walked beside York. Despite being an actual Italian, he moved with subdued grace and spoke with gentle eloquence. He strolled with hands clasped behind his back, stooped forward at a slight angle. Recent years hadn't been kind to Fermi. His body, always lithe but strong, now appeared fragile. His thick black hair had thinned to salty wisps that fluttered in the gusts. They seemed in danger of flying away.

Fermi shrugged his thin shoulders. “Perhaps the aliens evolved on a much larger planet and adapted to higher gravitation.”

“Unlikely.” Edward Teller's gloomy voice resonated from beside Konopinski. “We have yet to put a satellite in orbit. Imagine the liftoff delta-v on a large planet.”

Konopinski smiled as he watched Teller's huge eyebrows flutter in the wind. He made a quick calculation, and decided that Teller's eyebrows had a parasitic drag coefficient three times greater than that of an average man.

"If they can reach faster-than-light speeds, they'd have enough power to get off the ground," York said.

"Interstellar travel would be risky and would require enormous resources," Teller said. "Why go through the effort at all?"

Konopinski remembered a New Yorker cartoon. "Aliens developed interstellar travel to steal New York's trash cans."

Everyone laughed but York, who looked confused. "What are you talking about?"

Fermi patted York on the shoulder. "When you grow up and read the New Yorker, you'll get the adult jokes."

Even though Fermi had spoken with his customary warmth, Konopinski felt for the young man. He knew what it was like to be the youngest in such a group.

Fermi looked over his shoulder at Teller. "Edward, what do you feel is the probability that we will discover faster-than-light objects in the next ten years?"

"Ten to the negative six," Teller said without hesitation.

"That's much too low," Fermi said. "The real number is closer to ten percent."

"That is a reasonable guess if one believes in miracles," Teller said.

This led to a flurry of off-the-cuff calculations. Variables were considered and thrown out

at an alarming rate.

As he listened to Teller contradict Fermi, Konopinski felt his body flood with negative emotion. He recalled a conversation from a recent conference. In a rare moment of candor and condemnation, his old colleague Isador Rabi had asked Konopinski why he was helping Teller create the Super.

“Do you not see that Teller is the most dangerous man alive?” Rabi had said. “An enemy of all that is good on this earth?”

Konopinski had defended Teller and his own work, but those words had haunted him for weeks. Did Teller’s unrelenting obsession with building a hydrogen bomb make him the most dangerous man on earth? Or a realist who knew that thermonuclear weapons would be developed no matter what, and that it was his duty to make them first where he might wield some influence over their deployment?

It occurred to Konopinski that the human mind’s capacity for evil was only surpassed by its capacity for justification and self-absolution.

Konopinski decided to think on other things before the darkness took hold. He looked out to the distant mesas and the storm clouds piled up against their red and white rock cliffs. Bright shafts of sunlight punched through the tempests and highlighted random pine groves. The wind rushed through the pine trees and carried the rich scent of summer rain mixed with the pungent odor of fresh asphalt. It was a beautiful day. Fermi was in town. He had much to be grateful for.

The group arrived at Fuller Lodge and went through the lunch line. Despite having eaten many meals in the lodge, Konopinski marveled at the beauty of its walls and vaulted 19-foot ceilings constructed from more than 700 Giant Ponderosa Pines harvested nearby.

The conversation had shifted to whether Einstein's field equations allowed for aliens to use warp bubbles or travel through tubes between distant points to get around the light speed limit.

"This is assuming they even exist," Teller said. "I am far from convinced."

York had worked himself back into an animated frenzy. Konopinski was seated beside York, and worried that his wild gestures would send his plate into low earth orbit.

"It's simple probability," York said. "If there are billions of stars, there may be orders of magnitude more planets—many in habitable zones. There could be millions of advanced societies out there. Perhaps some are much closer to us than we think."

Konopinski felt compelled to join in. "Think of the progress we have made in the past one hundred years. What if they've been working on these problems for a thousand, or a million?"

The group sat in silence for a long moment amid the din of clinking plates and of a dozen conversations at other tables about ideas running the gamut from the absurd to the profound.

Perhaps to mimic York, Fermi raised his hands in a grand gesture of frustration. "Well, then, where is everybody?"