

## A Winter Night

### *Manhattan, Winter 1950*

She was an old woman who loved sex and she had spent forty years seeking a way to make it better. Though her red hair had gone gray and her heart was failing, she had not given up. Her desire, she said, was as strong and simple as ever: She wanted a scientific method of birth control, something magical that would permit a woman to have sex as often as she liked without becoming pregnant. It struck her as a reasonable wish, yet through the years one scientist after another had told her no, it couldn't be done. Now her time was running out, which was why she had come to an apartment high above Park Avenue to meet a man who was possibly her last hope.

The woman was Margaret Sanger, one of the legendary crusaders of the twentieth century. The man was Gregory Goodwin Pincus, a scientist with a genius IQ and a dubious reputation.

Pincus was forty-seven years old, five feet ten and a half inches tall, with a bristly mustache and graying hair that shot from his head in every direction. He looked like a cross between Albert Einstein and Groucho Marx. He would speed into a room, working a Viceroy between his yellowed fingers, and people would huddle close to hear

what he had to say. He wasn't famous. He owned no scientific prizes. No world-changing inventions were filed under his name. In fact, for a long stretch of his career he had been an outcast from the scientific establishment, rejected as a radical by Harvard, humiliated in the press, and left with no choice but to conduct his varied and oftentimes controversial experiments in a converted garage. Yet he radiated confidence as if he knew the world would one day recognize his brilliance.

Pincus was a biologist and perhaps the world's leading expert in mammalian reproduction. In the 1930s, at the start of his professional career, he'd attempted to breed rabbits in Petri dishes using much the same technology that decades later would lead to *in vitro* fertilization for humans. Then he was young and handsome and possessed of a limitless imagination. He posed for newspaper photographs and boasted to reporters that a new age of human reproduction was on the horizon, one in which men and women soon would employ modern methods to control the process of making babies. Science would lead the way.

But Americans were not ready to hear such things. The press compared him to Victor Frankenstein, Mary Shelley's fictional scientist, who tried to conjure life but accidentally created a monster. Harvard denied Pincus tenure, and no other university would hire him. He was deemed too dangerous.

At that point, a more humble man might have chosen a new line of work. A weaker man might have succumbed to anger or despair. But not Goody, as his friends and family called him, as much for his friendly nature as his middle name. For while Pincus was affectionate and disarming in social settings, when it came to his career he was, as one colleague put it, "a street-fighting Jew." Getting knocked down was merely the thing that happened before Pincus got up to fight again. When Harvard dumped him and no other job offers arrived, he moved to Worcester, Massachusetts, a factory town, where a former colleague from Harvard had offered him a low-paying, low-ranking position as a researcher for Clark University. He worked in

a basement lab where dust from a nearby coal bin contaminated his experiments. When he asked the university to provide him a proper laboratory, the request was denied.

Again, he might have quit. Instead, Pincus and one of his colleagues, Hudson Hoagland, did something unprecedented: they launched their own scientific research center. They went door to door in Worcester (pronounced *wuhstah*, in the local tongue) and the surrounding area, distributing brochures and asking housewives, plumbers, and hardware store owners to contribute—no donation too small—to a new institution they called the Worcester Foundation for Experimental Biology. With the money they scraped together, they bought an old house in nearby Shrewsbury, where Pincus set up his office and lab in the garage. The operation was so lean in those early years that he cleaned his own animal cages and, at one even lower moment, moved his wife and children into a state-run insane asylum while conducting research there on schizophrenia.



Pincus knew about Sanger. Almost everyone in America did. It was Sanger who had popularized the term “birth control” and almost single-handedly launched the movement for contraceptive rights in the United States. Women would never gain equality, she had argued, until they were freed from sexual servitude. Sanger had opened the nation’s first birth control clinic in Brooklyn in 1916 and helped launch dozens more around the world. But even after decades of work, the contraceptive devices available at those clinics—condoms and cervical caps, mostly—remained ineffective, impractical, or difficult to obtain. It was as if she’d been teaching starving people about nutrition without giving them anything healthy to eat. Sanger explained to Pincus that she was looking for an inexpensive, easy-to-use, and completely foolproof method of contraception, preferably a pill. It should be something biological, she said, something a woman

could swallow every morning with her orange juice or while brushing her teeth, with or without the consent of the man with whom she was sleeping; something that would make sexual intercourse spontaneous, with no forethought or messy fumbling, no sacrifice of pleasure; something that would not affect a woman's fertility if she wished to have children later in life; something that would work everywhere from the slums of New York to the jungles of southeast Asia; something 100 percent effective.

Could it be done?

The other scientists she'd approached, every one of them, had said no, and they had given her a long list of reasons. It was dirty, disreputable work. The technology wasn't there. And even if it somehow could be done, there would be no point. Thirty states and the federal government still had anti-birth-control laws on the books. Why go to the trouble of making a pill no drug company would dare to manufacture and no doctor would dare prescribe?

But Sanger held out hope that Gregory Pincus was different, that he might be bold enough—or desperate enough—to try.



It was the midpoint of the century. Scientists were taking up matters of life and death that once had been the domain principally of artists and philosophers. Men in lab coats—and yes, they were almost all men—were heroes, winners of wars, battlers of disease, givers of life. Malaria, tuberculosis, and syphilis were among the many illnesses surrendering to modern medicine. Governments and giant corporations poured unprecedented sums of money into research, sponsoring everything from high school science clubs to cold fusion exploration. Health became a political issue as well as a social one. World War II had scarred the earth but also transformed it, offering the promise of a better, freer world, and scientists were leading the way.

Americans were settling into new suburban box homes and exploring the joys of lawn care, dry martinis, and *I Love Lucy*. At least to the casual observer, the United States in the early 1950s appeared staid and steadfast. The Andrews Sisters sang “I Wanna Be Loved” and John Wayne starred in *Sands of Iwo Jima*, celebrating the nation’s military might and commitment to democratic ideals.

It was a glorious time to be an American. Young men returning from battle were looking for new adventures and new ways to feel like heroes as they adjusted to the dullness of their homes, marriages, and jobs. During the war, new rules of morality had applied. Sex had become a more casual endeavor as foreign women traded their bodies to American soldiers for cigarettes and cash. Girlfriends back home had written steamy letters filled with promises of the great passion awaiting their men. In truth, many of the women back home had been exploring their own new moral standards. The war had thrust women into the workplace, putting money in their pockets and liberating them from their parental homes. They’d begun dating and making love to men they did not intend to marry, experimenting with new ideas about intimacy and commitment. In 1948, a college professor in Indiana named Alfred Charles Kinsey published a study called *Sexual Behavior in the Human Male*, to be followed five years later by *Sexual Behavior in the Human Female*, and found that people were much friskier than they cared to admit, with 85 percent confessing to premarital sex, 50 percent acknowledging extramarital affairs, and almost everyone saying they masturbated. It would turn out that Kinsey was perhaps biased in his conclusions, but the impact of his work was nevertheless profound. In 1949, Hugh Hefner, a graduate student in sociology at Northwestern University, read Kinsey’s report and wrote a term paper arguing for an end to the repression of sex and sexuality in America. “Let us see if we cannot begin to find our way out of this dark, emotional, taboo-ridden labyrinth and into the fresh air and light of reason,” Hefner wrote, as he began preparing to do something about it personally.

Late one winter night in Manhattan, Margaret Sanger met Gregory Pincus to talk about nothing less than a revolution. No guns or bombs would be involved—only sex, the more the better. Sex without marriage. Sex without children. Sex redesigned, re-engineered, made safe, made limitless, for the pleasure of women.

Sex for the pleasure of women? To many, that idea was as unthinkable in 1950 as putting a man on the moon or playing baseball on plastic grass. Worse, it was dangerous. What would happen to the institutions of marriage and family? What would happen to love? If women had the power to control their own bodies, if they had the ability to choose when and whether they got pregnant, what would they want next? Two thousand years of Christianity and three hundred years of American Puritanism would come undone in an explosion of uncontrollable desire. Marriage vows would lose their meaning. The rules and roles of gender would be revocable.

Science would do what the law so far had not; it would give women the chance to become equal partners with men. This was the technology Sanger had been seeking all her life.

So, in a sleek Park Avenue apartment where long threads of cigarette smoke floated toward the ceiling, Sanger gazed across a coffee table at Pincus and made her pitch. She was seventy-one years old. She needed this. So did he.

“Do you think that it would be possible . . . ?” she asked.

“I think so,” Pincus said.

It would require a good deal of research, he added, but, yes, it was possible. Sanger had been waiting much of her life to hear those words.

“Well,” she said, “then start right away.”



The next morning, Pincus gunned the engine on his Chevrolet, snaking in and out of traffic toward Massachusetts as Sanger’s plea snaked in

and out of his overactive brain. Driving was new to him. He had only recently inherited this, his first car, from a scientist who had moved abroad, and he was thrilled to discover the speed and power at his command. Driving, like so much else in his life, became a competitive sport. His passengers would white-knuckle their armrests and ask why he was in such a hurry, but Pincus, utterly calm behind the wheel, thought little of it. “This is just my cruising speed,” he would say.

The 180-mile journey was full of stops and starts. Interstate highways were yet to come; for now, there were narrow, two-lane roads with slow-downs for school zones and train tracks. The long drive through cold, gray towns and hibernating farm plots gave Pincus time to reflect on his meeting with Sanger.

For as long as men and women have been making babies they’ve also been trying not to. The ancient Egyptians made vaginal plugs out of crocodile dung. Aristotle recommended cedar oil and frankincense as spermicides. Casanova prescribed the use of half a lemon as a cervical cap. The most popular and effective form of birth control in the early 1950s was the condom, a simple device that dated to the mid-1500s when the Italian doctor Gabriele Falloppio tested a “linen cloth made to fit the glans” to prevent the spread of syphilis. Since Falloppio, though, not much had changed. Condoms became cheaper and more widely available when the Goodyear company began vulcanizing rubber in the 1840s. Crudely fitted cervical caps—an early form of the diaphragm—began to appear at roughly the same time. But in the century that followed, little thought and even less effort had gone into innovation in the field. Pincus had no interest in those antiquated approaches. In his mind, inventing a birth-control pill—inventing anything, for that matter—did not have to be complicated. It was like driving. Step one: Choose your destination. Step two: Select a route. Step three: Try to get there as quickly as possible.

Instead of heading home, he drove to his office at the Worcester Foundation for Experimental Biology to speak with one of his

researchers, M. C. Chang. By 1950, Pincus and Hoagland had moved the Foundation from a renovated barn in Worcester to an ivy-covered brick home in a residential section of nearby Shrewsbury. “Outsiders have sometimes called the two-story Foundation building ‘the old ladies’ home,’” noted the *Worcester Telegram*. “That’s what it looks like from the Boston Post Road which runs by the door.”

Pincus and Hoagland did their best to make the old ladies’ home look like a hall of science. They converted the sun porch to a library. Bedrooms became laboratories. One bedroom-turned-laboratory became a bedroom again when Chang arrived from China by way of Scotland and England to work with Pincus. Though Chang spoke little English, Pincus had spotted something in the scientist, enticing him to join the Foundation for the paltry salary of \$2,000 a year (or about \$26,000 by today’s standards). Chang, who knew Pincus by reputation, thought he would be working in one of America’s prestigious institutes and that his fellowship would include free lodging, perhaps on campus, or at least nearby. He did get free lodging, but his room was at the YMCA. He and Pincus would travel to and from work by bus. Later, he would move to the Foundation, sleeping on a small bed in the corner of a converted laboratory and using Bunsen burners to heat his meager meals. As a strict Confucian, Chang didn’t mind. He reported proudly that for one important experiment in 1947 he had stored fertilized rabbit eggs in his kitchen refrigerator.

Pincus told Chang that he had spoken to Margaret Sanger about her desire for a pill to prevent pregnancy. It had to be a pill, he explained, not an injection, jelly, liquid, or foam, and not a mechanical device used in the vagina. When Pincus talked in this way—with a sense of purpose, hands chopping at the air, his eyes glittering beneath those bushy brows—his colleagues paid attention.

Goody Pincus was not one of those soft-spoken geniuses content to let his work speak for itself. He was a powerfully built man with a lean, muscular frame. Though his suits and ties were invariably cheap and



occasionally mismatched, he nevertheless carried himself with aristocratic self-possession. His voice was stentorian. Confidence was one of his strongest tools. He understood something many scientists did not: that scientific exploration and experimentation were only parts of the job; another equally important part was selling. An idea, no matter how good, might easily die if it were not aggressively pitched—to other scientists, to backers with deep pockets, and, ultimately, to the public. It was the selling that had helped sink him at Harvard, but Pincus was undeterred. He knew from the start that it would be one thing to build a birth-control pill and another to persuade the world to accept it. The scientist attempting such a task would have to be prepared to do both, or there would be little point trying.

Pincus and Chang discussed a scientific paper from 1937—“The Effect of Progesterin and Progesterone on Ovulation in the Rabbit,” by A. W. Makepeace, G. L. Weinstein, and M. H. Friedman of the University of Pennsylvania. It reported that injections of the hormone progesterone prevented ovulation in rabbits. Though it had been a huge discovery at the time, no one had tried to explore the implications for humans. There were many reasons. For one thing, scientists weren’t seeking innovations in contraception. There was neither prestige nor money in the work, only risk. And even if they had tried, progesterone was too expensive at that time to be widely used.

But when Pincus met Sanger and listened to her plea, attitudes on birth control were shifting—at least a little. Perhaps more important, however, was the evolution then taking place in the field of biology. Scientists were beginning to understand the inner workings of the body well enough to tinker with them. Before the 1950s drugs were mostly developed with the “suck-and-see” approach, as the British referred to trial-and-error experiments. A scientist would concoct a formula in a lab, gulp it down like Dr. Jekyll, and see what effects it had. But those days were nearing an end. Pincus and Chang knew how progesterone functioned. Now the task was to see if they could

produce it, modify it, and put it to use. Fortunately, new technology was making progesterone less expensive to obtain. If Sanger would pay for it, Pincus thought he had a good idea of how to proceed.

Pincus was no mere scientific technologist. He had the soul of a romantic. He looked to nature not only for answers but also for beauty. And here was something beautiful. Between puberty and menopause, women normally produce an egg roughly every twenty-eight days from one of their ovaries. The egg migrates down the fallopian tube to the uterus. If the woman has sex with a man and the man ejaculates, five hundred million sperm fight to fertilize her egg. If the egg is not fertilized, it can't implant itself in the lining of the womb, and if it can't implant itself, it is discharged along with the lining of the uterus. If it is fertilized, after about six days the egg can attach to the wall of the uterus, where the woman's blood will nourish it through the placenta. During this gestation, pregnancy begins: A zygote becomes an embryo and an embryo becomes a fetus. Two sex hormones, estrogen and progesterone, guide this process. Pincus focused largely on progesterone.

Often referred to as the pregnancy hormone, progesterone regulates the condition of the inner lining of the uterus. When an egg is fertilized, progesterone prepares the uterus for implantation and shuts down the ovaries so no more eggs are released. In effect, Pincus recognized, nature already had an effective contraceptive. Progesterone was preventing further ovulation to allow the fertilized egg to grow safe from harm. What if the same contraceptive could be delivered in a tablet form, effectively tricking the woman's body into thinking that it was already pregnant? A woman would be able to shut down ovulation any time she liked for as long as she liked. If she didn't release eggs, she couldn't become pregnant.

To Pincus, it was a solution elegant in its simplicity. It wasn't new. It wasn't radical. It was merely a matter of thinking differently about how to solve a problem.

He and Chang began by repeating the experiment done in Pennsylvania, adjusting the dosages and means of delivery to get a feel for progesterone and how it worked. They started with rabbits. Pincus sent a request for funding to the Planned Parenthood Federation of America, the women's health and advocacy group that Sanger had helped found. He asked for \$3,100: a \$1,000 stipend for Chang, \$1,200 for the purchase of rabbits, \$600 for animal food, and \$300 for miscellaneous supplies.

"I have \$2,000, perhaps a little more," Sanger wrote to Pincus a few weeks after their meeting. "Will this do?"

"The amount was ludicrous," Pincus recalled, "but I at once replied, 'Yes.'"