Frontispiece: Simulmatics Corporation at the *New York Times*, 1962.

First Edition

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Contents

PROLOGUE

What If?

The mystery surrounding Simulmatics started with its name.

—Statement to Simulmatics Corporation stockholders, 1966

The geodesic dome in Wading River, Long Island, where Simulmatics met in 1961, with the Greenfields' house to the right.

The scientists of the Simulmatics Corporation spent the summer of 1961 on a beach on Long Island beneath a geodesic dome that looked as if it had landed there, amid the dunes, a spaceship gone to ground. [1] Inside, they wrote mathematical formulas on blackboards. Chalk dusted their fingertips. Reams of perforated computer printouts unfurled across the floor.

The Simulmatics Corporation, Cold War America's Cambridge Analytica, claimed credit for having gotten John F. Kennedy elected president of the United States in November 1960. Months later, its scientists spent a summer at the beach planning new projects for their invention: a computer program designed to predict and manipulate human behavior, all sorts of human behavior, from buying a dishwasher to countering an insurgency to casting a vote. They called it the People Machine. [2]

Hardly anyone, almost no one, remembers Simulmatics anymore. But beneath that honeycombed dome, the scientists of this long-vanished American corporation helped build the machine in which humanity would, by the twenty-first century, find itself trapped and tormented: stripped bare, driven to distraction, deprived of its senses, interrupted, exploited, directed, connected and disconnected, bought and sold, alienated and coerced, confused, misinformed, and even governed. They never meant to hurt anyone.

They were young men, the best and the brightest, fatally brilliant, Icaruses with

wings of feathers and wax, flying to the sun. "The scientists are from the Massachusetts Institute of Technology, Yale, Harvard, Columbia and Johns Hopkins," the *New York Times* reported. "They are preparing to work with electronic computers, the giant question-answering devices in use for some years, but are using social and economic data and their own knowledge to work out new programs for computer simulation, the name given to the technique of acting out, so to speak, all the probabilities that might flow from a given set of circumstances." [3] They wrote in a new language, FORTRAN, using an expression known as an IF/THEN statement to instruct a computer to simulate possible actions and calculate their consequences, under different conditions, again and again and again. IF this, THEN that. IF this, THEN that. IF this, THEN that, an infinity of outcomes.

To the beach that summer, they brought their wives and their children. The men wore bathing trunks and polo shirts and pondered punch cards; the women wore summer dresses and sandals and made potato salad and tuna salad and barbecue and macaroni salad and ham salad and pots of stew and piles of corn on the cob; their children—seventeen of them in all—waded in the ocean and built sandcastles, Camelots-by-the-sea, and sailed one-masted Sunfishes and chased a black poodle named Sputnik up and down the beach and over the creek. The children got so badly sunburned that at night their mothers doused them with vinegar to cool their skin: they smelled like pickles. On rainy days, they played Monopoly, hopscotching from Park Place to the B. & O. Railroad, collecting two hundred dollars every time they passed Go, and trying, as all monopolists must, to keep out of jail. The wives traded paperback copies of *Peyton Place*, a steamy novel about sex and female rebellion, its pages wilted from the humidity. [4] And everything, and everyone, was covered with sand, as if, if they'd stayed there long enough, they'd have been buried, like ancient Egyptians.

The sun rises, the sun sets, and still no one ever really knows what will happen next. In a world of endless uncertainty, the forecasting of the future began with the very oldest human societies. The Greeks built a shrine to the Oracle of Delphi; the Incas built a temple to the Oracle at Pachacamac. Buddhists, Muslims, Christians, Jews, every religion, every culture: all have had their prophets and their temples, their diviners, their readers of omens, their seers. Time passed, centuries, millennia. And then, beginning in the middle decades of the twentieth century, Americans began building machines meant to serve as their oracles, new seers, electronic prophets, diviners of data.

Founded in 1959, the Simulmatics Corporation established offices in New York, Washington, Cambridge, and, eventually, Saigon before it declared bankruptcy, in 1970. The company wore a cloak of intrigue. This was, in part, unintentional. "The mystery surrounding Simulmatics started with its name," its president once explained to the company's stockholders. "We were a contraction of two words—'simulation' and 'automatic.' " [5] Its founders hoped the name would become a watchword, a byword, like "cybernetics." It did not. The obscurity of the word "simulmatics" is a measure of their failure. But its meaning is a measure of their ambition: to automate the simulation of human behavior.

The scientists of the Simulmatics Corporation acted on the proposition that if they could collect enough data about enough people and feed it into a machine, everything, one day, might be predictable, and everyone, every human mind, simulated, each act anticipated, automatically, and even driven and directed, by targeted messages as unerring as missiles. Facebook, Palantir, Cambridge Analytica, Amazon, the Internet Research Agency, Google—they were all incubated there, beneath that honeycombed dome by the edge of the gray-green sea, like so many eggs.

Simulmatics' scientists were known as the What-If Men. They believed that by

simulating human behavior, their People Machine could help the human race avert each and every disaster. It could defeat communism. It could counter insurgencies. It could win elections. It could sell mouthwash. It could accelerate news, like so much amphetamine. It could calm agitated wives. It could win the war in Vietnam by targeting hearts and minds. It could predict race riots, and even plagues. It could end chaos. The scientists of Simulmatics believed they had invented "the A-bomb of the social sciences." [6] They did not predict that it would take decades to detonate, like a long-buried grenade.

Still, even at the time, the People Machine seemed to many people to be a species of madness, a harbinger of a coming dystopia. In 1964, the Simulmatics Corporation served as the subject of two ominous novels. In Eugene Burdick's political thriller *The 480*, a barely disguised "Simulations Enterprises," equipped with hulking, sinster IBM computers, meddles with the 1964 U.S. presidential election. In Daniel F. Galouye's Simulacron-3, science fiction set in the year 2033, specialists in the field of "simulectronics" build a people machine—"a total environment simulator"—only to discover that they themselves don't exist and are instead merely the ethereal, Escherian inventions of yet another people machine. [7] After that, Simulmatics lived on, in fiction and film, an anonymous avatar. In 1973, the avant-garde German filmmaker Rainer Werner Fassbinder adapted Simulacron-3 into *World on a Wire,* a terrifying futurist tour de force, a forerunner to the 1999 film *The Matrix* in which all of humanity lives in a simulation, locked, trapped, deluded, and dehumanized; *Matrix*'s main character, trying to set humanity free, hides stolen software inside a hollowed-out copy of Jean Baudrillard's 1981 book, *Simulacra and Simulation*, a metatext about the meaningless "hell of simulation." [8]

In fiction and film, Dr. Frankenstein yielded to Dr. Jekyll and, finally, to Dr. Strangelove, as mad science moved from biology to chemistry to physics. But Simulmatics' fiction-and-film avatar—the mad scientist of computer science—is wildly outsized, the lengthening shadow of a very small man. The Simulations Enterprises of *The 480* is a megacorporation, and the simulectronics specialists in Simulacron-3 are technical geniuses. The real Simulmatics Corporation was a tiny, struggling company, its technicians bumbling, its accounts disastrous. It soared and then it sank, like a helium balloon. The geodesic dome became a Space Burger, a drive-through hamburger joint.

And yet Simulmatics' legacy endures in predictive analytics, what-if simulation, and behavioral data science: it lurks behind the screen of every device. Simulmatics, notwithstanding its own failure, helped invent the data-mad and near-totalitarian twenty-first century, in which the only knowledge that counts is prediction and, before and after the coming of the coronavirus, corporations extract wealth by way of the collection of data and the manipulation of attention and the profit of prophecy. In a final irony, Simulmatics, whose very past has been all but erased, helped invent a future obsessed with the future, and yet unable to improve it.

Simulmatics' own origins lie still further back in time, in the early-twentieth-century science of psychological warfare: the control of people's minds by assault, interruption, and distraction. Simulmatics' scientists carried that work into the 1950s, the age of the modern computer, and into electoral politics, with a commission from the Democratic National Committee during the 1960 presidential election, and then into targeted advertising. Later, they flew that work across an ocean, to Vietnam, until student protesters called them war criminals.

It would be easier, more comforting, less unsettling, if the scientists of Simulmatics were villains. But they weren't. They were midcentury white liberals in an era when white liberals were not expected to understand people who weren't white or liberal. They were husbands and fathers in an age when men were not expected to understand women and children. By "human behavior," they meant the behavior of men; by

"artificial intelligence," they meant their own intelligence—a fantasy of their own intelligence—which they intended to graft onto a machine. They did not consider the intelligence of women to be intelligence; they did not consider a female understanding of human behavior to be knowledge.

They built a machine to control and predict what they could not. They are the long-dead, white-whiskered grandfathers of Mark Zuckerberg and Sergey Brin and Jeff Bezos and Peter Thiel and Marc Andreessen and Elon Musk. The Simulmatics Corporation is a missing link in the history of technology, a clasp that fastens the first half of the twentieth century to the beginning of the twenty-first, a future in which humanity's every move is predicted by algorithms that attempt to direct and influence our each and every decision through the simulation of our very selves, this particular hell.

If, then, in the 1950s and 1960s, things had gone differently, this future might have been averted. If, then, history had taken a different course, humanity might not have been demoted, humanistic knowledge might still be cherished, and democracy might have grown stronger, not weaker. Or very little might have been different. It is not possible to know. No machine can run an IF/THEN program backward, calculating possible pasts. History cannot answer "What if?" But it can explain what happened, and why.

The future invented by Simulmatics has a past, a history washed away, like a sandcastle, by the tide of time. It can only be pieced back together grain by grain, each parapet and battlement, each rampart and turret, every last feature of its towering audacity.

> The new underworld is made up of innocent and well-intentioned people who work with slide rules and calculating machines and computers which can retain an almost infinite number of bits of information as well as sort, categorize, and reproduce this information at the press of a button. Most of these people are highly educated, many of them are Ph.D.s, and none that I have met have malignant political designs on the American public. They may, however, radically reconstruct the American political system, build a new politics, and even modify revered and venerable American institutions—facts of which they are blissfully innocent.
>
> *—Eugene Burdick, The 480, 1964*

PART
ONE

The Social Network

Given that A knows B, what is the probability that B knows *n* persons in the circle of acquaintances of A?

—*Ithiel de Sola Pool, 1956*

The
inside
of
a
mainframe
computer,
c.
1956.

CHAPTER
1

Madly for Adlai

> It did Adlai Stevenson great harm, not having a wife, and trying to be funny all the time, too. Great harm.
>
> —*Gore Vidal, The Best Man, 1960*

Ed
and
a
pregnant
Patty
Greenfield,
with
Michael,
1954.

Ed Greenfield collected people the way other men collect comic books or old stamps or vintage cars. "Ed Greenfield," he'd say, flashing a made-for-TV, Dean Martin grin, slapping a back, clasping a hand, offering a vodka and tonic, palming a business card, *Edward L. Greenfield, President, Edward L. Greenfield & Co., 501* Madison *Ave.* He was like a ten-million-volt Looney Tunes electric magnet, a giant red-handled iron U that pulled everyone toward him, *plink, plink, plink.*

Greenfield founded the Simulmatics Corporation in 1959 and became its president, but the company was years in the making, and the use of computer technology to estimate probable human behavior, like any starry-eyed idea, involved scores of people. To pull off a big bank heist, you need a munitions expert, a surveillance guy, a computer whiz, a security team, a money man, and an all-around huckster. To pull off the computer prediction of human behavior, you need a political theorist, a mathematician, a behavioral scientist, a market researcher, a computer scientist, and an all-around huckster. Greenfield was the huckster. "If you see a frog sitting on top of a flag pole, you know it didn't get up there by itself," a very wise man once said. [1] Greenfield collected the men who figured out how to get the frog up there, watched them build the tools to do it, and then, when they were done, roped in a crowd, pointed to the top of the flag pole, and shouted, "Look, a frog!"

Ed Greenfield had thick, wavy black hair, a big nose, and jug-handle ears. He had wide shoulders and narrow hips and toothpick legs, misfit parts disguised by his custom-made suits. He was warm, loving, and affectionate and he was charming and he was sweetly funny and impossibly fun and he was sexy, in the way of a certain very dapper, animal of a man. He smoked Pall Malls, except when he was smoking a pipe that smelled like a campfire, of pine and night sky. He drank Scotch, in glasses made of crystal as clear as ice.

The future president of the Simulmatics Corporation was a Madison Avenue ad man —a "mad man"—and like all ad men, he sold nothing so well as himself. Born in

Chicago in 1927, he was the only child of Jacob Greenfield, an insurance salesman who used to be a Communist, and Theodora Rubenstein, the daughter of a rabbi. He had a neat little résumé: "Edward L. Greenfield, Public Relations, N.Y.C. Formerly Univ. of Chicago, Yale Law School." Most of these credentials were fake. He never graduated from the University of Chicago, or from Yale Law School, either. He went to Wabash College in Indiana for a year, in 1945, and then dropped out, and although he liked to tell people that he still owed the University of Chicago a library book, the University of Chicago has no record of his ever enrolling there. Neither does Yale Law School. [2] Still, he'd been to Yale and must've sat in on a seminar there, because once, when he applied for membership at the Yale Club of New York, Harold Lasswell, a dome-headed, grim-faced, world-famous Yale professor and expert on propaganda, vouched that Greenfield had studied with him in 1950. "Greenfield is a very convivial and attractive human being who has a very wide net of personal acquaintances in this country and abroad," Lasswell testified. [3] Very convivial. Very wide net. A fisherman, fisher of men.

When Ed Greenfield was in his early twenties, he met the very smart and very pretty and sometimes terribly sad Patricia Safford, a talented pianist and dancer who'd studied with Martha Graham. Patty Safford was born in 1928; her mother was a Vienna-trained Freudian analyst and her much older and much-married father, Frank Safford, was an eminent neurosurgeon and patron of the arts. She spent her summers at the family's forty acres of seaside and hills, a little village of cottages on Wading River, Long Island, with her father's friends: artists, writers, and intellectuals who included the painters Willem and Elaine de Kooning, the poet Edwin Denby, and the novelist Richard Wright. Denby and the de Koonings made silent films starring the Safford children, Patty in a swimsuit, her little brother in a rowboat, abducted by pirates, kidnapped by a witch, rescued at the last minute: fairy tales in black and white, tales of sorcery. [4]

In 1951, when Ed Greenfield and Patty Safford got married, Patty's father gave them, as a wedding gift, a rambling old wooden Victorian house on the beach. It had a fireplace made of stones from Long Island Sound. Next door, another of Frank Safford's friends, the visionary and eccentric architect Buckminster Fuller, would build for the Saffords one of his early geodesic domes, a shell of struts of aluminum and triangles of glass and porcelain, intricately balanced, a feat of engineering, a marvel, out of this world: the future summer headquarters of the Simulmatics Corporation. [5]

Ed Greenfield had big ideas and big ideals, big liberal ideas. For all his hucksterism, he was much more than an ad man: he was a philanthropist earnestly dedicated to midcentury American liberalism. He raised money for liberal causes, especially civil rights and civil liberties; he grabbed checks out of thin air, like a magician who pulls a nickel out from behind your ear. He served on the boards of the Fund for the Republic (which fought for the freedom of speech), the American Freedom of Residence Fund (which fought for desegregated housing), and Operation Crossroads Africa (a precursor to the Peace Corps). The civil rights attorney Harris Wofford, who would serve as John F. Kennedy's special assistant for civil rights and help found the Peace Corps in 1961, once advised Martin Luther King Jr., "Let me suggest that some time soon you try to talk with a good friend of mine, a very astute public relations man, Ed Greenfield." [6]

Very astute, my good friend, knows everyone. Very convivial. *So* fun. Warmhearted, witty. And that *laugh*. You'll love him. Very wide net. He was here, he was there, he was everywhere, the beautiful and clever Patty on his arm.

But for all his interests and acquaintances, Ed Greenfield's real passion was politics, Democratic politics, presidential politics. A huckster's game.

The People Machine began as a glint in Ed Greenfield's eye during the election of 1952, the first presidential election waged in the television age, the first presidential contest whose outcome was predicted by a computer, and the first presidential campaign orchestrated by a mass advertising firm. It was also, notably, a devastating loss for the Democratic Party.

Democrats had held the White House for two decades, since Franklin Delano Roosevelt's historic election in 1932. By 1952, liberalism, which crossed party lines, appeared triumphant, unassailable. This turned out to have been an illusion, but at the time, it was hardly questioned. In the 1930s, Democrats and Republicans had fought over Roosevelt's New Deal, with Democrats arguing for the regulation of business and banking, and Republicans opposed. And they'd fought over the United States' entry into the Second World War, with Roosevelt in favor and Republican isolationists opposed. But starting in 1941, in the let's-all-come-together war years, and after 1945, in the isn't-life-grand postwar years, the distance between the parties had narrowed. What did they have left to fight over? After the Cold War began, in 1949, opposition to a common enemy tended to smooth over whatever differences remained. Republicans were still the party of business and Democrats the party of labor but both parties were liberal, and by 1952, Americans could hardly tell Democrats and Republicans apart: Tweedledee and Tweedledum.

Given that the differences between the parties were so few, the contest in 1952 seemed less likely to turn on policy issues than on the two candidates' personalities, which made it a perfect campaign for Madison Avenue. This posed a problem for Democrats, since, with rare exceptions, Republicans made much better use of ad men than did Democrats, a problem that got a whole lot worse when the Democratic nominee, Adlai E. Stevenson, decided to run on a platform that included opposition to the influence of advertising agencies on American politics.

Advertising was booming. In 1935, the Manhattan phone book listed ten public relations firms. By the middle of the 1950s, that same phone book list covered seven columns and contained the names of more than seven hundred firms, including Edward L. Greenfield & Co. [7] During the Second World War, American manufacturers had churned out for the Allies not only arms and ammunitions but clothing and food and more. After the war, hoping not to close shop but instead to find new markets for consumer goods, manufacturers churned out everything from dishwashers to hair curlers to Barbie dolls. To sell these products—many of which no one had ever thought to make or own before—manufacturers turned to advertising agencies, whose industry, between 1950 and 1955, grew from $6 billion to $9 billion. "We don't sell lipstick," one manufacturer explained. "We buy customers." [8]

Political campaigns had begun turning to advertising agencies, too, saying, in effect, "We don't sell candidates, we buy voters." Shrewd observers greeted this development with alarm. In 1951, the fearless muckraker Carey McWilliams published an explosive three-part series in the *Nation*, a profile of a married couple, Clem Whitaker and Leone Baxter, who ran a California company called Campaigns, Inc., the first political consulting firm in the history of the world. [9] They'd opened shop in 1933, chiefly running political campaigns for Republican candidates. For a long time, they'd taken only California clients. But beginning in 1949, they'd engaged in a national campaign, and they'd won: retained by the American Medical Association, they'd defeated a national health insurance plan proposed by the Democratic president, Harry S. Truman —the last, unfinished work of the New Deal. The AMA paid Campaigns, Inc., $3.5 million. "This must be a campaign to arouse and alert the American people in every walk of life, until it generates a great public crusade and a fundamental fight for freedom," Whitaker and Baxter's Plan of Campaign began. "Any other plan of action, in view of the drift towards socialization and despotism all over the world, would invite

disaster." [10] When Whitaker and Baxter claimed that national health insurance amounted to socialized medicine, Truman fumed. Nothing in his bill, he insisted, "came any closer to socialism than the payments the American Medical Association makes to the advertising firm of Whitaker and Baxter to misrepresent my health program." [11] Whitaker and Baxter, McWilliams concluded, represented the new, cynical future of American politics. "This is expert political management," he wrote. "This is government by Whitaker and Baxter." [12]

For the Republican presidential nominee in 1952, Clem Whitaker and Leone Baxter liked the amiable and avuncular Dwight D. Eisenhower, former supreme commander of the Allied Expeditionary Force in Europe, a greatly admired war hero who had never been known to belong to either party. Eisenhower agreed to run out of a sense of duty to the country, even though he didn't think military men should occupy the Oval Office. He didn't enter the New Hampshire primary, but he won anyway, as a write-in, upsetting the conservative candidate, Robert Taft, an Ohio senator and the son of former president William Taft.

In 1952, most states didn't hold primaries and instead chose their nominees at state nominating conventions. Primaries weren't binding, and party leaders tended to ignore them. Instead, party leaders used polls to gauge the prospects of their candidates, and polls, of course, can be driven by advertising. Eisenhower won five primaries; Taft won six. But Eisenhower led in the polls. [13]

That summer, delegates to the Republican National Convention met in the International Amphitheatre, on the South Side of Chicago. Like a lot of big halls, it had originally been built for livestock shows: promenades of cattle. The convention was televised live, coast to coast, a first. Eisenhower won on the first ballot. To balance the ticket, party leaders connived to anoint as his running mate the shovel-jawed young California senator Richard M. Nixon, a Whitaker and Baxter protégé. Eisenhower was sixty-two; Nixon, thirty-nine. Eisenhower was a liberal, Nixon a ferocious anti-Communist. Whitaker and Baxter ran the Eisenhower-Nixon campaign in California.

The Republicans had put together a formidable ticket. The Democrats were vulnerable. Truman had assumed the presidency in 1945 with FDR's death and had been elected in 1948. He campaigned for a Fair Deal. But in 1952 he was unpopular, not least because voters blamed him for the United States' involvement in the Korean War. He also faced a challenge from within his own party from slender Tennessee senator Estes Kefauver, who'd made a national name for himself by heading a sensational investigation into organized crime. "I'm running on my own," Kefauver said, distancing himself from the party of Truman. Asked if he was a New Dealer and a Fair Dealer, he said, "Well, I don't classify myself on the dealers. I believe in progress." [14] Kefauver entered the Democratic primary in New Hampshire, where he campaigned in a coonskin hat by dogsled. When Kefauver won, Truman announced that he would not seek another term and instead urged his former secretary of commerce, Averell Harriman, a wealthy New York businessman, to seek the nomination. Harriman hired Edward L. Greenfield & Co. to help manage his campaign. Harriman won only one primary. Kefauver entered fifteen primaries and won twelve. But at the Democratic National Convention, held in the same Chicago amphitheater as the Republican convention, the unruly delegates of the Democratic Party drafted into the contest Adlai E. Stevenson, the governor of Illinois, who hadn't run in a single primary.

Stevenson would become the Hamlet of American presidential politics. A moderate and a party loyalist who had served in both the Roosevelt and the Truman administrations, he was best known in 1952 for the role he'd played in establishing the United Nations. He was famously eloquent and learned. He also enjoyed nearly universal support among intellectuals, including the historian Arthur Schlesinger Jr. and the economist John Kenneth Galbraith, and among some of the nation's finest

political writers, including *The New Yorker*'s Richard Rovere and John Hersey. (Rovere, wry and fair-minded, wrote the *The New Yorker*'s regular "Letter from Washington," and Hersey, one of the most acclaimed political reporters of the twentieth century, had written a breathtaking account of the bombing of Hiroshima and its aftermath.) Schlesinger, Galbraith, Rovere, and Hersey all wrote speeches for Stevenson, speeches celebrated for their erudition and elegance. Eisenhower placed his faith in ad men; Stevenson placed his faith in writers.

At the Democratic National Convention in Chicago, Stevenson agreed to enter his name into nomination. He won on the third ballot. His acceptance speech is one of the best in the history of American political rhetoric. He offered himself as a bridge between the democracy of the New Deal and the democracy of a new America. "The workingman, the farmer, the thoughtful businessman, all know that they are better off than ever before, and they all know that the greatest danger to free enterprise in this country died with the Great Depression under the hammer blows of the Democratic Party," he told a crowd that stamped in the stands. The Democratic Party, Stevenson argued, had rescued the country from the Depression and ushered in an age of abundance. And yet a danger lurked. Something evil stalked the land. The political savage. Senator Joseph McCarthy, a brawny Republican from Wisconsin, had in 1950 begun a campaign against supposed Communist subversives in the United States, a campaign of nearly unrivaled demagoguery. He stoked fear. He fought phantoms. He incited panic. He persecuted the weak. He lied. And people believed him. That night in Chicago, Adlai E. Stevenson of Illinois presented himself, not to his party but to the nation, as a political savior who could rescue Americans from the malice and vulgarity of modern American politics.

"I hope and pray that we Democrats, win or lose, can campaign not as a crusade to exterminate the opposing Party, as our opponents seem to prefer," Stevenson said, "but as a great opportunity to educate and elevate a people whose destiny is leadership, not alone of a rich and prosperous, contented country, as in the past, but of a world in ferment." Promising to "talk sense to the American people," Stevenson spoke with a forcefulness and a dedication to principle not often heard in American politics, before or after. Truman talked with something of a whine. Eisenhower stammered. Nixon raged. McCarthy seethed and sweated and spat. Stevenson spoke with the precision of a scholar and the power of a poet. "Better we lose the election than mislead the people," he said, "and better we lose than misgovern the people." [15] He ran against dishonesty. He ran against demagoguery itself.

In the late, candlelit decades of the unruly eighteenth century, American political philosophers had thought a great deal about the dangers of demagoguery. "Men of factious tempers, of local prejudices, or of sinister designs may, by intrigue, by corruption, or by other means, first obtain the suffrages, and then betray the interests, of the people," James Madison warned in 1787. [16] Madison drafted a Constitution designed to thwart such men by the nature and very structure of government, its separation of powers, its checks and balances. But the framers hadn't anticipated the electrified, neon-glowing, vacuum-tubed twentieth century's methods and machines of mass advertising and political manipulation, methods and machines so powerful that they sparked a panic about something well beyond demagoguery and into mind control.

Adlai Stevenson worried about all of that. McCarthy troubled him, led him to fear for the republic. But he had another concern, too, one that had to do with the cost Democrats and Democratic policies had paid for Republicans' willingness to engage the services of advertising agencies. In 1952, after the Republican National Convention, Eisenhower's national campaign retained one of the largest advertising agencies in the

United States, Batten, Barton, Durstine & Osborn, better known as BBDO. (Straight-talking Harry S. Truman said BBDO really stood for "Bunko, Bull, Deceit, and Obfuscation.") BBDO's ad men sold Eisenhower like a laundry detergent. The most-watched television advertisement of 1952 was a Disney-produced animated short of little people marching in a parade, led by an elephant, singing a jingle written by Irving Berlin: "You like Ike, I like Ike, everybody likes Ike." Eisenhower became the first presidential candidate to appear in televised ads, including one called "The Man from Abilene": it borrowed its graphics from the television version of *Superman*. [17]

The Eisenhower campaign hired ad men; the Stevenson campaign denounced them. To run against demagoguery is to commit to a campaign of restraint, a campaign of decorum, a campaign of understatement. For Stevenson, running against dishonesty in American politics meant running a campaign almost entirely without the aid, or at least without the seeming aid, of Madison Avenue. Forty-two-year-old George Ball, a principled New Dealer and former law partner of Stevenson's, headed Volunteers for Stevenson. Some people "like Elvis Presley, and I like Marilyn Monroe," Ball said, in a much-reported speech, "but I doubt that is sufficient reason for electing either president." Ball dubbed the Eisenhower operation the Cornflakes Campaign. [18]

Behind the Stevenson campaign's criticism of the role of mass advertising in American politics lay another fear. "Brainwashing" entered the American lexicon in 1951 with the publication of Brain-Washing *in Red China: The Calculated Destruction of Men's Minds*, by the journalist Edward Hunter. Hunter promised to reveal "the terrifying methods that have put an entire nation under hypnotic control." [19] "Brain-washing" was Hunter's translation of the Chinese *hsi nao*, and he used it to describe Communist China's methods of Maoist indoctrination. (At the end of the Korean War, American psychologists would be charged with interviewing former prisoners of war to determine if they had been brainwashed, too, a story that became the plot of the 1959 novel *The Manchurian Candidate*.) [20] If McCarthy tapped into a fear that Communists were secretly controlling Americans' minds, animus against mass advertising tapped into a growing fear that someone else was tampering with the American mind. Not Chairman Mao or the Communist Party or the Soviets but American ad agencies.

For these reasons and more, Stevenson balked at campaigning on television. He found the idea of appearing in television advertisements—advertising himself—undignified and insulting to the office of president. He refused. Eisenhower had no such qualms or, at least, he'd had those qualms assuaged by Rosser Reeves, of the Ted Bates advertising agency.

Reeves was the unquestioned top dog of Madison Avenue, later famous for the campaign he'd devise for M&M's ("Melts in your mouth, not in your hand"). "I think of a man in the voting booth who hesitates between two levers as if he were pausing between competing tubes of toothpaste in a drugstore," Reeves explained. "The brand that has made the highest penetration on his brain will win his choice." [21] Speeches were long and boring; candidates had to be willing to get their message across in under a minute. For the Eisenhower campaign, Reeves proposed to make a series of short television ads, called spots. "Is there a new way of campaigning that can guarantee victory for Eisenhower in November?" Reeves asked. "The answer is: 'Yes!' . . . Most people do not know the power of spots. However, here are the cold facts. THE HUMBLE RADIO OR TV 'SPOT' CAN DELIVER MORE LISTENERS FOR LESS MONEY THAN ANY OTHER FORM OF ADVERTISING. Let us repeat that!! THE HUMBLE RADIO OR TV SPOT CAN DELIVER MORE LISTENERS FOR LESS MONEY THAN ANY OTHER FORM OF ADVERTISING." [22]

Reeves also pioneered targeted political advertising. To win in 1952, Republicans needed to flip the vote in forty-nine counties and twelve states they'd lost in the last

election. Reeves made their spots for those counties. He titled his series of spots "Eisenhower Answers America." After George Gallup conducted polls to establish what Americans cared about the most, Reeves wrote scripts for Eisenhower, answers to questions raised by voters, about those issues. Eisenhower read the answers from cue cards, and then Reeves got ordinary Americans, off the streets of New York—tourists waiting in line outside Radio City Music Hall—to come inside and read the questions off the cue cards.

"General, the Democrats are telling me I never had it so good," says a young black man in a suit.

Answers Eisenhower: "Can that be true when America is billions in debt, when prices have doubled, when taxes break our backs and we are still fighting in Korea? It's tragic. And it's time for a change." [23]

Stevenson supporters found Eisenhower's spots embarrassing. Eisenhower was "a plodding five-star general uttering pedestrian language written by some journalistic hack with all the grace of a gun carriage being hauled across cobblestones," George Ball complained. Stevenson, Ball said, "was a man of culture and intellect seeking not only to educate the country but also to elevate its taste." [24] And that, alas, was the heart of the problem. The country didn't much want to be educated and elevated. It wanted slogans. Melts in your mouth, not in your hand! I like Ike! It's time for a change!

Meanwhile, Nixon went after Stevenson, viciously, which is the way Nixon always campaigned, not educating and elevating the country but misinforming and degrading it. He called Stevenson a "weakling, a hustler, and a small-caliber Truman." He dubbed him "Adlai the Appeaser." McCarthy attacked Stevenson as a Communist; Nixon merely slyly *hinted* that Stevenson was a Communist. (Stevenson called Nixonism "McCarthyism in a white collar.") [25] And Nixon used television even more effectively than Eisenhower, answering seemingly career-ruining charges of corruption in a televised speech that ended when an aw-shucks Nixon admitted that he had indeed taken a campaign gift: he'd accepted the gift of Checkers, a black-and-white spaniel, and "we're going to keep it." Ball later said that watching the Checkers speech was like watching a Geritol commercial. [26] But Geritol commercials sell a lot of Geritol.

Stevenson all but boycotted television advertising, agreeing only to have his speeches televised—very long speeches, which few stations were willing to broadcast and few people bothered to watch no matter how well-written they were. In 1952, Republicans spent $1.5 million on television advertising to the Democrats' puny $77,000. [27] This seemed, somehow, unfair. Ball asked the Federal Communications Commission to look into the legality of the Republican television spots, suspecting them of violating provisions of the 1934 Communications Act (requiring equal time for candidates) and of the Corrupt Practices Act (governing campaign spending). But the FCC said there was nothing to be done. [28] American politics never looked back.

Plenty of other problems riddled Stevenson's campaign. To Eisenhower's "I like Ike," Stevenson's campaign offered a pathetic rejoinder: "Madly for Adlai." The fact that he was divorced hurt him, and badly. He was also saddled with a terrible lower ticket as a consequence of the splintering of the Democratic Party in the last election. In 1948, southerners had bolted from the Democratic convention over civil rights and held their own convention, as the Dixiecrat Party, under this platform: "We stand for the segregation of the races and the racial integrity of each race." In 1952, in a Faustian bargain, the Democratic convention chose as Stevenson's running mate the conservative John Sparkman of Alabama, a leading segregationist. The party was trying to stitch itself back together by betraying civil rights. It didn't work. Meanwhile,

Republicans, tapping into the deep well of anti-intellectualism in American life, made Stevenson's learnedness and eloquence into liabilities, mocking the bald Stevenson as an "egghead." Stevenson's weakness for obscure allusions and bad puns didn't help, either. "Eggheads of the world unite!" he once said. "You have nothing to lose but your yolks!" [29]

Many Republicans admired Stevenson; newspaper columnist Stewart Alsop asked a Connecticut Republican whether they'd also vote for him. "Sure," the Republican answered. "All the eggheads love Stevenson. But how many eggheads do you think there are?" [30]

Still, the race looked close, too close to call. On Election Day, Stevenson followed the returns from the governor's mansion in Illinois while Eisenhower waited for the results at the Commodore Hotel in New York. On television that night, for the first time ever, the networks broadcast coast to coast.

In 1952, television news executives hoped to undo the damage done on Election Night in 1948, when not only had the coverage been painfully boring (there was very little to watch except commentators who had very little information), but the networks, like the newspapers, had also made a colossal error, calling the election for the Republican Thomas E. Dewey. (A jubilant president had later held up the front page of the *Chicago Daily Tribune,* displaying its headline, "dewey defeats truman.")

For Election Night 1952, CBS had a plan, a secret plan known as Project X. Like the rest of America, Ed Greenfield watched, rapt. "Balmy weather over most of the United States today, and a record turnout apparently throughout the United States," said CBS newsman Walter Cronkite, early in the evening, speaking to the nation from CBS's Studio 41, just above Grand Central Station. They'd outfitted the studio with a giant wall map of the United States, to be filled in as the returns came in. States that went for Stevenson would be colored black and states that went for Eisenhower would get stripes, like so many zebras (it was the age of black-and-white television, too soon for red and blue).

But the real star of the evening wasn't Cronkite or the map. It was a computer, the first computer most Americans had ever seen. The Universal Automatic Computer, or UNIVAC, had been built in 1951 by a company named Remington Rand, for the U.S. Census Bureau. In 1952, CBS had arranged to hire a UNIVAC for Election Night, to tally returns and predict the winner. "a robot computer will give cbs the fastest reporting in history," read the headline. [31] The UNIVAC would stay in Philadelphia—it was too big to move—but in New York, CBS would install a fake, a console lit, from the inside, by a string of Christmas lights. The first computer most Americans ever saw was an empty shell: a stunt.

On Election Night, at Studio 41 in New York, legendary CBS newsman Charles Collingwood sat at the fake UNIVAC terminal to offer the predictions he'd be getting, by telephone, from an actual UNIVAC, in Philadelphia. Cronkite smiled at the camera and addressed the audience:

"And now for perhaps a prediction on how this voting is going, what the vote that is in so far means, let's turn so far to that miracle of the modern age, the electronic brain, UNIVAC, and Charles Collingwood."

The camera panned to the corner of the studio and zoomed in on Collingwood, at a console kitted up with lights on timers, to make it look as though it was doing something.

"This is the face of a UNIVAC," purred Collingwood. "A UNIVAC is a fabulous electronic machine which we have borrowed to help us predict this election from the basis of the early returns as they come in. UNIVAC is going to try to predict the winner for us just as early as we can possibly get the returns in. . . . This is not a joke or a trick.

It's an experiment, and we think it's going to work. We don't know, we hope it will work . . ."

It didn't work. Or at least it didn't work well. Cronkite kept throwing to Collingwood —"And now to find out perhaps what this all means, at least in the electronic age, let's turn to that electronic miracle, the electronic brain, UNIVAC, with a report from Charles Collingwood"—but Collingwood kept having to explain that no prediction had yet come in.

"UNIVAC, our fabulous mathematical brain, is down in Philadelphia mulling over the returns that we've sent him so far," Collingwood said, filling time. "He's sitting there in his corner, humming away. A few minutes ago I asked him what his prediction was, and he sent me back a very caustic answer, for a machine. He said that if we continue to be so late in sending him the results, it's going to take him a few minutes to find out just what the prediction is going to be. So he's not ready yet with his prediction but we're going to go to him in just a little while."

Not long after midnight, CBS turned to the man from Remington Rand, in Philadelphia with the actual UNIVAC, for an explanation. He claimed that UNIVAC had predicted an Eisenhower landslide early in the evening, but he'd been too nervous about it to pass the projection along to Collingwood. "When UNIVAC made its first prediction with only three million votes in, it gave five states for Stevenson, 43 for Eisenhower, 93 electoral votes for Stevenson, 438 for Eisenhower," he said. "We just plain didn't believe it." In the end, Eisenhower won 442 Electoral College votes to Stevenson's 89 and 55.2% of the popular vote to Stevenson's 44.3%. A rout. UNIVAC had been right.

Ed Greenfield was mesmerized. Two new machines, the television and the computer, were transforming American politics. The influence of the first was much easier to see than the influence of the second. But the way Greenfield figured it, Republicans had made better use of television in 1952, by way of advertising, which meant that Democrats ought to figure out how to make better use of the computer, and fast, because what could be more valuable to a campaign than a computer that could predict the vote?

Eyeing the election of 1956, Greenfield began collecting men, the very best. [32] Not Madison Avenue men but scientists. He knew everyone. Very convivial. Very astute. The man was a magnet. Ed Greenfield, University of Chicago, Yale. He cast his net, fishing for men, the best and the brightest scientists of the mind and minders of machines, gigantic brains. He went to California, where he found Eugene Burdick in the ocean, surfing.

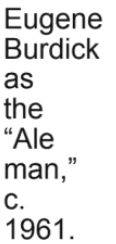
CHAPTER
2

Impossible Man

$f + h = p$

(fear plus hate equals power)

—*Advertising copy for Eugene Burdick, The Ninth Wave, 1956*


Eugene Burdick as the "Ale man," c. 1961.

Everyone assumed that Eugene Burdick was a spy, which meant, of course, that he wasn't. A man can't drink whiskey with Marlon Brando and eat dinner with Ingrid Bergman and teach political theory to PhD students and advise American presidents and write best-selling novels that get made into big-budget Hollywood films and also steal secrets, undercover, incognito, unknown, as if he were nobody.

Or maybe he could. If anyone could pull it off, it would've been Burdick. He was an impossible man, exactly the sort of man he was forever inventing in his fiction, Cold War thrillers starring dashing men of mystery, rugged, daring, and brilliant, who defended Americans against the age of automation. Once, when Burdick sent a short story to *The New Yorker*—"Happy Man in Berlin"—his editor wrote back, "I understand that Pico is a skillful man, but sometimes he seems almost too miraculous." [1] Burdick, too.

Eugene Burdick walked with the rubbery gait of a surfer and wore owl's-eye glasses and smoked a pipe and liked to be photographed sitting at his typewriter, an old Royal, well-used and well-oiled. He had two selves and two costumes, both disguises: he wore scuba gear; he wore tweed suits. He was James Bond; he was Ernest Hemingway. He didn't write like Hemingway, but he looked like him, with the same hair, straight and thin and flat, and the same head, too: as boxy as a biscuit tin. Wallace Stegner once said Burdick was "as energetic as a bulldozer and as persistent as an Egyptian fly." [2]

He'd been born in Sheldon, Iowa, a railroad town, in 1918, at the end of the century of the railroad, the great machine of the nineteenth century, whose coal-black, smoke-puffing locomotives chugged from town to town on tracks that reached across the continent like the legs of a giant arachnid. He was named after Indiana-born Eugene V. Debs, the onetime railroad worker, founder of the American Railway Union, and self-proclaimed socialist who, in 1920, when Burdick was not yet two, ran for president for the fifth and final time, from prison in Atlanta, as Convict No. 9653, with the campaign slogan "From the Jail House to the White House." It earned him nearly a million

votes. [3]

Democracy is a mystery. In the 1950s, Eugene Burdick wanted to solve that mystery. He wanted to know whether or not it could be solved by the great machine of the twentieth century, the computer, whose whirring, blinking parts were housed in gray boxes and stored in gleaming, temperature-controlled rooms, as if they were streamlined steel coffins, standing on end, in a hospital morgue. He decided to immerse himself in a new field that became known as behavioral science, which was why, in the late summer of 1954, he drove his Jaguar up the winding, redwood-lined roads of Palo Alto, California, to a paradise sometimes called Lotus Land, a Buddhist-style, monastic retreat of cedar and glass perched on top of a hill overlooking San Francisco Bay: the Center for Advanced Study in the Behavioral Sciences. [4] It was exactly the sort of place where Ed Greenfield would turn up, looking for men to staff a new department of Edward L. Greenfield & Co., a Social Science Division, with which he hoped to help get a Democrat elected president in 1956, by a method other than plastering the candidate's face on boxes of cornflakes or hawking him like canned soup in one-minute television spots, as if the Oval Office were a kitchen pantry.

Eugene Burdick was a beach boy. After Iowa, he'd grown up in Los Angeles. His father died when he was four. His mother went to work in a waffle shop; she sent the children out to live with neighbors, little vagabonds, wandering the beaches and dunes and boardwalks. Burdick started smoking cigars and sleeping with one of his teachers when he was fourteen, a story he told in his first, partly autobiographical novel, *The Ninth Wave.* [5] (The novel's lead character counts the women he's slept with the way other people count sheep, ticking off "each pinkening breast, each exhalation of breath, the twist of a thigh, the feel of hair and flesh and moisture.") [6] He had no money for college and worked at a life insurance company to pay for a year at Santa Barbara State College before going to Stanford, where he supported himself by waiting tables while studying psychology, from Freud to Fromm.

He was interested in everything. "He read anthropology, sociology, psychology, mathematics, philosophic, ethics, history, and logic," he wrote in *The Ninth Wave.* "He stole books from the library, bought used books in Palo Alto, borrowed books and bought still more books. Some books he glanced at, threw under his bed and never opened again. Some books he read twice." [7] He mulled over the political theory of the great American poet Carl Sandburg: "The people choose and the people's choice more often than not is one more washout." [8]

The DC comic book superhero Aquaman debuted in 1941, an emblem of American naval forces in the Pacific, but the Protector of the Deep had nothing on Eugene Burdick, hero of the high seas. He graduated from Stanford in 1942, married Carol Warren, the daughter of a San Francisco school superintendent, and shipped out to Treasure Island with the navy. The next year, patrolling off Guadalcanal, he dove off his own boat to swim through burning oil, exploding ammunition, and falling wreckage, to rescue the survivors of a torpedoed battleship. [9]

After the war, Burdick went back to Palo Alto, where trees on Stanford's nine thousand wooded acres were being felled to make way for laboratories. Five million people moved to California in the 1950s, including African Americans, Asian Americans, Mexican immigrants, and a great many young, white veterans like Burdick, men who during the war had learned how to fly planes or fix tanks or use radar, training from which servicemen of color had typically been barred, as had nearly all women. Wartime training in hand, men like Burdick went to California to study engineering and to find jobs in the Defense Department–funded, $8 billion-a-year electronics industry. Palo Alto, a land of farms and orchards, a paradise of fruit trees,

was becoming a boomtown, a land of electronics factories and microwave labs, a valley of silicon. [10]

Burdick had a different idea. He planned to become a political scientist. But he'd read a lot of novels in the navy, and he also wanted to be a writer, so he enrolled in a Stanford fiction-writing class taught by the novelist Wallace Stegner, whose courses would one day become legendary. Burdick gave Stegner a story he'd written about his service in the Pacific, a story he'd dug out of his navy foot locker. "It wasn't very finished," Stegner later remembered, "but it ran over the class like a tank." [11] That was Burdick, all over.

Burdick revised the story and sent it to *Harper's*. "Rest Camp on Maui" won second prize for the O. Henry Award, and the decorated navy gunner became a celebrated fiction writer. He won a fellowship at the Bread Loaf Writers' Conference. The plaudits kept coming. He telephoned Stegner. "For the love of Mike, you know what? I'm a Rhodes Scholar!" [12]

He didn't much love Oxford, a cloister of stone. [13] England had suffered during the war and, while not defeated, had emerged depleted. Burdick had no patience for that, no sympathy for it, no sense of the lingering of loss. Instead, he wrote about England with a callow disappointment. He wrote about how he'd expected to find Oxford's famous debating society a place where "wildly precocious youths, their eye firmly fixed on the main chance at parliament, debate with cruelly deflating epigrams." But he found it full of nothing so much as "dozens of stuttering youths" who say very little of any interest to anyone, least of all of any interest to an undersea diver who read Machiavelli before breakfast. [14]

After Oxford, he traveled the world and then landed back by the bay, as a professor in the political science department at the University of California, Berkeley. "There is a waiting list for his classes," the *San Francisco Examiner* reported, and "students—most of them female—flock to his office hours." [15] In Political Science 212B, Contemporary Political Theory, Professor Burdick raised a topic at the start of the term: "the crisis in method." Political theory was on the wane, quantification on the rise. But to what end? A lecture hall full of girls in skirts and baby blue eye shadow and midnight black mascara eyes looked up at him adoringly. What was the way out of political science's crisis in method? Burdick directed them to "the new epistemology of Harold Lasswell." [16] Ed Greenfield had studied with Lasswell in 1950. He'd imbibed Lasswell's epistemology like so much wine, had fallen under his intoxicating sway.

Burdick was fascinated by Lasswell, too. But Burdick wasn't really under anyone's sway. Instead, he followed his own curiosity. In 1954, thirty-five, he would spend his sabbatical with Lasswell, studying the mathematics of mass persuasion—the punch-carded computer programs that purported to model the behavior of the American voter, the fickle Coke-or-Pepsi voter, the television-watching, shopping cart–pushing, Sears-Maytag, Eisenhower-Nixon voter. And he meant to do that in the company of the nation's most distinguished social scientists, men in horn-rims and bow ties and V-neck sweaters, at the latest front in the Cold War battle of minds: California.

The year Eugene Burdick began his sabbatical at the Center for Advanced Study in the Behavioral Sciences, the long struggle for civil rights moved to the very center of American politics. African Americans had been fighting for those rights for decades, but in May 1954, in the landmark decision *Brown v. Board of Education*, the Supreme Court denounced the regime of Jim Crow and ruled racially segregated schools unconstitutional. The decision, heralded and celebrated in much of the country, also fueled white supremacy organizations: terrorists attacked black churches and schools and pro–civil rights temples and synagogues, setting fires, igniting bombs, commiting

murders.

Burdick had some but not much of this on his mind in the James Bond and bikini summer of 1954, as he drove his Jaguar convertible through stands of palms and cedars and piñons and eucalyptus groves, up to the Center for Advanced Study in the Behavioral Sciences. He meant to spend his year—the year of Elvis Presley's debut, the year of the polio vaccine, the year of Joseph McCarthy's downfall—away from his office, away from his classes on Hobbes and Locke, away from his colleagues and their sniping at his successes, away from his students, the boys he could still beat at squash, the girls in tight sweaters. He was particularly keen to meet Lasswell, fifty-two, bald and jowly, best known for two works from the 1930s, *Psychopathology and Politics* (1930) and *Politics: Who Gets What, When, How* (1936). Lasswell had psychologized political science. He also likely introduced Eugene Burdick to Ed Greenfield. Later, Lasswell would help found Simulmatics, a company in which he held a great deal of stock.

"The American public believes that it 'chooses' the Party candidates for the Presidency and then makes a free and sovereign choice between the two candidates," Burdick would later write. "This is hardly an accurate description of what happens. The American public believes it is sovereign. It is not." [17] Burdick arrived at this understanding of American elections during his year at the center, and mainly from Lasswell.

Harold Lasswell had gone to the University of Chicago when he was only sixteen, completed a PhD in political science, and published his dissertation, *Propaganda Technique in the World War*, in 1927, when he was twenty-five. Then he'd gone to Berlin to be psychoanalyzed by a disciple of Freud's, before accepting a position teaching at the University of Chicago and publishing his two seminal works. If Burdick was a bulldozer, Lasswell was a virus. He didn't lecture people; he infected them. He flared his nostrils and sniffed. He held forth like an oracle, as if he were Aristotle. "His monologues are symposiums," said one student. "Lasswell was not a teacher but a tornado." [18] People treated him like a god. He flirted with boys. He humiliated girls. "If you asked Harold a question, he would say, 'We don't know enough about that,' and you knew he meant the entire body of knowledge of the universe, because if anyone knew it, he knew it," said Naomi Spatz, the woman for whom Ed Greenfield would one day leave his wife. Once, when Spatz had Lasswell over to brunch at her apartment, her cat started rubbing against him. "The cat likes you," Spatz said. Answered Lasswell, nostrils flaring, "He knows where the power is." [19]

Lasswell enjoyed such influence because his work purported to explain "*who* says *what* to *whom* in *which channel* and with *what effect*." [20] He claimed to know how ideas get into people's heads—and how to get them out. During the Second World War, he founded a war communications research project at the Library of Congress and recommended that the United States preserve democracy from authoritarianism by way of systematic, government-run mass manipulation. [21] For a long time, this stuff was known either as propaganda or as psychological warfare (the Nazi version was known as *Weltanschauungskrieg*, or worldview warfare), but after a while, people who worried about how that sounded started calling it the study of "mass communication." [22] With the war over, this sort of work also required a new justification. Who says what to whom with what effect? That's the question that had drawn Ed Greenfield into Lasswell's seminar room at Yale in 1950. In peacetime, there seemed no better place to study mass communication, or psychological warfare, than democratic campaigns and elections, because campaigns produce their own propaganda, a body of political opinion, and elections produce their own data, an inventory of political behavior.

The pioneer in this field was an Austrian émigré named Paul Lazarsfeld who, like Burdick and Lasswell, went to the center in Palo Alto in 1954. "Every four years, the

country stages a large-scale experiment in political propaganda and public opinion," Lazarsfeld explained in 1944, the year he founded the Bureau of Applied Social Research at Columbia. [23] The data piled up. In 1948, the University of Michigan launched a massive voter study known as the American National Election Study, one of the biggest social science research projects ever undertaken, and Lazarsfeld and his colleague Bernard Berelson embarked on "a two-phase study of how the voter makes up his mind in congressional and state elections," eventually producing a landmark work, *Voting: A Study of Opinion Formation in a Presidential Campaign*. [24] Their coauthor would be a fellow named William McPhee. One day soon, Ed Greenfield would meet McPhee, too: he would put him in his collection of men, a collection he called "the Group."

In November 1954, Democrats won back the House in an election that amounted to a repudiation of McCarthyism. In December, the Senate formally censured McCarthy, and McCarthyism, as Eisenhower liked to say, became "McCarthywasm." Nixonism, though, was still Nixonism.

Ed Greenfield, meanwhile, was putting together the Social Science Division of his advertising agency. Here was another way to fight demagoguery: with a very big, super-fast calculating machine. To find a way to bring the speed of giant electronic brains into political campaigning, Greenfield needed to gather together scientists from this brave new world, quantitative social scientists, who were engaged in founding a new body of scholarship, a new field of knowledge. Its assumptions would take over universities, spread across the intellectual landscape, and leak into the soil of American culture itself so entirely that people would forget that it had emerged out of the urgency of the Cold War.

Cold Warriors understood themselves as engaged in a battle over the future. To win that battle, they tried to turn a lot of things, including the study of human behavior, into predictive sciences. The more dangerous the Cold War got, the more madly its scientists scrambled to foretell the future. And the more heedlessly and violently they cast aside the past, the knowledge of ages, the humanities, the study of the human condition: history, philosophy, literature.

In 1949, the Soviet Union had tested an atomic bomb and China had become Communist. Recruited into a Manichaean battle between Americanism and communism, social scientists began waging wars on two fronts: protecting American democracy from demagoguery and fighting the spread of communism. They asked two questions: How do voters in a democracy form their opinions? And how can the influence of communism be stopped? Answering these questions led social scientists to gather large bodies of data—not only in the United States, where they collected public opinion surveys, campaign polls, and election returns, but also in Europe, where they interviewed Soviet dissidents and Warsaw Pact refugees and made transcriptions of Soviet radio and television broadcasts. No longer did American political scientists require merely an explanation of who says what to whom with what effect; they required a prediction, based on a mathematical model. If we tell voters X, will they then do Y? For that, they looked to physics. The mathematics of the targeting of messages would be derived from the targeting of missiles and it, too, would require computers.

Anyone who wanted to use computers to study and produce propaganda needed vast sums of money; most of that money came the Ford Foundation, soon to become the richest philanthropy in the world. Established by Edsel Ford in 1936, it had been taken over in 1947 by his son Henry Ford II, who tapped California lawyer H. Rowan Gaither to help prepare a report about the foundation's postwar priorities. Gaither's report complained that existing ways of studying human behavior—both ancient humanistic

fields like philosophy and political theory and modern fields like psychology and sociology—were "polemical, speculative, and pre-scientific." He recommended turning the study of human behavior into a science, like physics, to be based on "experiment, the accumulation of data, the framing of general theories, attempts to verify the theories, and prediction." [25] After all, if a body of knowledge couldn't be used to make predictions, what use was it?

Before working for Ford, Gaither had helped found the RAND Corporation, in Santa Monica. RAND—short for "Research and Development"—had begun as an arm of the U.S. Air Force, part of the Douglas Aircraft Company, but in 1948, newly independent, and with funding from both the Department of Defense and the Ford Foundation, RAND had hired a pioneer in psychological warfare to head its new Social Science Division. [26] Its projects included charting, mathematically, "a general theory of the future." [27]

Prophecy is ancient, a species of mysticism. Prediction as a quantitative social science was new: outside of economics, social scientists had not, till then, generally made predictions. But Ford asked social scientists to make prediction the entire object of their research, to claim knowledge—empirical, probabilistic, mathematical knowledge—of what would happen next. This, however, was no less mystical than the ancient art of prophecy. The attempt to derive a general theory of the future rested on the presumption that human behavior can be predicted, a presumption that, in turn, rested on the conviction that reckoning with people and societies and the human mind itself isn't the stuff of poetry and paintings and philosophy but is, instead, the stuff of numbers and graphs and simulations. [28] The Ford Foundation called this field of study "the behavioral sciences."

In 1951, when the Ford Foundation established a special division for the study of the human mind, it named it the "Behavioral Sciences Division." The next year, Ford agreed to a grant of $3.5 million to establish the Center for Advanced Study in the Behavioral Sciences. [29] But what even were the "behavioral sciences"? The best explanation came from the economist Kenneth Boulding, who said a behavioral science was a science "that gets money from the Ford Foundation." [30] The second best explanation came from Eugene Burdick, who, in a novel, made the question into a sexual tease.

> *"What does a behavioral scientist do?" he asked.*
> *"I study the behavior of humans," she said, and smiled.* [31]

During the center's inaugural years, its first fellows, Eugene Burdick, Harold Lasswell, and Paul Lazarsfeld, took turns offering "confessions," each scholar telling the story of his life. [32] Then began the work. There were no telephones. The fellows were required to follow a strict schedule. [33] Boulding, following that schedule, pondered the imperative of prediction. "In about an hour I shall rise, leave my office, go to a car, drive down to my home, play with the children, have supper, perhaps read a book, go to bed," he wrote from his desk at the center. "I can predict this behavior with a fair degree of accuracy because of the knowledge which I have: the knowledge that I have a home not far away, to which I am accustomed to go. The prediction, of course, may not be fulfilled. There may be an earthquake, I may have an accident with the car on the way home, I may get home to find that my family has been suddenly called away." [34]

Most of the fellows held a deep faith, a worshipful faith, in the predictability of human behavior, believing that it required only knowledge of the world, a theory of behavior, and a sufficiently sophisticated mathematical model. This was why Burdick

had come. [35] Trained as a political theorist, he was eager to measure the influence of the quantitative turn in the study of man. He attended an intensive seminar on mathematics. He began assembling a collection of essays on the most promising new research, editing an anthology called *American Voting Behavior*. [36] He was impressed, but he was also worried.

As Burdick saw it, quantitative political science proceeded with very little concern either for political theory or for the actual workings of democracy. Liberal democratic theory posits the rationality of citizens and their interest in and active participation in politics, but the citizen described in the voting behavior research does not meet even a minimum test for rationality and is not very interested in politics, or involved, either. Democratic self-government relies on feelings of belonging and political community, and divisions that include political parties and interest groups, but the voting studies sorted voters into artificial, identity-based categories like "upper-middle-Catholic-urban." Political parties are self-conscious groups, Burdick pointed out, and so are interest groups, like farmers, but "upper-middle-Catholic-urban" people are not; they're just an invention of a punch-card sorter. It was possible they could be *turned into* a group, by virtue of being classed as one, consistently, but that would seem more likely to harm than to benefit the polity. Burdick wondered whether pluralism could survive when the nation's political scientists had dedicated themselves to the project of segmenting the electorate. [37]

He was not alone in his skepticism about the real-world effects of the behavioral sciences. At a holiday party, the fellows sang, to the tune of "I've Been Working on the Railroad," lyrics written by Boulding:

> *Something is the matter with Science,*
> *Something is the matter with the plan (I've got it!)*
> *Something is the matter with Science*
> *For there ain't no science of Man.* [38]

They were confident, and they were cocky. But they sometimes wondered if all of it wasn't mainly bullshit.

Eugene Burdick spent most of his year at the Center for Advanced Study in the Behavioral Sciences failing to produce scholarship and instead writing a novel, *The Ninth Wave*, a dystopian political thriller about the problems with the quantitative study of voting behavior. "The Center is not very healthy or sympathetic an environment in which to grow the delicate flower of fiction," he confided to a friend. "But I am giving it a good try." [39]

In *The Ninth Wave*, Burdick created a version of himself in a character called Mike Freesmith, a surfer who studies psychology at Stanford, where, by observation and experiment, he derives a set of cold-blooded and finally monstrous principles of human behavior. According to Freesmith's Fear Principle, "There is one thing that the masses know: real authority. And a real authority is someone who can satisfy their desire to hate and their fear. A good authority works the two of them together." [40] This insight leads Freesmith into politics: he finds a demagogue who preaches hate and fear, and offers to help him get elected to office.

Burdick had observed this sort of thing firsthand in the rise of Richard Nixon, a California boy and, also like Burdick, a naval officer. Nixon had run for a seat in Congress in 1946. Handsome, well-educated war heroes were very electable. John F. Kennedy was elected to Congress in Massachusetts in 1946, too. ("Second place is

failure," Kennedy's wealthy, influential, and hard-charging father had always told him.) [41] But Nixon undertook a new style of campaign, a campaign of hate and fear, something he got better at each time he ran. In 1950, when he ran for a seat in the Senate, he allegedly said his opponent, Democrat Helen Gahagan Douglas, was "Pink right down to her underwear." [42] Nixon, like McCarthy, served on the House Un-American Activities Committee, where, like McCarthy, if with more polish and more subtlety, he gleefully accused a lot of other people of wearing pink underwear, too. McCarthy had been exposed, defeated, humiliated, censured. Nixon had been elected vice president. Burdick wondered what a man like Nixon could do, if he also had the latest behavioral science behind him. He tried to picture it.

In *The Ninth Wave*, Freesmith tries to get the demagogue in his pocket elected governor of California. "You start with this," Freesmith says, handing a campaign worker named Georgia a printed and annotated census as he shows her around campaign headquarters, a room that houses a giant mainframe computer. "Tells you how the population breaks down: how many street cleaners, Negroes, veterans, trade union members, truck drivers, fry cooks, Protestants, Jews, Catholics, foreign born, Okies, doctors and teachers there are. Also how much money they make, the size of their houses, the kind of car they drive, the degree of education, lodges they join and a lot more." This, Freesmith explains, is the "Great Beast," the public. From the Great Beast, he goes on, you make a Little Beast, a three-thousand-person sample, and you engage a polling company to ask those three thousand people a series of questions. "Then they punch the answers into the IBM cards and bring them back here and we run them through the machine. We pay them three dollars for each card," Freesmith says, pointing to stacks of cards.

Georgia asks to see a card. Burdick lingered on this description. His readers had likely never seen a punch card.

"It was rectangular and its face was covered with closely printed, black rows of numbers. Some of the numbers had been punched out, leaving tiny slots in the cards. There were no words on the cards." A pollster holds the card up to the light and reports, "Subject is: White. Male. Thirty-four years old. Catholic. Married. Three children. Clerk. Less than four thousand and more than thirty-five hundred a year. No television. In debt." [43]

Georgia learns to feed the punch cards into a reading machine. Burdick writes, "She put the cards from the box into the hopper and pressed the button. The machine began to purr. She looked down at it with pleasure, moved her fingertips lightly over the quivering surface. Then she touched the lever and the cards began to flick through the machine." [44]

Burdick is not a subtle writer of fiction. He's more of an armored tank than a sniper. Georgia, feeding the cards into the machine, looks out the office window, across the street, and into another office, where a dentist is sedating a female patient. When the dentist inserts a syringe into the woman's mouth, her shoes jerk suddenly. Georgia watches as the dentist begins to pull a tooth and—just as Freesmith removes the last of the cards from the punch-card reader—"the dentist stepped away from the woman and a burr in his hand glistened with bright red blood." [45] You can almost hear Burdick hollering, "Get it? The punch card is like a tooth pulled out of your head! It's horrible! Mike has blood on his hands!"

The Ninth Wave, a Book-of-the-Month Club selection, became a bestseller. Even before the book came out, Burdick sold the film rights. [46] Hollywood gossip had it that Frank Sinatra and Marlon Brando had been tapped for the two leads. [47] Burdick contracted to write the script with Stanley Roberts, who in 1954 had been nominated for an Oscar for his screenplay for *The Caine Mutiny*, starring Humphrey Bogart. No film of *The Ninth Wave* was ever made. "I hear California Democrats are hoping to keep it off

the screen," wrote one Hollywood reporter. [48] Maybe that was because by then Eugene Burdick was working for the Adlai E. Stevenson campaign, as part of the new Social Science Division of Edward L. Greenfield & Co.

Ed Greenfield had been busy since the election of 1952. In the Baby Boom 1950s, he and Patty had three children, one after another: Michael (1952), Ann (1954), and Susan (1955). Diapers, bottles, strollers. They mainly lived in New York, in a brick townhouse in Chelsea. They spent their summers at Wading River. Greenfield liked to bring clients out there. In 1954, he'd begun working for Averell Harriman again, this time for Harriman's campaign for governor of New York. (Harriman went on to win.) But he'd come to admire Stevenson. Maybe he even wanted to prove to Stevenson that ad men weren't evil, that ad men could make politics better, not worse.

Stevenson formally entered the race on November 15, 1955, under the even more pathetic banner "I'm Still Madly for Adlai." Three days later, Ed Greenfield of Edward L. Greenfield & Co. wrote to Stevenson's campaign manager, offering his firm's services. [49]

"You can only be a virgin once," Stevenson said about his decision to run again. [50] The second time around, his prospects didn't look terribly good. He wasn't a new face anymore, and there was very little reason to believe that he could beat Eisenhower in 1956: it's always harder to run against a sitting president, especially in a time of prosperity. Also, in the cruel logic of politics, Stevenson was a loser, and voters don't like losers. But one of the many strange things about Stevenson was that he didn't mind losing, if only he could lose well, if only he could deliver the beautiful speeches and say the brilliant things, educate and elevate, and break through the din, the mindless jingles of liking M&M's, Colgate toothpaste, and Ike.

Eisenhower had a heart attack in September 1955, which was, undoubtedly, a vulnerability. But Stevenson, unlike Eisenhower, faced a divided party and a hard fight for the nomination. Estes Kefauver entered the race for the Democratic nomination in December. Stevenson hadn't run in a single primary in 1952, and he didn't want to enter any in 1956, either. "I'm not going to run around like I'm running for sheriff, shaking hands at shopping centers," he told his close aide and law partner, Newton Minow. "You're wrong, Guv," Minow said. Minow hadn't wanted Stevenson to run, thinking Eisenhower was unbeatable; he'd urged him to hold off until 1960. But if he was going to run, Minow thought, he had to actually run. [51] Stevenson conceded the inevitable, entered the primaries, and shook hands at shopping centers. This contest would be decided by the California primary, scheduled to be held on June 5, 1956. [52] Even before the primary race began, Stevenson found himself in a jam. In February 1956, in Fresno, California, Kefauver and Stevenson spoke back to back. Kefauver talked about civil rights forthrightly, while Stevenson spoke "vaguely and metaphysically." Metaphysically, Stevenson had a lot to say about civil rights, and he had a stronger record on civil rights than Kefauver. But Stevenson refused to say anything simply; he considered simplicity a species of vulgarity. [53]

The Constitution had guaranteed equal rights, regardless of race, under the terms of the Fourteenth Amendment, ratified in 1868. *Brown v. Board* had declared racial segregation in public schools unconstitutional. And still change had not come. The promise *of Brown v. Board* had not been met: most southern schools simply refused to abide by it, and unless the federal government was willing to act, there wasn't much that could be done about that. The Democratic Party needed black voters, but much of the party was composed of white, segregationist southerners. Adlai Stevenson could not figure out how to thread this needle.

In 1956, three days after he spoke in Fresno, Stevenson told a mostly black audience

in Los Angeles that desegregation ought to "proceed gradually" and that care must be taken "not to upset, overnight, traditions and habits older than the republic." These traditions, of course, included not only segregation but terrorism, the murder of children, the raping of women, and the lynching of men. Stevenson's stumbles, and his timidity, cost him. The director of the California NAACP switched his support from Stevenson to Kefauver. [54] The time for patience, the time for waiting, was over, if there'd ever been a time for patience, or for waiting. Adam Clayton Powell Jr., an African American congressman from Harlem, one of the most visible black men in the country, and a Democrat, damned his party for its cowardice and endorsed Eisenhower. [55]

The proposal Edward L. Greenfield & Co. submitted to the Stevenson campaign must have seemed appealing. Greenfield, who had strong civil rights credentials, proposed to undertake research for Stevenson in Powell's Harlem, in San Francisco, and in Los Angeles. Greenfield understood that Stevenson had a civil rights problem, and he wanted to help him solve it.

The Stevenson campaign might have looked favorably on that proposal, except that Stevenson had once again made his opposition to political advertising part of his platform. "The men who run the Eisenhower administration evidently believe that the minds of Americans can be manipulated by shows, slogans, and the arts of advertising," he said. "And that conviction will, I dare say, be backed up by the greatest torrent of money ever poured out to influence an American election—poured out by men who fear nothing so much as change and who want everything to stay as it is—only more so. This idea that you can merchandise candidates for high office like breakfast cereal—that you can gather votes like box tops—is, I think, the ultimate indignity to the democratic process." [56]

No doubt Stevenson's distress about the influence of mass advertising, especially television ads, on American politics was genuine. And, to be sure, when Stevenson declared, "I say, my friends, that what this country needs is not propaganda and a personality cult," a lot of voters agreed with him. [57] Whether they were then, or later, in a position to do much about it is harder to determine. And it's also true that, their supposed scruples notwithstanding, plenty of Democrats wanted to hire ad agencies but had trouble getting any of the best ones to work for them. The big advertising agencies had big businesses as clients. Big businesses supported the Republican Party. If the big ad agencies ran campaigns for Democratic candidates, and were known for helping get Democrats elected, they risked losing their biggest clients. So they said no. "Big persuaders cost big money," as the prominent social critic Vance Packard observed. And "the big contributors were mainly on the Republican side." [58] It's this sort of thing that led candidates like Stevenson to the Ed Greenfields of the world. Little outfits, run by liberals. And especially little outfits, run by liberals, who were selling something different.

In any event, the Democratic National Committee had long since conceded the inevitable, retaining for the 1956 political season an up-and-coming ad agency, Norman, Craig & Kummel (NCK), which was best known for its Maidenform bra ads. NCK took on the DNC's $8 million account for the national campaign. [59] But, for the primaries, the Stevenson campaign needed smaller operators. That's where Ed Greenfield came in. By 1955, Greenfield & Co., with offices in New York and San Francisco, boasted dozens of affiliates expert in "all phases of publicity, public relations, and social science research." [60]

For the Stevenson campaign, Greenfield & Co. proposed to conduct what were known as "depth studies," the qualitative and especially quantitative analysis of interviews with panels of consumers or voters—what later would be called focus groups—to test messages. One brand of soap isn't that different from another. To get

consumers to choose one over another required bombarding them with messages. But which messages worked best? [61] To critics of advertising agencies, this, too, looked sinister. Aldous Huxley imagined the Dr. Jekyll and Mr. Hyde of an imaginary public relations firm, Dr. Jekyll believing the people to be rational and Mr. Hyde—"or rather a Dr. Hyde, for Hyde is now a Ph.D. in psychology and has a master's degree as well in the social sciences"—knowing them to be eminently persuadable. [62]

Greenfield pitched depth studies as a higher ground, a better, more decent alternative to a Cornflakes Campaign. No glitz, no brainwashing, no fakery. He also brought the best minds, from the Center for Advanced Study in the Behavioral Sciences: Burdick, Lasswell, and Lazarsfeld.

To begin, Burdick, with help from Lasswell and Lazarsfeld, prepared a series of confidential white papers for the Stevenson campaign, summarizing the voting behavior studies. This work did not inspire a great deal of faith in American politics. [63] There was little ideological difference between the two parties. People sorted themselves into parties based on their families and their neighborhoods, not on any particular set of ideas. Voters who were not sorted in this way tended to know very little about politics and were unable to identify the meaning of "liberal" or "conservative" (asked "Would you say that either one of the parties is more *conservative* or more *liberal* than the other?," most Americans interviewed could not answer) or to display any knowledge about "what goes with what" (laissez-faire with free enterprise) or "what the parties stand for" (Democrats for labor, Republicans for business). Voters, it turned out, were not especially rational. Complicated messages were lost on them. Elections turned on the undecided voters, and undecided voters make choices that, election to election, prove extremely difficult to predict. [64]

None of this was any secret. It was the sort of thing Burdick also wrote about in popular magazines. In a magazine story called "How You'll Vote in '56," he explained that "scientific voting studies show that party preferences are determined by an individual's background, the political attitudes of his parents and friends, his guess as to the 'best' party for him, his vision of the future and other factors." The article included a quiz and a chart ("Is your father a Democrat or Republican? Put 5 points under the column of your father's party"; "If you are below thirty years of age put 4 points in the Republican column"), allowing readers to calculate their own partisan preferences and likely vote: "In 9 cases out of 10, it will forecast your ballot now!" [65]

Greenfield hired Burdick to conduct interviews with influential men in California. For instance, Burdick reported to Greenfield, after interviewing a newspaper publisher: "Feels that Stevenson has almost no chance against Ike in November. Only another coronary could help. Dislikes Nixon very intensely, but doesn't see how the campaign could be focused on Nixon." [66] This was more or less Burdick's view, too. He didn't expect Stevenson to win. Mainly, he wanted him to run well, "to wage a campaign designed to rephrase the issues, educate the electorate and set the stage for the next Presidential year." Stevenson's biggest problem, Burdick said, had to do with his personality: his divorce, his sense of humor ("too ironic and satirical"), and "the ambiguity and sophistication of his speeches." By no means should Stevenson talk about actual issues, Burdick advised, because "it is clear from the voting studies that specific issues play almost no role, except with the undecideds." [67]

Rereading Stevenson's speeches from the 1952 campaign, Burdick concluded that the problem with Stevenson's speeches was that they were too good. "There has seldom been anything like them in candor, pure intellectual content, high responsibility, and charm," Burdick wrote. "Stevenson said that he would talk sense to the American people. He stated that he thought his first obligation should be to aid the development of the rational faculties of the voters and to elevate political discourse. He did these things." Still, there was a problem. "Stevenson stated that politics were

intricate and difficult, and he emphasized the hopelessness—as well as the vulgarity—of the slick black-or-white approach," Burdick observed. "Yet this difficulty must be faced: how far can one push the rational faculties of the voter without tripping some mechanism of doubt and anxiety."

A candidate could be only so rational when dealing with an irrational electorate. Burdick's recommendation? "The Emphasis upon Complexity Should Be Minimized." [68] Stevenson might be brilliant. The electorate, Burdick concluded, was not.

This conclusion led Eugene Burdick to a crisis of political faith. For all his worry about behavioral science, he glumly recommended to Greenfield that Greenfield & Co. ought to compile California voter data and do its behavioral science best with it. [69] For that, Burdick was not the right man, not at all. Instead, Greenfield turned to another fellow in his collection of men: Ithiel de Sola Pool, a numbers guy who taught at MIT and walked the halls of the Pentagon.

CHAPTER
3

The Quiet American

> Perhaps I should have seen that fanatic gleam, the quick response to a phrase, the magic sound of figures: Fifth Column, Third Force, Seventh Day. I might have saved all of us a lot of trouble.
>
> —*Graham Greene, The Quiet American, 1955*

Ithiel
de
Sola
Pool,
at
the
head
of
the
table,
in
a
seminar
at
MIT.

Early in the afternoon of December 7, 1950, the anniversary of Pearl Harbor, Ithiel de Sola Pool, thirty-three, a gentle and soft-spoken man, took a seat before the Industrial Employment Review Board at a meeting held in Room 2E832 in the National Defense Building in Washington, a building constructed during the war on the site of an old airfield and a slum called "Hell's Bottom." It had five sides and five floors and five wings: a pentagon, *the* Pentagon.

He'd typed his speech out on twenty-three pages of white paper, and then he'd scribbled all over them, scratching out words, inserting lines, blotting letters, and slashing whole paragraphs with gashes of black ink. He set his prose as if it were poetry:

I am not,
and never have been,
either a member,
or a sympathizer
of the Communist Party or of Russia.
I do not have,
and never have had,
any loyalty to any foreign government,
or to any instrumentality of one.

My only ~~national~~ loyalty
is, and always has been
to the United States of America.
Communism I abhor.
The government of Russia
is a base,
brutal,
vicious,
reactionary dictatorship.

Ithiel de Sola Pool had a narrow face and short, curly dark hair. His frame was slight, his gaze unwavering. He had a tight voice, clipped and brisk. [1] It had taken him nearly two years to get this hearing, and he was determined not to squander it. He was, understandably, nervous. He'd been denied a security clearance, a suspected Communist, and this meeting served as his only chance to appeal the decision by proving his loyalty. He opened a case holding a file containing the statement that he'd typed so that he could perform each line with the proper emphasis:

Peace,
freedom,
and our national survival
will never be secure
until this monstrosity called the Soviet regime
is wiped from the face of the earth
preferably from within,
but if need be from without. [2]

Pool would win his appeal. In the 1950s, he'd become a familiar figure in the halls of the Pentagon. After working for Edward L. Greenfield & Co. on the Adlai Stevenson campaign in 1956, he'd go on to found Simulmatics with Greenfield in 1959. In the middle decades of the twentieth century, American behavioral scientists worked on political campaigns and they worked on military campaigns. Pool would bring to Simulmatics his expertise as a quantitative behavioral scientist, an expertise he'd gained as a defense analyst.

Later, decades later, Pool would face a different hearing, when students at MIT would plaster the campus with mimeographed posters of his face, posters that would charge the Simulmatics Corporation with having "master-minded . . . a computer-oriented counterinsurgency program, containing data files not only on revolutionary movements abroad, but also on the U.S. student movement, black rebellions, strikes, etc." [3] Student protesters at MIT wouldn't accuse him of being a Communist. They'd accuse him of being a war criminal.

This future had not been predicted in 1950 when an emerging national security state asked scholars and scientists to profess their loyalty and commit themselves to the development of technology for national ends. Still, this future was set in motion then, like a train leaving a station.

The Cold War altered the history of knowledge by distorting the aims and ends of American universities. This began in 1947, with the passage of the National Security Act, which established the Joint Chiefs of Staff, created the Central Intelligence Agency and the National Security Council, and turned the War Department into what would soon be called the Department of Defense, on the back of the belief that defending the

nation's security required massive, unprecedented military spending in peacetime. The Defense Department's research and development budget skyrocketed. Most of that money went to research universities—the modern research university was built by the federal government—and the rest went to think tanks, including RAND, the institute of the future. There would be new planes, new bombs, and new missiles. And there would be new tools of psychological warfare: the behavioral science of mass communications.

To staff its Social Science Division, in 1947 RAND held a conference in New York, with Harold Lasswell, after which the head of the division recruited Pool to work at RAND. [4] RAND likely wanted Pool to be part of a top secret study group, soon to be authorized by the National Security Council. [5] But the job came with a catch: the offer stood so long as "the clearance nuisance can be satisfactorily handled." [6] The work Pool was supposed to do at RAND required handling classified military material; he could not be hired without a security clearance.

RAND had staked its reputation on the conviction that national security depended on the expertise of intellectuals. In a national security state, that conviction required intellectuals to agree to conduct their work in secrecy. RAND's security measures at its fortified headquarters included guards at all entrances and exits and the requirement that all visitors wear a badge. Top secret documents could only be checked out of a single top secret office and signed out by hand. Visitors and consultants who did not have top secret clearance—men like Paul Lazarsfeld—were consigned to a separate building, known as the Isolation Ward. [7] Pool needed to work in the main building. To do that, he had to convince the clearance review board that he wasn't a Communist.

"You have close and sympathetic association with known members of the Communist Party, namely; your parents, Mr. and Mrs. David de Sola Pool," Pool had been told by the board, in a letter of notification. [8] That day in 1950, facing the board in the Pentagon, he'd intended to say something about how he had felt when he read that letter—did they mean for him to disavow his own parents?

Naturally, when I first read the charges against me
I was angry
and when I heard my parents maligned I was furious.

Calming himself down, he revised much of this part of his statement to read:

I realize you have a right to call me here
and to interrogate me thoroughly.
I intend to cooperate to the fullest extent that I can.

And then, thinking still better of it, he seems to have scratched this whole section out. [9]

Pool was the child of rabbis, of learned men and women, for generations, all the way back to medieval Spain. His father, David de Sola Pool, born in London, headed the Orthodox congregation Shearith Israel, in New York. A distinguished scholar and translator with a PhD in ancient languages from Heidelberg University, David de Sola Pool was the most important Sephardic rabbi in the United States. He was also a political activist. "Our religion, Judaism, seeks salvation for all mankind," he said in the 1950s. "The emphasis of our Bible is on social justice for all rather than on the mystic quest of salvation for the individual." [10] Pool's mother, Tamar, the Jerusalem-born

daughter of a rabbi, was herself a scholar of languages. [11] They'd named their only son, born in 1917, Ithiel, a name that appears only twice in the Bible—once in the book of Nehemiah and once Proverbs—a name associated with signs and prophecy.

He'd been dyslexic as a boy. A teacher trying to explain to Rabbi and Mrs. Pool what was wrong with their son told them to imagine what it would be like if instead of the Pools they thought they were "the Loops." It was a difficult childhood for the son of lovers of language, to be a boy who stumbled over words. [12] He loved, instead, numbers.

"I do not share all their political views," Pool had intended to tell the review board. "They are Zionists and I am an anti-Zionist." Also, "they may have been duped by commie fronts and hidden commies on a few occasions," but he was sure they were not themselves Communists. "It is easier for me to imagine Mahatma Gandhi as a member of the Union League Club than it is to imagine my Father or my Mother in the Communist Party," he wrote. He struck all that out, and decided, instead, to wait for questions. [13]

The second charge against him was harder to answer: "You have held membership in Communist Front organizations, namely; American Civil Liberties Union, Young Peoples Socialist League, American Student Union and Consumers Union." [14] None of this was untrue.

Pool had been a precocious child, a brilliant child; he'd even overcome his dyslexia. "*Faust* is the life story of the struggle of a split personality to find meaning and an aim in life," he'd written in a penetrating and eerily autobiographical tenth-grade essay, at the Fieldston School in New York. [15] He became a socialist when he was sixteen.

I should like,
gentlemen,
to outline:
First, how I came to be a socialist.
Second, how I ceased being a socialist.
Third, what my attitude towards communism was <u>then</u>.
And fourth, what relevance I think this has to security.

The Depression had driven him to it, he said. "With every month the breadlines were growing longer," he explained. "I think it is not surprising that a theory which said that misery was bound to increase until the system was changed appealed to me then." He joined the Young People's Socialist League, and he joined the ACLU (which was hardly a Communist front). He went to the University of Chicago in 1933, the year Hitler seized power, and studied political science with Lasswell. He was, at that point, still a socialist.

In 1936, the summer after his junior year, he went to Mexico, which would soon offer asylum to Leon Trotsky, the exiled Russian revolutionary. He talked a lot about the proletariat. [16] In Germany, the atrocities began. Pool, in Chicago, watching the rise of Joseph Goebbels, dedicated himself to the study of propaganda. In September 1939, when Germany invaded Poland, and used propaganda to suggest that the Poles had been the aggressors, Pool enrolled in a course called Political Parties and Propaganda. "Discuss the possibilities of the experimental method in studying political behavior," he was asked on a test. "What difference is there between the authoritarian theory of the state and the totalitarian theory of the state?" [17] Watching the rise of totalitarianism, Pool changed his mind about socialism.

"With the outbreak of the war in Europe in 1939 I concluded that a socialist must be

for the Allies against Hitler," he told the review board. A lot of his socialist friends were pacifists: this he found indefensible.

> *I came to see that society is far too complex to be tinkered with according to the blueprints of any idealistic theorist, no matter how idealistic.*
>
> . . .
>
> *In other words, men should not try to play God.*
> *I saw that when they do that the result is fanaticism,*
> *barbarism,*
> *and tyranny as in Russia.*

Yes, he had been a socialist. Might he not be absolved? In his defense, Pool quoted the 1940 Republican presidential candidate, Wendell Willkie. "Willkie once said, with reference to his own past, that anyone who is not a socialist at 20 has something wrong with his heart and anyone who is still a socialist at 30 has something wrong with his head." [18]

Pool had been questioned about his views long before he sat in front of a review board in Washington in 1950. After Pearl Harbor, he tried to enlist, only to learn that he had tuberculosis. He wanted to find another way to serve: Lasswell offered him that way. In 1941, when Lasswell started up the Experimental Division for the Study of Wartime Communications at the Library of Congress, Pool, still a graduate student, joined him there, to conduct propaganda by way of the quantitative analysis of words. [19] This field—the counting of words—became known as "content analysis." For Lasswell, Pool worked on a content analysis of Communist propaganda in reaction to frustration. He counted the words, particular words, in Soviet newspapers, searching for patterns. [20] Someone must have questioned whether Pool really ought to be working for the government, in any capacity, because in April 1942, all of twenty-four, he wrote a "To Whom It May Concern" letter attempting to clear up "a number of instances of confusion of my present with past political views," presumably the sort of confusion that was impeding Lasswell's ability to hire him for a government job, permanently. Pool explained in this letter that he'd decided to devote himself to academic research, instead of revolution, and that he'd also become quieter about his opinions. [21] The fiery college student had become a cautious graduate student.

In September 1942, Pool accepted a position teaching political science at Hobart College, in Geneva, in upstate New York, where he moved with his wife, a scientist, and their first baby, a son named Jonathan. Another son, Jeremy, would be born in 1945, the year the war ended, with the destruction of Hiroshima and Nagasaki. Pool was named chairman of Hobart's Division of Social Science. [22] "It is hardly an atmosphere where a violent radical would thrive unnoticed," Pool told the review board. [23] That seemed a reasonable enough statement, but teaching at a small school in a small town, unnoticed by everyone, was just what a former Nazi, a war criminal, disguised as "Charles Rankin," did in Orson Welles's chilling 1946 film, *The Stranger.* "Not only in the College, but also in the town, I was accepted as a reliable, responsible, and loyal citizen," Pool said. So was Charles Rankin. That was the problem with subversives: they found it so easy to hide.

In 1948, when the government denied Pool a security clearance, RAND rescinded its offer of employment. Pool had no intention of spending his career at Hobart College. The next year, he took an unpaid leave of absence from Hobart to accept a job at a Palo Alto think tank at Stanford called the Hoover Institute and Library on War, Revolution and Peace. There, with Lasswell and another young scholar named Daniel Lerner, he

continued the work they'd all done during the war in a new form, a Carnegie Corporation–funded project called Revolution and the Development of International Relations, or RADIR. It was meant to be a kind of social science radar. "Radar," short for "radio detection and ranging," had been pioneered at MIT. Radar detects the motion of objects; RADIR was meant to detect the movement of ideas.

At Stanford, Lasswell, Lerner, and Pool were trying to invent a kind of ideological radar that could detect the *bleep, bleep, bleep* of political unrest. (One way to think about this kind of content-analysis work is as a very early version of Google Trends, which also started at Stanford, in the graduate work of Larry Page and Sergey Brin.) In one study, Lasswell, Lerner, and Pool searched editorials in the leading newspapers of Great Britain, Russia, the United States, France, and Germany, from 1890 to 1950, for words like "internationalism" and "security," and then counted these words and sorted, or coded, them into 416 political symbols. Lasswell made the list of symbols. Lerner supervised the coding. And Pool analyzed the results, in hopes of creating a mathematical model—ultimately, a predictive model—of the historical relationship between "ideology" (democracy and capitalism) and "counter-ideology" (authoritarianism and socialism). [24] They were playing Spot the Revolution. They wanted to know: What will happen next?

All that while, the House Un-American Activities Committee, or HUAC, whose members included a freshman congressman from California named Richard M. Nixon, was playing Spot the Subversive. David de Sola Pool's name turned up in a HUAC document from March 1950, on a list of sponsors of a 1948 Chicago conference of the "American Committee for Protection of Foreign Born," an organization suspected of being a Communist front. [25] Pool's chances at a security clearance were getting worse, not better. By then, he'd realized he'd need outside support. He secured and submitted to the review board an affidavit from Ralph de Toledano, an editor of *Newsweek* and later a founder of *National Review* who'd likely known Pool since they were students together at the Fieldston School. [26] De Toledano also wrote a letter to Nixon, pleading Pool's case. "His record is clean right down the line—anti-Stalinist all the way," de Toledano informed Nixon. "On his parents, the story is a little different. They are not Party members but they've got some bad party front affiliations and they've been pretty involved. If this means that Ithiel is marked lousy, I don't know what can be done. I do know that he sees them practically never—they're in New York and he in California." [27]

In the end, Pool's argument before the review board came down to his personal conviction: socialists are truthful people who state their beliefs in the open; Communists are liars and subversives who hide what they believe. He was an honest man, a former socialist, but he had never been a Communist. And he was no longer a member of the Left. [28]

Two weeks after Pool delivered his statement, the review board reversed its decision and granted him his long-sought security clearance: "The Secretaries of the Army, Navy, and Air Force therefore withdraw any objection to your employment on classified military information." [29] Pool wrote to Nixon to thank him. [30]

Pool had come by his security clearance and his anti-Communist credentials the hard way, and he would cling to them, and burnish them, all his life, like medals earned on a battlefield. Saul Bellow, who'd known Pool since they were undergraduates and fellow Trotskyites at the University of Chicago, later memorialized him as "Ithiel Regler" in a novel called *A Theft*. Bellow must have known about Pool's troubles getting a national security clearance. In the novel, he includes a scene in which Ithiel Regler, asked for an ID, provides a "Pentagon pass." Bellow took pains to remark that this Ithiel could be relied upon: "he wouldn't give out information that might be classified." Ithiel Regler had every president's ear: "If he wanted, he could do

with Nixon, Johnson, Kennedy, or Kissinger, with the shah or de Gaulle, what Keynes has done with the Allies at Versailles." Ithiel Regler says oracular things like "Neither the Russians nor the Americans can manage the world. Not capable of organizing the future." [31] Ithiel de Sola Pool was not Ithiel Regler, not exactly, but, like him, he would try and try to organize that future, by the use of numbers and mathematical models, to make human behavior predictable. Fanatics and fascists made men gods, Pool thought. He would place his faith in numbers, patterns, models, and calculated predictions.

Between 1950 and 1952, the budget of the United States Department of Defense grew from $500 million to $1.6 billion. In 1953, Eisenhower committed to a defense strategy known as the "New Look," which placed priority on the precise targeting of weapons, rather than on ground troops. This pumped money into both the electronics and the aeronautics industries and into advanced research into technologies that could speed calculation. In the middle of the 1950s, military spending made up close to three-quarters of the federal budget. [32] In 1952, the National Science Foundation announced that the nation needed one hundred thousand more scientists; universities furiously set about producing them. [33]

In 1951, with his long-sought security clearance in hand, Pool resigned from Hobart College and went back to the Hoover Institute. In nearby Berkeley, or maybe in a meeting at Stanford, he met the mesmerizing, out-of-a-novel-by-Ian-Fleming Eugene Burdick. [34] But the prospects for behavioral science at Stanford were limited. Liberal intellectuals might have concluded that liberalism had triumphed the world over, but liberalism had not triumphed, and one place where it had really not triumphed was Stanford University. Instead, Stanford became an incubator, one among many, of the modern conservative movement. Herbert Hoover, an ex-president, an engineer, a Stanford alum, and the founder of the Hoover Institute, rejected what he called the "squirrel-cage scholasticism" of behavioral science. [35] He was not alone. In 1952, in *God and Man at Yale*, a very young William F. Buckley offered a similar rebuke. To conservatives, behavioral science smacked of the New Deal. Throughout the McCarthyite 1950s, conservatives damned the godlessness and "moral idiocy" of behavioral science, citing its technocratic posture as a species of socialism, the control of the people, even of their very minds, by the state. [36]

There was something more to their critique. Conservatives looked to the past, venerated the past. "A conservative is someone who stands athwart history yelling Stop," Buckley would famously declare in 1955, in *National Review*. [37] Behavioral science looked to the future. That, to conservatives, was a hallmark of its liberalism.

Pool looked for a job somewhere else: MIT. In 1949, when the Russians jammed radio transmissions to the Soviet Union, the State Department turned to university researchers to help solve the problem of "how to get information into Russia." This led in 1950 to Project TROY, a joint operation of scholars from MIT, Harvard, and RAND, which recommended a series of technical means of "perforating the iron curtain." To develop psychological means to the same end, MIT in 1952 established the Center for International Studies, funded by the Ford Foundation and the CIA and headed by Project TROY's Max Millikan, a former assistant director of the CIA. The next year, Millikan hired Pool to direct the center's new International Communications Program. Pool's colleague Daniel Lerner moved to MIT, too. [38]

The departure of Pool and Lerner from the Hoover Institute left Palo Alto without a behavioral sciences research group, a vacancy filled by the Center for Advanced Study, founded the next year. [39] In 1959, Hoover would remake his eponymous institution into a conservative think tank. "The purpose of this institution," its new charter said, "must be, by its research and publications, to demonstrate the evils of the doctrines of

Karl Marx." [40]

Disavowing Marx, most midcentury American behavioral scientists flirted with Freud. They submitted themselves to psychoanalysis; it infected their marriages like a virus. They loved women; they found women disgusting; they hated women. They divorced women. Analyzed, Pool left his wife and their two young sons. He found his second wife when, after accepting the position at MIT, he visited the University of Chicago and met a PhD student in psychology, Jean MacKenzie. She had just finished her dissertation, having made a study of the role of research scientists in corporate laboratories. [41] She was glad Pool had already been analyzed. [42] She converted to Judaism and married him in March 1956. [43] Of all the Simulmatics marriages, theirs would be the strongest.

Saul Bellow, who adored the idea of female enthrallment, would describe Ithiel Regler as irresistible to women. [44] "On a scale of one to ten . . . he *was* ten," a female character in Bellow's novel reports. "When Ithiel comes to town and I see him at lunch, I start to flow for him. He used to make me come by stroking my cheek. It can happen when he talks to me. Or even when I see him on TV or just hear his voice. *He* doesn't know it—I think not—and anyway Ithiel wouldn't want to do harm, interfere, dominate or exploit—that's not the way he is." [45] Bellow's heroine (like all Bellow women) "let politics alone, asking no questions." The classified nature of Ithiel Regler's work only added to his allure. "The more hidden his activities, the better she felt about him. Power, danger, secrecy, made him even sexier." In her Manhattan apartment, she cooks for him naked, wearing nothing but clogs, while, "stretched on the bed, Ithiel studied his dangerous documents (all those forbidden facts)." [46] This was less a portrait of Ithiel de Sola Pool than a fantasy of Saul Bellow's, a fantasy of stretching in bed with his very important work, his dangerous documents, his forbidden facts, watching a naked woman cooking for him in the kitchen. Still, it wasn't only Bellow's fantasy; it was the fantasy of an entire generation.

During the years when Pool rose to influence in the Pentagon, the United States exerted its authority around the world. In 1950, when Pool wrote to thank Nixon for his help in getting a security clearance, he urged the new senator to keep hitting Communists hard, especially abroad. "The communists will keep punching wherever they can make a dent, and we must do the same," Pool told Nixon. "If we withdraw it will only be a matter of time before they can mobilize overwhelming force against us from all continents." [47]

The places where communism could make a dent were, at this point, not in Europe but, instead, where people who had freed themselves of European imperial rule were building new nations. Some would be Communist, allied with the Soviet Union and China; others would be capitalist, allied with the United States. American money went where the Pentagon believed it was needed most, to stop the spread of communism. Between 1949 and 1952, three-quarters of U.S. foreign aid went to nations in Europe; between 1953 and 1957, three-quarters of that same budget went to countries outside Europe. Much of that money went to Southeast Asia.

In 1951, Massachusetts congressman John F. Kennedy and his younger brother Robert went on a seven-week tour of the Middle East and Asia. Jack Kennedy intended to run for a seat in the Senate; Bobby would manage his campaign. Fatefully, they stopped in Vietnam, which had declared its independence from French rule at the end of the Second World War. France, though, had refused to recognize Vietnam's independence. "The case of Indochina is perfectly clear," FDR had written in 1944. "France has milked it for one hundred years. The people of Indochina are entitled to something better than that." [48] But in 1951, with France still fighting to regain power

in a war against forces led by Ho Chi Minh, the United States, violating a staunch opposition to colonialism, a commitment made by FDR, was providing aid to France. [49]

Could behavioral scientists have predicted anything accurately in the 1950s, much agony would have been averted. The future of war? The United States engaged only in the futility of ill-considered military spending. Despite $2.5 billion in military aid from the United States, France lost the war in 1954, at the Battle of Dien Bien Phu, after which a peace treaty forged at Geneva divided Vietnam at the seventeenth parallel. North Vietnam would be Communist, headed by Ho Chi Minh. South Vietnam would be headed by Ngo Dinh Diem, a U.S.-backed Catholic nationalist. Elections about reunification were to be held in two years. They were never held. Instead, Diem declared South Vietnam a republic, and war broke out between the North and the South. The United States provided, at first, only advisers, then air support, then marines, and finally soldiers, in a war that would not end until 1975, by which time it would have taken the lives of fifty-eight thousand Americans and three million Vietnamese, two million of them civilians.

In 1955, Graham Greene, who had reported from French Indochina for the London *Times,* would lament French colonialism and American advice alike, in a novel called *The Quiet American*, in which a hard-bitten English newspaper correspondent on assignment in Saigon watches an agent named Alden Pyle arrive in Vietnam and die there, as deluded about America's role in Indochina at the end the book as he'd been at the beginning. Greene based his Pool-like Pyle on an American aid worker he'd met in Saigon in 1951. "Pyle was very earnest and I had suffered from his lectures on the Far East, which he had known for as many months as I had years," Greene's narrator observes. "Democracy was another subject of his—he had pronounced and aggravating views on what the United States was doing for the world."

Pyle is also often, if wrongly, read as modeled on Colonel Edward Lansdale, a former advertising executive turned CIA psychological warfare expert who spoke neither French nor Vietnamese but nevertheless went to Vietnam in 1954 to support a pro-American government and undermine Vietnamese Communists. Greene denied any connection and insisted that this reading was largely Lansdale's own: arguing that Pyle was modeled on him was a way for Lansdale to damn Greene's anti-Americanism while making himself into a literary celebrity. Greene and Lansdale had in fact met in Vietnam in 1954. [50] In any case, Pyle was younger and more innocent ("I never knew a man who had better motives for all the trouble he caused") and more of a reader than Lansdale. At one point, the narrator, stopping in Pyle's apartment—the two men are fighting for the love of a Vietnamese woman named Phuong—thumbs through the books on Pyle's bookshelf: *The Advance of* Red China, *The Challenge to Democracy*, *The Role of the West*. [51] It might have been Pool's bookshelf.

In 1955,the year Greene published *The Quiet American*, Ithiel de Sola Pool, defense intellectual, took on a consulting job with New York ad man Edward L. Greenfield. They might have met earlier, maybe in 1950, when Greenfield was studying, briefly, with Lasswell at Yale. Pool would surely have been in close communication with Lasswell that year, asking for his help in gaining a security clearance. Greenfield and Pool had Lasswell in common, and more, too. They were part of a generational and religious cohort: young, ambitious Jewish men who'd missed the fighting in the Second World War and traded one faith for another, Judaism for liberalism.

"Last night's gathering went a long way towards cementing the group," Greenfield reported to Pool in December 1955, from the offices of Edward L. Greenfield & Co. in New York. [52] Greenfield knew Lasswell. Greenfield knew Burdick. Greenfield, it seemed, knew everyone. Pool, fascinated, started making notes for a new line of research. How many acquaintances do most people have? How many people do any

two people know in common? How many degrees of separation separate any one person from any other? How small is the world?

"Given that A knows B, what is the probability that B knows *n* persons in the circle of acquaintances of A," Pool asked. "My first hunch was that perhaps a logarithmic relationship was plausible." The math dealing with "the probability of B knowing C, given that A knows B and A knows C" was fuzzy. But what about "the case where A does not know B, but where they have one acquaintance in common"? [53]

Greenfield collected people. Pool collected data. Pool began to make a list of everyone he knew, including the man who seemed to know everyone: Ed Greenfield. And then he sent that list around, all over the country, to ask people he knew if they knew people he knew: "Check here if you know this person." He included with the request a "Definition of Knowing": If you ran into "Edward L. Greenfield, Public Relations, N.Y.C. Formerly Univ. of Chicago, Yale Law School," on the street, would you recognize him? Would you say hello? Would Edward L. Greenfield know you, too? [54] And then Pool ran the numbers, calculating the chances. He plotted his data and came up with a function to describe that plot. Then he used that function to extrapolate beyond his data. He devised a theory, a theory that would come to undergird all social media companies, including Facebook and Twitter. He called it the theory of "social networks." [55]

In 1956, Greenfield & Co.'s operation in California, installed in an office in San Francisco, reported that Adlai E. Stevenson's prospects in that state's upcoming and must-win June 5 primary looked excellent. As early as April, Greenfield began drafting a press release announcing Stevenson's victory in the state. It began, "In the last twenty-four hours the people of America have overwhelmingly named Adlai Stevenson their choice as the Democratic nominee for President." [56] Meanwhile, Ithiel de Sola Pool and Eugene Burdick were still conducting their research.

"I'm from the Stevenson for President headquarters," Pool had instructed his team of California volunteers to say, when knocking on doors. "Mr. Stevenson would like to know how the voters feel," they were supposed to go on. "He wants to represent the whole American people, but it's pretty hard for a man in his position to know exactly how they feel." Then came the questionnaire, whose answers Pool put on punch cards. [57]

In California, Burdick and his colleagues conducted in-depth interviews with one hundred political "elites." Pool and his volunteers polled 750 voters. In a report on Los Angeles, they concluded that "Stevenson has lost a good deal of badly needed support among Negroes and other minority groups." [58] On May 13, they submitted their final reports to Greenfield. Their leading recommendation had to do with civil rights: "Do not make the mistake of thinking that civil rights and desegregation are important issues only to the Negroes." [59]

In the June 5 California primary, Stevenson beat Kefauver, 1,139,964 to 680,722, with 62.6 percent of the vote. [60] The senator from Tennessee withdrew from the race. Edward L. Greenfield & Co.'s Social Science Division claimed credit.

The 1956 Democratic National Convention was held in the same stockyard amphitheater on the South Side of Chicago where Stevenson had accepted his party nomination four years before. In Gore Vidal's play *The Best Man*, set at the convention, an unmistakably Stevenson-like presidential candidate named William Russell, played by Henry Fonda in the movie, is forever quoting Shakespeare and the Old Testament and Oliver Cromwell, to the bafflement of reporters and voters alike. Russell doesn't like Gallup. "I don't believe in polls," he says. "Accurate or not." He doesn't like ad men. "This is exactly the kind of thing I went into politics to stop!" he cries. He's fussy

and semantic and metaphysical.

RUSSELL

What is a liberal, Senator?

(RUSSELL *crosses to bedroom, picks up dictionary, returns to living room, thumbing pages*)

CARLIN

(*Groans*)

And I thought Adlai Stevenson was a pain in the neck.

Needless to say, Vidal's best man loses. [61]

At the 1956 Democratic National Convention, the actual Adlai Stevenson arranged for John F. Kennedy, now thirty-nine, his star rising, to deliver the nominating speech. Stevenson's speechwriters drafted the speech, but Kennedy rejected it and, with help from his aide Ted Sorensen, wrote his own. [62] He said, from the festooned rostrum, "The American people saw and heard and admired this man for the first time four years ago, when, out of the usual sea of campaign promises and dreary oratory and catchy slogans, there came something new and different—something great and good—a campaign and a candidate dedicated to telling the truth." [63]

Stevenson had been new and different in '52; in '56, he was neither. And, even though Kefauver had withdrawn, Stevenson still hadn't cinched the nomination. Truman, who'd supported Stevenson in 1952, now supported Averell Harriman, who hadn't entered any of the primaries. Luckily for Stevenson, Truman's support didn't count as much as it used to. Stevenson won the nomination on the first ballot. Stevenson had no intention of hitching himself to his former running mate, the segregationist John Sparkman. Kennedy hoped that Stevenson would name him as the vice-presidential nominee. But Stevenson believed the honor of delivering the nominating address had been enough of a gift for Kennedy. Instead, doing something that had never been done before, Stevenson threw the choice of vice president to the delegates, as a way of demonstrating his commitment to a more democratic process. The delegates chose Kefauver. Stevenson had been nearly certain Kennedy would win. Kennedy never quite forgave him. Nor did his younger brother, closest adviser, and fiercest protector, Bobby, who was famous for bearing grudges, and who believed that Stevenson had double-crossed him. [64]

Stevenson, in his acceptance speech, called for a New America. "I mean a New America where poverty is abolished and our abundance is used to enrich the lives of every family," he said, to a hushed hall. "I mean, my friends, a New America where freedom is made real for all without regard to race or belief or economic condition. I mean a New America which everlastingly attacks the ancient idea that men can solve their differences by killing each other." [65]

He wanted a new America, but he was an old candidate. A lot of Americans were a little sick of Adlai E. Stevenson by 1956. His speeches were beautifully written; his delivery was depressing. After Stevenson delivered his acceptance speech, Arthur Schlesinger ran into Phil Graham, publisher of the *Washington Post*. "You know, I thought that the Democrats really had a chance to win," Graham said, "until Adlai began to speak." [66]

For the general election, Stevenson named George Ball his director of public relations, fairly perversely, since it was Ball who in 1952 dubbed the Eisenhower's

approach the Cornflakes Campaign. Ball found the assignment humiliating. [67] Stevenson did agree, this time around, to appear in a series of television ads, except that they were really anti-television ads: their purpose was to warn Americans against believing everything they see on TV. One ad, shot in Stevenson's book-lined study at his house in Libertyville, Illinois, begins with a gaffer snapping a slate to reveal a frame that exposes all the trappings of a television shoot, its clutter of cameras and cables, an entire contrivance. Stevenson's television ad was an indictment of television. "I wish you could see what else is in this room," Stevenson says, directing the viewers' attention to the artificiality of the scene. "Beside the camera, there are lights over here, there are cables all over the floor." [68] It was positively postmodern.

Eisenhower, meanwhile, did nearly all of his campaigning on television. After the heart attack he'd suffered in the fall of 1955, he'd undergone surgery for a bowel obstruction the following spring, which together left him little able to head out on the campaign trail. [69] The GOP's strategy was to build a "political mousetrap": keeping quiet and letting Stevenson do all the talking, on the theory that he'd eventually screw up. [70]

It is difficult to say whether the Stevenson campaign paid much if any attention to the reports that came out of Edward L. Greenfield & Co.'s Social Science Division. In one way, Stevenson appears to have ignored Greenfield's recommendations: he did not strengthen either his position or his rhetoric on civil rights. In another way, he seemed to accept them. Except for civil rights, "the issues, per se, are relatively unimportant," one Greenfield & Co. report advised the Stevenson campaign. [71] And maybe Stevenson took that to heart. Critics called him "the Issueless Candidate." [72]

The eggheads still loved him, but there are only so many eggheads. Ike won in a rout. In November 1956, thirty-six million out of sixty-one million votes cast went to the general. He won forty-one out of forty-eight states, including California. Every state Stevenson won had been part of the Confederacy. Democrats won the Jim Crow South and lost the rest of the country. [73] Democrats won both the House and the Senate but, as a national party, the Democratic Party looked to be falling apart. White southern Democrats kept threatening to leave the party if it fought for civil rights, but without fighting for civil rights the Democratic Party could not win back the presidency.

Ed Greenfield, man of ideals, and man of ideas, decided that the Democrats needed a miracle, and he intended to provide it. [74] He needed more men. He intended to build a machine. Sometimes he called it an Issues UNIVAC. Sometimes he called it a Voting Behavior Machine. It would run the numbers, super fast, and tell a candidate the consequences of taking a position on any issue, anywhere, state by state, county by county, voter by voter, issue by issue. It would have to be ready in time for the election of 1960. To build that machine, he knew, he needed a very rare sort of man: a computer man.

CHAPTER
4

Artificial Intelligence

> The Fortran language is intended to be capable of expressing any problem of numerical computation. . . . However, for problems in which machine words have a logical rather than a numerical meaning it is less satisfactory, and it may fail entirely to express some such problems.
>
> —*Fortran: Automatic Coding System for the IBM 704, 1956*

Alex Bernstein playing chess with an IBM 704, 1958.

"Sometimes, along about four in the morning," Alex Bernstein told *The New Yorker,* "I'd be bent over my chessboard, making encouraging noises at 704, and, glancing up, I'd see somebody staring in at me through the Madison Avenue windows. From the look on his face, I'd know he thought I was absolutely balmy." [1] Faces pressed to the glass, passersby would watch him, puzzled, bewildered, unable to believe their eyes: Was this funny little man really playing chess against a machine?

The IBM 704 took up "about an eighth of an acre of brightly lighted floor space" in the gleaming ground-floor lobby of IBM's twenty-story world headquarters in New York, a showroom, on the corner of Madison Avenue and Fifty-Seventh Street. Anyone walking down the sidewalk could peer in through the giant plate-glass windows and see the 704, which, as *The New Yorker* observed, "consists of eighteen glass-fronted cabinets; an immense console studded with rows of push buttons and red, green, and yellow lights; and a printing machine." [2] It was like something out of a movie, extraterrestrial.

Bernstein had been born in 1931, in Milan. His parents, Russian Jews, had fled first to France and then to Italy. [3] His father died, but he and his grandfather, mother, and sister eventually made it to New York. He was an avid chess player. "I've been playing since I was nine, and I'm fairly good," he told *The New Yorker*. He went to the Bronx High School of Science and then to the City University of New York. During the Korean War, he served in the U.S. Army Signal Corps, where he worked on the electronic calculating machines used to break codes and to send signals. (The Signal Corps would retire its last pigeon in 1957.) [4]

Electronic computing machines capable of making calculations with unprecedented speed emerged out of the military priorities of the Allies during the Second World War, when engineers in the United States and the United Kingdom built them to compute missile trajectories and crack ciphers. These machines were top secret. The Mark I,

developed by Harvard and IBM, was programmed by a navy lieutenant (later rear admiral) and Vassar professor of mathematics named Grace Murray Hopper. The ENIAC, the Electronic Numerical Integrator and Computer, had been invented by J. Presper Eckert and John Mauchly at the University of Pennsylvania. After the war, Eckert and Mauchly formed the Eckert-Mauchly Computer Corporation and hired Hopper as senior mathematician at their company, which was soon bought by Remington Rand, a typewriter manufacturer. In 1946, they unveiled the ENIAC to the public. "One of the war's top secrets, an amazing machine which applies electronic speeds for the first time to mathematical tasks hitherto too difficult and cumbersome for solution, was announced here tonight by the War Department," reported the *New York Times*, in a front-page story that included a photograph of a thirty-ton machine the size of a room. [5] A newsreel called it the world's first "giant electronic brain." [6]

It wasn't only reporters who likened the new machines to the human brain. In 1948, the MIT mathematician Norbert Wiener published a book called *Cybernetics*, in which he compared the nervous systems of living things with the automatic control systems of machines. [7] At Remington Rand, Hopper devised the first "compiler," which allowed programmers to write code in something close to English. [8] In an essay called "The Education of a Computer," Hopper reported that "it is the current aim to replace, as far as possible, the human brain by an electronic digital computer." [9]

Remington Rand unveiled the UNIVAC in 1951, but the machine made its real public debut on Election Night 1952, when CBS News commissioned it to predict the outcome of the election. Greenfield got giddy at its promise. Still, the development of the first commercially available general purpose computers raised fears about unemployment, about machines replacing men. "Machines should be used instead of people whenever possible," advised a staffer for the National Office Management Association in 1952. At least at first, though, most machines replaced not men but women, taking over daily office tasks done by female clerks, typists, and filers, and "data-processing" tasks like handling payroll and inventory and generating paychecks. [10]

The commerce in computers grew slowly. By 1953, Remington Rand and IBM had, between them, installed a grand total of nine computers in the United States. [11] The practice of referring to these machines as "electronic brains" and "thinking machines" elicited fears of a robot invasion, a nightmare. In 1954, a journalist who visited an IBM factory in Endicott, New York, reported that, although signs on every wall urged him, with IBM's motto, to think, he left the factory with a melancholy vision of a future "of pale, silent people standing submissively before exorbitantly active metal boxes." [12] It was just this sort of thing that alarmed the passersby on Madison Avenue who spied Alex Bernstein, pale and exhausted, playing chess in the black of night with an IBM 704, metallic and untiring.

IBM had launched the 704 in 1954, the only computer that could handle complex mathematics. [13] (By the standards of the day, it was blindingly fast, handling twelve thousand floating-point operations per second. By the standards of the twenty-first century, it was prehistorically slow. The 2012 iPhone 5, for instance, handled 171 million floating-point operations per second.) Eugene Burdick had probably seen an IBM 704 at Stanford; it's exactly the sort of machine he describes in his 1956 novel, *The Ninth Wave*. At MIT, Ithiel de Sola Pool used one at MIT's new Computation Center, which housed a single IBM 704, meant to serve every research university in New England. [14]

But if these machines were to do more than make very fast calculations, they'd need subtler instructions. IBM charged those of its mathematicians who, like Bernstein, were known to be good chess players, with devising a new compiler, to better translate English-like language into instructions to be given to a machine. In 1956, they created

FORTRAN, short for FORmula TRANslation. [15]

FORTRAN is usually called a language but it's not exactly a language, at least in the human sense; it's a set of instructions used in programming a computer, instructions like READ, FORMAT, GO TO, and IF. IF instructed the 704 to think a thought like this: If A is true, then X; else if B is true, then Y. This is the way a FORTRAN program instructed an IBM 704 to "think"; it isn't necessarily the way a person thinks. FORTRAN wasn't designed to teach a 704 to think like a person. It was designed to instruct a 704 to undertake mathematical operations. "The Fortran language is intended to be capable of expressing any problem of numerical computation," the manual explained. But then it took pains to warn: "However, for problems in which machine words have a logical rather than a numerical meaning, it is less satisfactory, and it may fail entirely to express some such problems." [16] This caveat notwithstanding, computer men began to call FORTRAN a language, as if it could express everything that mattered. And they began, too, to try to collapse the distinction between an electronic brain and a human one.

The Simulmatics Corporation got its name from two words, mashed together: "simulation" and "automation." Ed Greenfield always figured "simulmatics" would one day be like the word "cybernetics," a catchphrase. Instead, "artificial intelligence" became that catchphrase. Still, "artificial intelligence" is pretty close to what Greenfield meant by "simulmatics."

The expression "artificial intelligence" was coined in 1955 when four men proposed a summer research seminar, to be held at Dartmouth College, in Hanover, New Hampshire: John McCarthy, a young mathematics professor at Dartmouth; Nathaniel Rochester of IBM, who'd designed the IBM 701; Claude Shannon, of Bell Labs; and Marvin Minsky, who'd just finished his PhD at Princeton. Before then, schemes to get a computer to think like a human had fallen under the broad heading of "automation." In the four men's proposal for the seminar, they also referred to simulation: they described their work as proceeding from "the conjecture that every aspect of learning or any other feature of intelligence can in principle be so precisely described that a machine can be made to simulate it." If the brain is like a machine—a very big *if*—the simulation of human intelligence is limitless, because "if a machine can do a job, then an automatic calculator can be programmed to simulate the machine." To distinguish what they wanted to do from mere automatic calculation and mere computer simulation, they elected to call what they hoped to study that summer "artificial intelligence." [17] And that's what it came to be called eventually, but in the 1950s, on the streets of America, outside of the Dartmouth conference, the words for this sort of thing were still "automation" and "simulation."

The word "automation," in the sense of machines that do the work of humans, was first used in 1948. By the mid-1950s, it was everywhere. (Between 1954 and 1955, its frequency of occurrence in major American newspapers multiplied sixfold.) [18] "Simulation," in the sense of computers using data to create a mathematical model for a real-world behavior—explained to the public as "testing without making actual models"—entered the vernacular at the same time. [19] Computer simulation came out of the war effort and the need to model objects in flight, including airplanes and missiles. After the war, the most important computer simulation project began at MIT in 1950, and led to the development of SAGE (for Semi-Automatic Ground Environment), a network of computers that monitored airspace in order to warn of and intercept Soviet airborne attacks. [20] Meanwhile, the aeronautics industry engaged in what newspapers called "the new field of Flight Simulation," too, because, as one aerospace industry executive explained, "airplanes simply blast through space

faster than the human mind can think." [21]

A calculating machine, given enough information about an aircraft and enough data about factors like weather, can very usefully simulate a flight. Gravity is a law. Also, $F = ma$: the force that acts on a physical object is equal to its mass times its acceleration. But the computer simulation of human behavior or human cognition is much more difficult. Behavior is not a law, even if behavioral scientists wanted to make it one. Laws of human behavior, like Eugene Burdick's $f + h = p$, are something between whimsy and bunk. Fear plus hate does not equal power, not in any mathematical sense, anyway. Nor is cognition a law.

Lacking a theory of cognition, people who worked in the new field of "artificial intelligence" in the 1950s were less interested in getting a machine to think like a brain than in getting a machine to do things a brain can do, like playing chess. The man versus machine chess match has a long history. Beginning in the eighteenth century, a chess-playing automaton known as "the Mechanical Turk"—a wooden figure dressed as a Turkish man—had defeated players across Europe and the United States. Benjamin Franklin had tried to penetrate its secrets. So had Edgar Allan Poe, who in the end figured out that the Turk was really a very tiny man, confined in a box below the chessboard, moving the chess pieces by way of levers. [22] But the mechanical Turk lived on in the memory of mathematicians, as a kind of dare: whoever could first teach a machine to play chess would have broken through a wall. In 1950, the brilliant British mathematician Alan Turing tried to devise a chess-playing program. Alex Bernstein said that Turing's machine "played a very weak game, made stupid blunders and usually had to resign after a few moves." [23] Claude Shannon had tried, too. [24] Where these men had failed, Bernstein, working through the night at IBM, had succeeded. [25] He was one of only a handful of men invited to the Dartmouth conference on artificial intelligence in the summer of 1956.

The people machine that Ed Greenfield came to think his company ought to build for the Democratic Party in time for the election of 1960 got its start on the campaign trail, with Adlai Stevenson. It got its start on Madison Avenue, in boardrooms with tiled harlequin floors. It got its start at the Center for Advanced Study in the Behavioral Sciences, in the hills of Palo Alto. It got its start in the Pentagon, behind guarded doors. It got its start on the ground floor of IBM's headquarters in Manhattan. And it got its start at Dartmouth, during the first ever conference on artificial intelligence. During all these years, on the streets of every Jim Crow state in the American South, the people protested, the people marched, the people shouted for freedom, the people cried for justice.

On one of the last days of 1955, in Montgomery, Alabama, a forty-two-year-old seamstress and longtime civil rights activist named Rosa Parks refused to give up her seat on a bus to a white man. Martin Luther King Jr., the elegant, twenty-six-year-old pastor of Montgomery's Dexter Avenue Baptist Church, spoke at a mass meeting four days later, at a Baptist church on Holt Street. Outside of preaching, he'd never before spoken in public. "There comes a time when people get tired of being trampled over by the iron feet of oppression," he told the crowd. That day, blacks in Montgomery had begun a boycott of the city's buses. [26] Every day of the summer of 1956, while Adlai Stevenson campaigned for reelection and prepared for the Democratic National Convention, every day in the summer of 1956, while the nation's leading computer men gathered at Dartmouth to found the field of artificial intelligence, the people of Montgomery boycotted the city's buses. "If we are arrested every day, if we are exploited every day, if we are trampled over every day," King said, after he himself was arrested, "don't ever let anyone pull you so low as to hate them." [27]

That same summer, Alex Bernstein left his office at IBM in New York and went to

New Hampshire, for the summer seminar on artificial intelligence. He'd just gotten married to June Atlas, a schoolteacher who'd graduated from the University of Michigan. They lived in Brooklyn Heights. [28] It must have been hard to leave her during her summer vacation. But he went anyway. Maybe she came, too. Either way, he must have been nervous. He might have felt a bit over his head. These people were university professors, PhDs. He had a bachelor's degree, from the City University of New York, in medieval literature, a subject he'd also studied at Columbia as a graduate student. But, although they'd invited him, the leaders of the seminar had been dubious about his computer chess program. Claude Shannon had said he was "interested in chess" but wasn't "too enthused over its relevance." Marvin Minsky was "*very* much against chess," on the grounds that it was little more than a stunt. [29]

On August 8, 1956, in a room in Dartmouth's Mathematics Department, Bernstein presented an early version of his chess program. Getting a computer to play chess, he'd write, was a lot different from getting it to do "an ordinary job performed by a computer, say calculating John Doe's pay check." To the question of what to pay John Doe for forty hours at a particular wage, and given a particular tax rate, there is one and only one answer. "But in a chess game there are only two questions to which absolutely definite and unavoidable answers can be given: 'Is this move legal?' and 'Is the game over?' " Bernstein explained. "To all other questions there are various possible answers, though some may be more acceptable than others. The problem is to equip the machine with a system of evaluating the merits of the alternatives." [30] Bernstein had written a program that asked the computer to think through the consequences, over the next two moves, of every possible move.

It took the IBM 704 eight minutes to think through the consequences of any next two moves, a speed nevertheless known as "real time." Bernstein's instructions made the 704 into a pretty good chess player. "Once or twice it played so well that it rattled me," he said. "I'd actually find myself asking it, 'What the devil are you up to now?' " [31] Still, "anyone who can plot a three-move trap can beat it." Bernstein could have instructed the 704 to think through the next three moves, but then it would have taken eight hours, instead of eight minutes, between each move. A better improvement, he explained, would be to allow the 704 to learn from its mistakes, instead of starting each game as if it had never before played chess. [32] That would require teaching a machine how to learn.

The Montgomery bus boycott ended, on December 20, 1956, with the implementation of a Supreme Court ruling that declared the state and municipal laws that had segregated Montgomery's buses to be unconstitutional. The boycott had lasted 381 days. Eisenhower had not acted to stop the violence in the South, the John Birchers, the burnings and the lynchings, the White Citizens' Councils that fought against *Brown v. Board of Education*. Congress began debating a civil rights act, the first since Reconstruction. The bill passed the House in June, with more support from Republicans than from Democrats. And in August, despite the longest filibuster in American history, led by South Carolina Democrat Strom Thurmond, the Democratic Senate managed to pass it, by way of the political wrangling of Texan Lyndon B. Johnson, Senate majority leader. Johnson, a down-home New Dealer who'd come to Congress in 1937, on FDR's coattails, understood that it was time for the Democratic Party to renounce segregation, once and for all, and to take the side of civil rights. [33]

Despite Johnson's turnabout, segregationists dug in their heels. In September 1957, Orval Faubus, the governor of Arkansas and a Democrat, sent some 250 soldiers of the National Guard to Little Rock's Central High School, to bar any black children who tried to get inside the school's doors. Fifteen-year-old Elizabeth Eckford was turned away by soldiers stationed at the school's entrance and into a crowd of white students who cried, "Lynch her! Lynch her!" [34] Days later, Eisenhower signed the 1957 Civil

Rights Act and then, in a nationally televised address, announced that he'd ordered a thousand paratroopers from the 101st Airborne Division to Little Rock. The federal government had at last intervened to guarantee the constitutional rights of schoolchildren.

Meanwhile, the nation was engaged in another battle, a battle of machines. Ten days after the 101st landed in Little Rock, the Soviet Union launched a satellite named *Sputnik* into orbit. The Russians had beaten the Americans to space. With *Sputnik*, the Soviets had far better surveillance capacity than the United States. *Sputnik* also raised the possibility that the Soviets would soon be able to launch nuclear missiles from space. Democrats were determined to put the ensuing panic to political use.

Kennedy vied with Johnson for the leadership of the party, each looking ahead to the election of 1960. Even before *Sputnik*, Kennedy had launched an assault on Eisenhower for failing to devote sufficient money to an American missile program. The United States, he said, had fallen behind the USSR in the arms race and suffered from what Kennedy dubbed a "missile gap" (it has since become clear that no such gap existed). [35] Johnson took much the same tack. "People will soon imagine some Russian sitting in *Sputnik* with a pair of binoculars and reading their mail over their shoulders," a party strategist wrote to Johnson in October. "The issue is one which, if properly handled, would blast the Republicans out of the water, unify the Democratic Party, and elect you as President." In November, Johnson convened hearings into why the United States was so far behind the USSR. He warned the American people, "Soon, the Russians will be dropping bombs on us from space like kids dropping rocks onto cars from freeway overpasses." [36] It was quite clear, to anyone paying attention, that federal government funding for military research would soon be growing at an even faster rate than it had grown since the Cold War began.

After the summer of 1956, Marvin Minsky and John McCarthy moved to MIT, where they founded its Artificial Intelligence Project. The next summer, Claude Shannon went to the Center for Advanced Study in the Behavioral Sciences, where he spent a year with Ithiel de Sola Pool. "We have a first rate group," Pool wrote from Palo Alto. Pool brought to the center another computer man, Manfred Kochen, a staff mathematician from IBM. [37] Kochen and Pool presented their work on the theory of social networks. [38]

But Pool had much else on his mind during his year at the center. "There are some complexities that arise from having two families" was how he put it. [39] His two sons from his first marriage lived in San Francisco with their mother. In November 1957, his new wife, Jean, gave birth; she and the baby nearly died; the doctor's forceps caused terrible hemorrhaging and also blinded the baby, Adam, in one eye. Their lives were saved by transfusions of blood donated by the center fellows and their wives. [40]

Pool and Kochen aimed to discover "through how many introductions would one have to go to get from person A to person B." Their justification was national defense: understanding social networks, Pool wrote in a funding proposal, would be useful for "decision-making, communication, morale, psychological warfare, and intelligence." Still, he had doubts about this line of research. He asked himself, in a note: "Is this a politically and diplomatically wise move?" [41] He seems to have decided that it wasn't. [42] He and Kochen wrote up their findings in an essay that circulated, in manuscript form, for decades, but they didn't publish it. [43] Pool disciplined himself to pursue other lines of research instead. He'd seen that the federal government was changing course, and he changed course, too. He had lots of lines of research, ongoing research. But he decided to concentrate his new efforts on helping Ed Greenfield found the company that would become Simulmatics.

Two weeks after the Soviets launched *Sputnik*, Eisenhower held a meeting in which he asked the nation's leading scientists "to tell him where scientific research belonged

in the structure of the federal government." He resolved to establish two new agencies: the National Aeronautics and Space Administration, or NASA, an independent, civilian agency, and the Advanced Research Projects Agency, or ARPA, as part of the Department of Defense. [44] Together, NASA and ARPA would pump staggering sums of money into the electronics and computer industries, as well as to universities, sums never before seen, in an ever accelerating space-and-arms race. The Soviets had been the first to space. With NASA, the Americans would be the first to the moon. The Soviets had been the first to build a satellite. With ARPA, Americans would build better weapons.

Leaders of the civil rights movement would come to view the space race and the arms race as a flight of a different sort, a flight from justice, a flight from commitment, a white flight. "It will cost thirty-five billion dollars to put two men on the moon," the National Urban League's Whitney Young would complain. "It would take ten billion dollars to lift every poor person in this country above the official poverty standard this year." [45] At the launch of *Apollo 11*, headed for the moon, protesters would carry signs reading, "$12 a day to feed an Astronaut. We Could feed a Starving Child for $8." "We may go on from this day to Mars and to Jupiter and even to the heavens beyond," the head of the Southern Christian Leadership Conference would say, "but as long as racism, poverty, and hunger and war prevail on the earth, we as a civilized nation have failed." [46]

The unease ran deeper, too. The environmentalist Rachel Carson worried that, under the programs called for by Eisenhower, "man seems actually likely to take into his hands—ill-prepared as he is psychologically—many of the functions of 'God.' " [47] In 1958, the philosopher Hannah Arendt wondered at the sanity of a press that described the launching of a satellite as a "step toward escape from men's imprisonment on earth." [48] When, exactly, had the earth become a prison? The stars had been a dream since the dawn of humankind. Were there no dreams left but dreams of conquest, dreams of machines, dreams of artificial intelligences, dreams of simulated worlds? What about dreams of justice, dreams of equality, dreams of freedom?

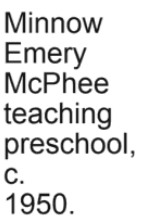
Simulmatics began as a dream, Ed Greenfield's dream, a dream that had to do with his commitment to civil rights, his appetite for power, his envy of academics, and his fascination with the latest, best, fastest machines. A dream of perfect persuasion, of information extraction, of voter prediction, a dream of a world where Adlai Stevenson could win the presidency in the election of 1960 and even win the "negro vote" because he was the best man, even though he wasn't the most electable man. Alex Bernstein hadn't ever really thought about the possibility of trying to simulate an election, at least not until he was hired by Ed Greenfield to help write a program that would allow candidates to plot out their next moves on a computer, without actually making them, as if politics were a game of chess, played on magnetic tape on a spinning reel. But for that program, Ed Greenfield needed one last man: a mathematical genius from Columbia known as Wild Bill.

CHAPTER
5

Project Macroscope

I am skeptical of people whose God is testing.

—Sylvia Plath to her mother, 1960



Minnow Emery McPhee teaching preschool, c. 1950.

Minnow Emery McPhee was quiet and she was loving and she knew how to treat a fever and what finger paint is for. She didn't have a PhD, but, like most people who teach three-year-olds and four-year-olds, she was an expert on human behavior. In 1956, Ed Greenfield had tried to hire her husband, a dazzlingly brilliant mathematical sociologist, to do some work for the Adlai E. Stevenson campaign and McPhee had dipped in a toe or two, but, then, he was an Eisenhower man. He was also something of a crazy man.

Minnow's real name was Miriam. She'd been born in Colorado in 1923, one of five children; everyone called her Minnow, like the little fish. [1] She came from can-do women. Her mother had gone to Bryn Mawr. Her aunt Ruth Washburn had served in the Red Cross during the First World War, after which she'd studied at the London School of Economics before earning an MA from Radcliffe and a PhD from Yale; Ruth Washburn, a professor of child development, was a distinguished leader in the child education movement. She also lived with another woman, an archaeologist. Washburn was Minnow's hero.

In 1942, Minnow Emery, hoping to follow in her aunt's footsteps, enrolled in the Nursery Training School in Boston, a school whose philosophy was the radical proposition that children are people. Right about then, Minnow's brother Charles's best friend asked her to marry him.

Wild Bill McPhee was born in Colorado in 1921, to a family of loggers and cattle drivers. He went to Yale on a scholarship in 1940 but left during his sophomore year to serve in the war, flying a single-engine Piper Cub in the Himalayas. He crashed twice and was the only man in his unit to survive the war, a fact that shook him all of his days. [2]

She said yes to his proposal of marriage. That was probably a mistake. Minnow Emery was famously tender. Bill McPhee famously fierce. But there was no backing out. After they got married, Bill started a public opinion company in Colorado, later called Research Services, Inc. [3]

They had children straightaway. Wendy was born in 1946, and John, called Jock, in

1949. Bill had a terrible temper. He menaced everyone, and then later, when he calmed down, apologized. He drank and he drank and he drank and he smoked and he smoked and he smoked. You couldn't see across the living room. Jock got pneumonia four times, from the smoke. [4]

Research Services, Inc., caught the attention of Paul Lazarsfeld, who in 1951 recruited McPhee to come to the Bureau of Applied Social Research at Columbia. The McPhees packed their bags and drove across the country. Bill had never finished college, but he started graduate study with Lazarsfeld, completing the voting behavior work Lazarsfeld and Berelson had begun in 1948; he's the third author of their landmark 1954 *Voting* study, the book that knocked the socks off Eugene Burdick, when he read it, during the year he spent with Lazarsfeld at the Center for Advanced Study in the Behavioral Sciences. [5] Naturally, when Ed Greenfield started trying to figure out how to program a computer to simulate voting behavior, he asked McPhee if he'd like to be part of a company he was planning to start. He didn't have a name for the company yet. But Greenfield came up with a code name for something McPhee was working on. He called it Project Macroscope.

The marriages of midcentury, white middle-class liberals were a bad bargain. Betty Friedan's *Feminine Mystique* began in 1957 as a set of interviews she conducted with her Smith College classmates, from the class of 1942, for their fifteenth reunion, women Minnow's age. Friedan wrote in the tradition of the social critic Vance Packard who in 1957 had published an indictment of the advertising industry, *The Hidden Persuaders*. Friedan was trying to trace an invisible force, too, "the problem that had no name," the quiet, lonely, miserable boredom of the American housewife. Wasn't there, possibly, something more? Friedan asked, "Who knows of the possibilities of love when men and women share not only children, home, and garden, not only the fulfillment of their biological roles, but the responsibilities and passions of the work that creates the human future and the full human knowledge of who they are?" [6] Minnow McPhee knew just what Betty Friedan was talking about.

But there was a bigger problem, too. And it didn't have a name, either. It had to do with knowledge itself. In the 1950s, when women's work was not work, women's knowledge was not knowledge. This had a disastrous effect on the two new fields of knowledge that this era produced: behavioral science and artificial intelligence.

When Bill was in graduate school, Minnow took care of Wendy and Jock and she also got a job at a nursery school. Like her aunt, she made a study of human behavior, not the behavior of voters but the behavior of babies and toddlers. [7] Computers learning language and following rules for behavior are a lot like infants acquiring intelligence and figuring out how to be a person, a similarity that appears to have been entirely lost on the men who studied behavioral science and artificial intelligence in the 1950s. Minnow probably thought about that, but she'd never have had the nerve to point it out to Bill or any of the men he worked with. She found them impossibly intimidating, "all Columbia people with P.H.D.'s," people she had to persuade to "chat on my level of information." [8] She was always doing that, undermining herself. And when she didn't, Bill did it for her. It does not seem to have occurred to him that she knew things about how people behaved. Instead, he toiled on his computer program, looking for wisdom in IF and THEN and ELSE.

Minnow McPhee was a prolific letter writer. She also wrote children's books, mainly books of poems composed during stolen moments at playgrounds. She'd carry her bundle of pages to editors, thrilled and terrified. "I go to the publishers next Thursday with my poems!" she wrote her mother. "Nothing will come of it—but it amuses me to think I'll even trespass the doorstep of a publisher." [9] She sent her poems to Simon & Schuster and then to Viking and Doubleday. [10] "All I want is to break the field so that I

can have someway to rake in a penny now and then when we're low," she told her aunt. [11]

Minnow McPhee was no Sylvia Plath. "Look at me today / My dress is yellow / sticks out just right / My slip is lace / my hat is white /Daddy! Daddy! Boo! Look I'm new." [12] This poem of Minnow McPhee's, from a book of children's poetry she titled *Watch Me*, is a far cry from Plath's "Daddy": "Daddy, daddy, you bastard, I'm through." [13] Still, Minnow McPhee and Sylvia Plath lived in much the same stultifying world of intellectuals and faculty wives, of darning and sewing and diapering and writing and demurring, demurring, demurring, demurring.

McPhee's letters to her mother are full of much the same details as Plath's letters to her own mother, Plath with her yards of white-and-blue flowered fabric and her sewing patterns, stitching little dresses for her daughter, all the while worrying about the "occasional black Moods" of her husband, the English poet Ted Hughes. [14] "The Girl Scout meeting was boring as the devil" was the sort of thing Minnow was forever writing. [15] And McPhee's letters, like Plath's, are haunted by the constant threat of violence and humiliation. Once, McPhee came home wearing a new pair of high-heeled shoes, French, with an ankle strap.

"Those are the kind of shoes other ladies wear but not you!" said six-year-old Wendy, delighted.

"Yes," said Bill. "Whores." [16]

The McPhees' life revolved around the place Minnow only ever called "the Bureau": the Bureau of Applied Social Research, a grittier, East Coast version of the Center for Advanced Study in the Behavioral Sciences. She found it dreadful. "It's hard to find people we both enjoy," she wrote home. "Most of the Columbia men have rather miserable wives." [17] They went to bureau bowling games and bureau dinner parties and bureau baseball games and bureau cocktail parties. "I must say the Bureau picnics leave me cold," wrote Minnow. [18] The women looked dead-eyed.

"Last night we went to the Lazarsfelds after dinner," Minnow reported in 1951. "Half the time I need a dictionary to know what's going on but it's all very restful and uplifting to hear people talk about concepts, logic, psychology, sociology, politics, and what have you." Minnow liked Lazarsfeld, and about his wife—his third—who was herself trying to finish a PhD, she added, "She grows on you." [19]

There were two other couples Minnow liked: her brother Charles (Chuck) Emery, who was pursuing a PhD in philosophy at Columbia, and his wife, Jane (Janey) Aycrigg, who worked at the bureau, and Indiana-born James Coleman, a graduate student in sociology, and his wife, Lucille (Lu) Ritchey, who also worked as a secretary at the bureau. Chuck suffered from depression and was haunted by what he had seen in the Second World War. Jane wanted desperately to have a baby but could not. Lu Ritchey had met Jim Coleman while they were undergraduates together at Purdue. Like so many women, she'd dropped out of school when she got married; they'd moved to Rochester, where Coleman worked for the Eastman Kodak Company, and then to New York, where they lived in a walk-up apartment in Morningside Heights while Lu took care of Thomas, born in 1955, and John, born in 1957; they had one more son, in 1963. [20] Somewhere along about 1954, Jim Coleman and Jane Emery began an affair. [21] The bureau was that kind of place: swinging social scientists.

"Musical beds is the faculty sport around here," says George, the history professor, to the biology professor in Edward Albee's play *Who's Afraid of Virginia Woolf?* [22] Some sport. Minnow was bored, really and truly and painfully bored. "I don't know when I've wanted a baby so much," she wrote in 1953. [23] They moved to the Westchester town of Hastings-on-Hudson, where things looked up, because at least she got to meet

people who weren't part of the bureau. "This neighborhood is a delight to live in," she wrote. "Predominantly jewish with a smattering of negroes and gentiles mixed in—I've never met such friendly people." [24] In Hastings-on-Hudson, the McPhees were also neighbors with Kenneth and Mamie Clark, researchers who provided the pivotal evidence in *Brown v. Board of Education*. "He is a negro and has just been down studying the segregation problem in the South," she told her mother later, reporting that Clark had "stayed with Reverend King who's [*sic*] home has been bombed by the White Citizens Committee." [25]

Minnow McPhee tried to put the pieces of her world together. The bureau. *Brown v. Board*. The quantitative analysis of human behavior for purposes of prediction. So much political tragedy nationwide; so much pettiness at bureau picnics. The gossip, the affairs, the intellectual posing. She was tired. She felt helpless.

She had little luck with her poetry but better luck with the pregnancy. In April 1954, she gave birth to a girl named Sarah. [26] "The babby as black hair," Wendy reported to her grandmother, spelling as best as she knew how. [27] That summer, the McPhees, the Emerys, and the Colemans went to Hanover, New Hampshire, for bureau meetings in Dartmouth. Minnow sat in on one of their seminars. "A man spoke on philosophy of science and I didn't understand a word of it!" [28]

Was this her fault? Or his?

Ed Greenfield started wooing Bill McPhee in 1956. IBM was wooing him, too. Given the ingenuity and originality of his work, a lot of people were wooing Bill McPhee. The more people wooed him, the worse he treated his wife. "Please try to realize it's possible to be a great man without being a bastard," Jane Emery warned him. [29] He found this advice impossible to take. Everything in the culture told him that great men had to be bastards.

The bad bargains of the middle-class marriages of the 1950s were bargains that turned out to be hard to keep. Minnow devotedly cared for the children and worked at the nursery school and also did all the housework. "It is almost bed time and I've just finished the dishes," she wrote her mother. [30] She was very often sick, suffering from exhaustion and also, possibly, from attacks from her husband, who at times weighed 250 pounds. [31] Bill would then insist that Wendy take over the housework. Once, when Bill ordered Wendy to clean up the kitchen, Minnow pointed out that Wendy, then nine, needed to go to bed. Bill yelled, "Minnow, either you run this house or I do." [32]

He did.

After they moved to Hastings-on-Hudson, it got harder for Minnow to leave the house. She couldn't drive ("I find New York traffic terrifying and wilt at the thought of learning to drive"), which led to still more battles. [33] "Oh how glad I'll be when Bill is through with his P.H.D. and I can cease to play this 'Momma-Poppa' game,' " she wrote her mother. [34] But him finishing his PhD would only make things worse.

McPhee said no to Greenfield in 1956 because he didn't want to work for Adlai Stevenson. And he said no to IBM because he didn't like the idea of working for a giant corporation. He stayed at the bureau and won grants from the Ford Foundation and the National Science Foundation. It was by now as easy to get money to do quantitative social science as it was hard to get money for nonquantitative scholarship. "The N.S.F. has turned down my research proposal," the distinguished sociologist C. Wright Mills complained to Lazarsfeld. "So has the Ford Foundation, the Health Department, and Columbia's own Council of Social Research." Mills asked Lazarsfeld if he knew where to find "two or three thousand dollars to hire a part-time secretary." [35] But for the kind

of predictive analytic work McPhee wanted to do, you could get funding almost anywhere.

In the summer of 1956, McPhee and Coleman went to Dartmouth, for more seminars with Lazarsfeld. They met there at the same time as the artificial intelligence conference, where Alex Bernstein presented his chess program. There's no record that McPhee attended the meetings of Dartmouth's artificial intelligence seminar, but he was in Hanover that summer, and it's hard to imagine he didn't drop in. Minnow, eager to escape her cage, took the occasion of his absence to learn how to drive. "Daddy will be in Hanover and won't know his precious car is being misused," she wrote Janey. [36]

When Bill got back to New York, he threw himself into his dissertation. The deeper he got, decoding the mysteries of human behavior, the more viciously he treated his wife. He recruited her to help out—she coded his data—but the gulf between them widened. (She hated coding. "Never again," she wrote her mother.) [37] "He doesn't know how I'm feeling," Minnow had earlier written to Janey, despairing, "and every time I start to tell him he starts on this long harangue." It was impossible to talk to him. "If only I could talk to him without him blowing a fuse." [38]

He was drinking more, hostile, screaming, nasty, brutal, treating Minnow "as if a good beating or bawling out were the best approach." Minnow's brother Chuck Emery warned him to stop. "You as a scientist of the first rank can be so blind in your most intimate relationships," Emery wrote, and "this blindness is, as I've said before, destroying your wife." [39]

"I really don't understand why she doesn't shoot him," Janey wrote. [40] It was around this time that McPhee told Greenfield about one of his new computer simulation ideas: he wanted "to create a computer simulation of the U.S. television-viewing public." [41] It could be used to help television stations and networks sell advertising. Or it could be used to help out a political campaign. Eisenhower wouldn't be running again in 1960, and McPhee had no problem working against Ike's successor, Richard Nixon.

Greenfield asked McPhee to tell Ithiel de Sola Pool about this new project. Then the three men got together and talked it over. Pool and Greenfield urged McPhee to pursue a slightly different idea: a simulation of the U.S. electorate. [42] Greenfield must have done more than urged. He would have promised McPhee the sky, the moon, and the stars. He would have wined him and dined him. He would have treated him like a messiah, about to deliver American politics from the age of ignorance to the age of knowledge. He would have told him he needed this political simulator now, yesterday, two presidential elections ago, but, damn it, he needed it now. By God, it could save the country, and it could make them all rich!

By early 1958, with *Sputnik II* now orbiting the earth, McPhee was working obsessively on this new project. He got even crazier, descending into a mania. Janey reported that Bill "is completely involved in his model of voting and yet so much in need of assurances he's worse than he ever was about monopolizing the conversation and boasting about his contributions to science." [43] He refused even to come to the dinner table. "Bill types all day long and even right through dinner which is the biggest lot of nonsense," Janey wrote. She'd about had it with her brother-in-law.

On Saturday, April 12, 1958, Janey took Wendy, Jock, and Sarah to the zoo so Minnow could rest. That night, Janey and Minnow went to see *Peyton Place*, an adaptation of Grace Metalious's 1956 blockbuster novel about the sexual repression and thwarted ambitions of women living in a small New England town. "Indian summer is like a woman," the novel famously begins. "Ripe, hotly passionate, but fickle, she comes and goes as she pleases so that one is never sure whether she will come at all, nor for how long she will stay." The plot involves adultery, rape, incest, and abortion. "Men were

not necessary, for they were unreliable at best, and nothing but creators of trouble" is the view of one of the main characters. [44] The film starred Lana Turner. In its pivotal scene, a girl who has been raped by her stepfather bludgeons him to death. Earlier that month, in real life, Turner's daughter had killed Turner's abusive lover, Johnny Stompanato. Minnow told Janey that "there was something wrong with our society that so many men were crapped up." [45]

They really were crapped up: haunted by the war, deluded by Freud, trapped in terrible straits, raised to be strong but not brutal, astute but imperturbable, lines so easy to cross. "Bill ought to be shot," Janey wrote to Chuck. [46] The next week, when Janey told Minnow about a story she'd read in the newspaper, about a woman who'd shot her husband three times, Minnow said—and Janey described Minnow as uttering these words "in a voice mixed with weariness and hope"—"Why, I never thought of that." [47]

The men often left their women and children to confer with other men about how to train machines to behave like humans, by which they meant: men. In the summer of 1958, Bill McPhee attended a Ford Foundation–funded conference on computer simulation held in Santa Monica and organized jointly by the Social Science Research Council and RAND. [48] That RAND summer of 1958 is legendary in the history of computers, almost as legendary as the artificial intelligence summer at Dartmouth in 1956. People who had never programmed a computer before learned how, mainly on RAND's computer, which was called JOHNNIAC. Attendance was by application. Most of the twenty participants stayed for three or four weeks. [49] Jim Coleman was there, too. [50] Minnow and Lu and the children stayed home, in Hastings-on-Hudson.

An elated Bill McPhee wrote a letter to nine-year-old Jock about the amazing machines. "Jock, the reason I'm having so much fun here is that the computers (Univac, Manniac + "Johnniac"—I work on Johnniac) are just like big electric trains for grown-up boys." [51] To Minnow, he started talking about all the money he expected to make off his new project, his voting prediction machine. "Could he really make all the money he claims he could if he wanted to—or not?" Minnow's sister wondered. [52]

Sometime along about this time, apparently not long after Bill got back from Santa Monica, and during the months when he was refining the program upon which the Simulmatics Corporation would be founded, Minnow had him committed to an insane asylum. He was lost. He could not stop.

Bellevue Hospital, which started out as an almshouse, had a long-standing relationship with Columbia. It made sense that Minnow sent him there, and not someplace else. But its psychiatric ward was dire, bleak, and brutal, its inmates forlorn and broken and abandoned. It was the age of electric shock and lobotomies. Ken Kesey wrote *One Flew over the Cuckoo's Nest* in 1959, a story set in a different hospital but bearing witness to the same horrors. Minnow hadn't shot her husband. But, in commiting him to Bellevue, she hadn't done nothing, either.

Of the Simulmatics Corporation's many birthplaces—Madison Avenue, Palo Alto, the Pentagon, IBM—the bleakest was the psychiatric ward of Bellevue Hospital, with its white walls and linoleum floors and locked doors, smelling of antiseptic and urine, amid the mutterings of misery and screams of pain and cries of anguish and peals of deranged laughter and the quieter sounds of weeping. McPhee, using a typewriter, wrote to Coleman and told him Minnow had had him committed. "I've got a bunch of lawyers fighting it," he assured him. The lawyers sound like a delusion.

It was from inside Bellevue that McPhee toiled over his new theory, typing it on

eight pages of yellow paper. He illustrated it with sketches. It described his plan to devise a voter prediction machine, as well as the theory behind it. He planned, he said, to create "literally a set of rules of thinking" to "reproduce or better simulate the thinking behavior of voters." In another letter, he told Coleman that "the yellow-sheet letter" had troubled his psychiatrists: "they seemed to doubt if it was a real letter to any real person." [53] But it was to a real person. And it was a real idea. Conceived in a mental hospital, it became the core intellectual property of a new company.

McPhee got out of Bellevue. Minnow took him back. He must have suffered terribly. Maybe he got help, one of the newer drugs to treat manic depression, drugs that had wretched, sedating, numbing side effects. If he'd taken them, he'd likely have found it difficult to work, the race car of his mind dragging.

He finished his dissertation. He presented his campaign simulator to his advisers at Columbia, a program designed to make possible "A Fully Observable Electorate." [54] (It is not, at an elementary level, any different from what Cambridge Analytica sold as its services to the Trump and the Brexit "Leave" campaigns in 2015 and 2016.) The voting studies made it possible to know about voters as "discrete units at the 'microscopic' level," but this system would provide a "macroscopic picture of how, when it is all put together, the aggregate system works." [55] The earlier voting studies were mere child's play compared to what McPhee had invented: a voting prediction machine.

Greenfield wanted it, wanted it, wanted it. He'd been wanting it since 1952. Minnow overheard Bill talking to Ed: "mumbling over the phone on a big business deal." [56] It would make both their fortunes, he'd have promised. Greenfield took McPhee's paper, "A Model for Analyzing Macro-Dynamics in Voting Systems," and shaped it into a proposal, part intellectual justification, part business plan, for what Greenfield called "Project Macroscope." He imagined spinning off his Social Science Division into a new company, to run this project. Its objective was to direct Democratic strategy for the 1960 election.

Greenfield marked the Project Macroscope proposal confidential and had copies made. He circulated it very selectively. It was a trade secret. He also knew it would be controversial.

With Project Macroscope, Greenfield proposed to build an "information bank" out of election returns and public opinion surveys. They'd sort voters into voter types, down to a microscopic level, classifying, for instance, "working-class Negroes in northern cities." For each voter type, information from the election returns and the public opinion surveys would be sorted by issue. "There is nothing mysterious about this on the surface, the input to the machine being the information about real individuals obtained in surveys," Greenfield wrote. "However, once this information is inside the high speed storage facilities of the machine, it is a different world." The machine, crammed with microscopic data about voters and issues, would act as a "macroscope": you could ask it any question about the kind of move a candidate might make, and it would be able to tell you how voters, down to the tiniest segment of the electorate, would respond. [57] It would be like sitting on Mount Olympus, with the gods, and looking down on the mortals.

Alex Bernstein's father-in-law was always asking him, whenever they talked about politics, "Yes, yes, but what does it mean for the Jews?" Bernstein, trying to explain to his father what Project Macroscope would do, said, "It will tell you what it means for the Jews!" [58] Or, and more to the point, it could advise Democrats trying to figure out what to say about civil rights.

"Suppose that during the campaign, the question arises as to the possible consequences of making a strong civil rights speech in the deep South," Greenfield wrote. "We will, from our model, be able to predict what such a speech would mean to each of 1,000 sub-groups of the population, and how many individuals belonging to

each sub-group there are in each state. We would therefore be able to predict the approximate small fraction of a percent difference that such a speech would make in each state and consequently to pinpoint the state where it could affect the electoral vote. We might thus advise, for example, that such a speech would lose 2 to 3% of the vote in several Southern states that we would carry anyhow, but might gain ½ of a percent of the vote in some crucial Northern state." [59]

Somewhere along the road, Ed Greenfield had lost hold of his ideals. Maybe he'd just gotten tired of Democrats losing elections. Maybe all that mattered anymore was winning. Or maybe he couldn't figure out any other way to push the Democratic Party to take a bolder stand on civil rights, something he'd been wanting it to do for years. Should a politician make a strong speech about civil rights in the South because it was the right thing to do? No. A politician should make a strong speech about civil rights in the South when and where the Macroscope advised it, based on the analytics.

Project Macroscope aimed to solve the problem of Adlai E. Stevenson. "The machine is no substitute for human beings," Greenfield wrote. "Rather it is designed to give human politicians the data so that for the first time they can make really intelligent decisions about how to make the democratic process work." [60] He was not unaware of how this whole thing looked. "I gather that questions have been raised about the political morality of using advanced computer programs in political research," he admitted. "There is also the notion that human beings are somehow going to be brainwashed." This was hogwash. "All that machines do is provide more data to more people more quickly than otherwise." Also: "It is not proposed to do anything to the voters. The brainwashing analogy is therefore completely irrelevant." And: "Machines can do nothing but speed up communication," which means that "they restore the possibility of ready discourse about important matters in large societies." [61]

Greenfield, in New York, sent his confidential proposal for Project Macroscope to Newton Minow, in Chicago. [62] Minow, thirty-three, and the father of three girls, was one of Adlai Stevenson's closest advisers, a partner at Stevenson's law firm; he'd also served as Stevenson's counsel during his two presidential campaigns. Minow was a formidable and principled man. He became best known for serving as chairman of the Federal Communications Commission, under John F. Kennedy. In 1961, as FCC chairman, he would famously declare television a "vast wasteland," urge the development of educational television for children, and get Congress to pass legislation that established the public broadcasting systems that would become PBS and NPR. He'd known Ed Greenfield since Greenfield had worked on the Stevenson campaign in 1956.

Newton Minow read Greenfield's proposal and his jaw dropped. He was so alarmed that he made the rather fateful decision to send the proposal on to the Harvard historian and Stevenson speechwriter Arthur Schlesinger Jr., at his office in Cambridge, deep inside the stacks of Widener Library.

Schlesinger, forty-one, and seldom seen without his signature bow tie, was one of the most respected American historians in the United States. He wrote mostly about the presidency. His 1945 book, *The Age of Jackson*, had won a Pulitzer Prize. He'd win a second Pulitzer for a biography of John F. Kennedy. He was fascinated by political power. Like anyone who is fascinated by power, he was always in danger of falling into its thrall.

In 1952, Schlesinger, like Greenfield, had worked for Averell Harriman's campaign, but once Stevenson won the Democratic nomination, he'd given the Illinois governor his support. Schlesinger was also capable of great deviousness and betrayal; in 1956, he'd passed the Stevenson campaign inside information about how to defeat Harriman. [63] He'd become a full professor at Harvard in 1954, even while spending a great deal of his time writing speeches for Stevenson. He was close to the Kennedys, especially Jack; he'd known him since they were undergraduates together. And it

happened that in Cambridge, on quiet, tree-lined Irving Street, he lived two doors down from Ithiel de Sola Pool. The Schlesingers lived at 109 Irving Street, the Pools at 105.

Schlesinger read Minow's letter behind the locked door of his study in the library. "Do you remember Ed Greenfield?" Minow asked. "He's the fellow who in '56 organized our so-called depth studies, which never really indicated the depth of our despair." Greenfield had given Minow permission to send the confidential proposal to Schlesinger. Minow wanted Schlesinger's advice: "Without prejudicing your judgment, my own opinion is that such a thing (a) cannot work, (b) is immoral, (c) should be declared illegal. Please advise." [64]

Schlesinger looked over the proposal. He might well have already known about Project Macroscope, from Pool. He handled Minow's request for advice delicately. "I have pretty much your feelings about Project Macroscope," he began. "I shudder at the implication for public leadership of the notion . . . that a man shouldn't say something until it is cleared with the machine." But he wasn't willing to try to thwart it: "I do believe in science and don't like to be a party to choking off new ideas." [65]

Newton Minow had asked for help. He thought, as a citizen and as a lawyer, that what Ed Greenfield proposed to do was immoral and ought to be declared illegal. Arthur Schlesinger told him to do nothing.

Project Macroscope went ahead. It's going on still.

PART
TWO

The People Machine

> "You know, Prestwick, when I look into the future I am certain we are entering upon an era in which religion and mass communications will put all distrust and antagonism behind them, and learn to co-operate to their mutual advantage."

"That's certainly a thought, R.V."

—*Michael Frayn, The Tin Men, 1965*

CHAPTER
6

The IBM President

When a machine takes the job of ten men, where do those ten men go?

—John F. Kennedy, 1960

John
F.
Kennedy
campaign
leaflet,
1960.

The Simulmatics Corporation opened for business on February 18, 1959, with offices at 501 Madison Avenue, on the corner of Fifty-Second Street, in a pale brick, thirty-story building five skip-and-a-hop blocks south of IBM's world headquarters, at 590 Madison Avenue, where Alex Bernstein had played chess with a 704 in the tiny hours of the morning, bishops taking queens, rooks taking pawns, until the final, clattering printout: ***THANK YOU FOR AN INTERESTING GAME***

Simulmatics was a decidedly smaller operation than IBM, occupying 1,625 square feet of office space (less than a third the size of IBM's lobby alone), in rooms on an upper floor sublet from another tenant for $375 a month, and no equipment more sophisticated than a typewriter. "The Company does not own, and does not intend to acquire, any computer facilities," Ed Greenfield explained. Instead, at least while it was starting up, it would rent time on the machines at IBM, Columbia, and MIT. Its offices were as modest as its ambition was grand: "The Company proposes to engage principally in estimating probable human behavior by the use of computer technology." [1] The company proposes to predict the future.

"This is going to be done," Greenfield promised Newton Minow in March. Minow had asked Arthur Schlesinger for help in trying to stop it; Schlesinger had urged Minow to back off. But, in fact, this thing had already been done: a month before Greenfield wrote to Minow, he'd filed papers of incorporation with the state of New York. [2]

The day a door opened with the simulmatics corp. etched into its glass, there might have been some small ceremony. But if there was, Bill McPhee missed it. He'd been in Chicago, scheduled to fly back to New York on American Airlines Flight 320, but he'd canceled his reservation at the last minute and extended his stay in Chicago. Flight 320 crashed into the East River while trying to land at LaGuardia through ice and fog; all but eight passengers were killed. McPhee kept his unused ticket all his life, a good luck charm. [3]

If there was an opening day ceremony to christen the new offices of the Simulmatics Corporation, one more man was missing, too. Ed Greenfield had asked Eugene Burdick to join the company. [4] Burdick had just published a new novel, *The Ugly American*, set in a barely disguised Vietnam. It had gone through twenty printings in its first five

months; it would spend a staggering seventy-six weeks on top of the bestseller list. [5] Eisenhower read it over a weekend at Camp David. [6] John F. Kennedy provided a copy to every member of the U.S. Senate. (Though when Kennedy met Burdick, he flattered him by mentioning his admiration not for *The Ugly American* but for his 1956 novel, *The Ninth Wave*.) [7] Burdick sold the film rights—the movie would star Marlon Brando—and was by now better known in Hollywood than at the annual meetings of the American Political Science Association. [8] He was still teaching political theory at Berkeley—and the girls hadn't stopped lining up outside his office door—but he'd also started offering a course called The Political Novel, teaching not Aristotle and Hume but *The Manchurian Candidate*, *The Secret Agent*, *All the King's Men*, and *The Naked and the Dead*. [9] The political thriller.

When Greenfield called Burdick to ask him to join Simulmatics' research board, headed by Ithiel de Sola Pool, Burdick declined. He said he wasn't sufficiently qualified in mathematics. He was busy. He was a literary celebrity. Also, he thought Simulmatics sounded dangerous. He soon became its fiercest critic. "This may or may not result in evil," Burdick would warn. "Certainly it will result in the end of politics as Americans have known it." [10]

Politics as Americans had known it would end in the 1960s with or without Simulmatics. The liberal consensus so widely if wrongly perceived in the 1950s would fall apart, and fall to pieces. The long march of the civil rights movement would lead to the Civil Rights Act of 1964 and the Voting Rights Act of 1965. And yet injustice would endure, and protesters would riot on the streets, and police officers would attack them, with dogs and tear gas and bats and hoses. The United States would lose its way in the jungles of Vietnam, a war whose toll would include Lyndon B. Johnson's presidency and the Great Society itself. Universities would erupt in protest, students staging sit-ins and occupying buildings and, sometimes, threatening violence. A New Left would rise, and a New Right, both dedicated to a politics of confrontation and humiliation and evisceration. By 1967, Arthur Schlesinger would conclude that each of Johnson's ambitions and ideals, "the fight for equal opportunity for the Negro, the war against poverty, the struggle to save the cities, the improvement of our schools," had been "starved for the sake of Vietnam." [11] On the darkest of days, the political leaders of an entire generation would be assassinated, one after another: John F. Kennedy, Malcolm X, Martin Luther King Jr., and, in the last blow of a devastating decade, Robert F. Kennedy. And the decade would end, on an early May day in 1970, with soldiers of the Ohio National Guard—the government itself—firing on unarmed students at Kent State University.

The Simulmatics Corporation, founded in 1959 and bankrupted in 1970, played a role in most of these events, and its history offers a vantage on all of them, a shadow history of the 1960s. It's as if Simulmatics had left behind not a narrative of the decade but a box of punch cards waiting to be decoded, a cryptic chronicle of the unmaking of American politics.

It began with the effort to draft Adlai Stevenson to run for president, yet one more time. He'd lost twice before. Why would he agree to run again? To save the country from Richard Nixon. Eisenhower had served his two terms, and in 1960, Nixon would be topping the GOP ticket. Stevenson could not abide the idea of a Nixon presidency. "It seems to me unthinkable that a man with his background of slander, abuse, innuendo, expediency and resort to all the most devious political devices should ever occupy an office which we have tried for generations to exalt in the esteem of young people and the world," Stevenson wrote. [12]

Still, Stevenson had not announced his own intention to run. Instead, he weighed

the decision, month after month after month. On one hand, a lot of people who'd voted for Eisenhower in 1956, including Bill McPhee, shared Stevenson's opinion of Nixon, had no intention of voting for him, and favored Stevenson over every other likely Democratic contender, including John F. Kennedy. [13] On the other hand, Stevenson's prospects in 1960 looked in many ways much grimmer than they had in 1956. "Not even his most adhesive admirers claim that Adlai Stevenson is a great candidate," the acerbic columnist Mary McGrory wrote in 1959. "They insist, nonetheless, that he would make a great President." [14] His liabilities hadn't gone away: the divorce, the bad jokes. Plenty of people who admired Stevenson wished he'd sat out the unwinnable election of 1956 and let Estes Kefauver lose to Eisenhower instead. They asked themselves: What if, what if, what if?

Ed Greenfield was selling something more than second guesses. He was selling a people machine, run by a team of scientists, the What-If Men, custom-built for the Stevenson campaign. In the spring of 1959, about the time he wrote to Newton Minow, Greenfield also wrote to Thomas K. Finletter, Stevenson's close friend and campaign aide, the man Greenfield had reported to when working for the Stevenson campaign in 1956. Since then, Finletter had started up a brain trust called the Democratic Advisory Council, somewhat in tension with the Democratic National Committee. [15] Greenfield told Finletter about Project Macroscope, informing him that it had now become possible "to develop a computer program which will predict the result of alternative campaign strategies." [16]

Finletter arranged for Greenfield to present his proposal to a group of wealthy donors that had established, for the DAC, a Committee for Special Projects. [17] The committee was led by Agnes E. Meyer, a philanthropist whose husband, Eugene Meyer, had bought the *Washington Post* in 1933. (In 1946, Eugene Meyer had stepped down as publisher of the *Post*, naming his son-in-law Philip Graham as his successor. In 1963, after Graham's suicide, the Meyers' daughter Katharine Graham would take over.) The committee had retained William Attwood, a former Stevenson speechwriter and editor at *Look* magazine, to conduct campaign research for Stevenson. [18] Greenfield asked the committee to hire Simulmatics, too, and to the same end.

Greenfield got a nod from the committee, and in May 1959, Greenfield, McPhee, and Pool went to Washington and presented their proposal to members of the Democratic Advisory Council and the Democratic National Committee. [19] The DAC and the DNC agreed to a four-month trial and the New York committee commissioned Simulmatics to conduct a single study, for $35,000. [20] In November, they met again, this time with a team of evaluators that included Harold Lasswell and Paul Lazarsfeld, resulting in a grant of another $30,000. [21] (The combined $65,000 is more than half a million dollars in 2020 money.) Pool called it "a kind of Manhattan Project gamble in politics." [22] It was as if they were building a bomb.

At the time, the Simulmatics' Manhattan Project was the largest political science research project in American history. Pool and McPhee began by collecting punch cards from one hundred thousand surveys conducted by Gallup and Roper in 1952, 1954, 1956, and 1958. They sorted the voters queried in those surveys into 480 voter types. "An example of what we mean by a type of voter is: Midwestern, rural, Protestant, lower income, female." Then they sorted the questions asked on the surveys into about fifty "issue attitudes." Finally, they recoded all of this data onto new punch cards and built a data set that included election returns from each of those years.

Only a tiny slice of Simulmatics' bank of voters were black: 6,564 in all, of whom 4,050 were in the North. But the company's ability to study African Americans as a voting type—and their *interest* in African Americans as voters—represented a major