

# Bombs and Books

## An Introduction

Boarding his plane in Germany in the spring of 1953, James Bryant Conant knew there might be trouble when he arrived in Washington. An aide handed him a note. He opened it to see the words “. . . Senator McCarthy. . . .”

Ever since his speech at the Women’s Republican Club of Wheeling, West Virginia, in February 1950, the junior senator from Wisconsin was on a rampage. Other politicians had discovered that a strong, militant stance against communism pleased their constituents and supported their careers. By the time McCarthy made headlines, Hollywood screenwriters had been scrutinized by Congress for years. But McCarthy outdid his anticommunist colleagues by announcing that communism had infiltrated Washington itself. From then on, he held hearings, conducted investigations, intimidated enemies and colleagues alike, and ruined careers by calling citizens to Washington to ask, often under the heat of klieg lights, “Are you now, or have you ever been, a member of the Communist Party?” Being called before McCarthy’s committee, even mentioned by him or his staffers in the wrong way, could mean public and professional disgrace. Nobody liked suspected communists, and McCarthy made a career of exposing them.

Conant himself had nothing to fear. His ideological credentials were sterling. He was a famous educator, the president of Harvard University, and a chemist who helped oversee the Manhattan Project that introduced the atomic bomb and the modern “atomic age” of scientific progress. The problem that lay ahead of Conant was not *his* politics, but those of his colleagues, his friends, and those who worked for him. For years his chief physicist in the Manhattan project, J. Robert Oppenheimer, fended off rumors and suspicions that would not go away despite firm support from Conant and others who testified to Oppenheimer’s patriotism. As president of Harvard, Conant knew how much trouble anticommunists could

make by demanding the scalps of “suspicious” or “pink” members of his faculty.

McCarthy had been on Conant’s trail for years. In 1949, when three leftist professors at the University of Washington lost their jobs, universities became fair game for anticommunist politicians. In his Wheeling speech, McCarthy had put the nation’s elite, East Coast universities on notice. He named the Harvard astronomer and proud leftist Harlow Shapley (albeit as “Howard Shipley”). McCarthy’s ally and admirer William F. Buckley, then an undergraduate editor of the *Yale Daily News*, had already taken the Harvard-Yale rivalry into anticommunist politics by waging war against the *Harvard Crimson*, whose editors had exposed FBI agents and their friendly, talkative informants on Yale’s campus. In his book *God and Man at Yale*, Buckley explained that nearly all the Ivies were careening toward atheism and socialism.<sup>1</sup>

Just months before, in early 1953, Conant’s Harvard—the “Kremlin on the Charles,” as its conservative detractors put it—faced investigation by McCarthy and other anticommunists in Washington. As faculty, trustees, and students buzzed about the impending inquisition and how Conant would handle it, he stunned everyone by resigning from Harvard. Dwight Eisenhower, Conant’s counterpart at Columbia University, had been elected President of the United States and asked Conant to become the new High Commissioner of Germany.<sup>2</sup>

By accepting Eisenhower’s offer, Conant escaped McCarthy, who would soon denounce Harvard as a “smelly mess” of subversion and communist indoctrination.<sup>3</sup> That problem now belonged to Nathan Pusey, Conant’s successor. But Conant remained in McCarthy’s sights and was now even more vulnerable. No longer ensconced in a private university, he was responsible to the State Department and the American public that McCarthy represented—a public that was especially nervous and fearful. For despite the nation’s victories in war, Americans felt increasingly surrounded by international communism—in the U.S.S.R., China, North Korea and, of course, East Germany.

As the new high commissioner, Conant would be in charge of keeping the invader at bay. Still, McCarthy smelled blood. Yes, Conant was a national hero, and he was on record opposing communist faculty in colleges and universities. But Conant belonged to the elite, East Coast establishment that McCarthy believed had already betrayed the nation to the ideological enemy. Its members included Alger Hiss, whose trials convinced

many Americans—including Conant—that the anticommunist paranoia in Washington might be justified after all. And it included Hiss’s friend and colleague Dean Acheson, the secretary of state who had publicly defended Hiss. McCarthy loathed Acheson and called him a “pompous diplomat in striped pants, with a phony British accent.”<sup>4</sup> He had attended Groton, Yale, and the Law School at Harvard. *Conant’s* Harvard.

When Congress interviewed Conant to approve his new diplomatic post, McCarthy suppressed his misgivings and kept quiet. That was a personal favor to Eisenhower who asked McCarthy to hold his fire. But now that Conant was on the job in Germany, McCarthy considered him fair game, and the note in Conant’s hands was proof. Arriving through CIA communications, and not through the State Department channels that McCarthy and his aides monitored, it tipped him off that two McCarthy staffers, Roy Cohn and G. David Schine, were heading to Europe to investigate a new and disturbing report: United States Information Service libraries, the State Department’s outposts of information and culture across the war-torn continent, were circulating pro-communist materials.<sup>5</sup> Having already ushered communist ideology into Washington, McCarthy believed, the State Department was now allowing it to spread throughout Europe in the form of broadcasts, films, and books.

### Of Treason and Trousers

When his plane took off, Conant again escaped McCarthy’s grasp. He would not deal with Cohn and Schine because he was on his way to Washington to meet German chancellor Conrad Adenauer (who would arrive by sea) and escort him on a short tour of the nation. But depending on what Cohn and Schine discovered and who they talked to at the commission, this was almost surely going to be a headache for Conant. As high commissioner, he was the top man in charge of the Information Service that Cohn and Schine set out to inspect.

Before the pain set in, however, there was some amusement. Reporters throughout Europe were fascinated by Cohn and Schine. Cohn was a twenty-six-year-old attorney from New York City best known (and, for many, reviled) for helping to prosecute Julius and Ethel Rosenberg for passing information about the atomic bomb to Soviet agents. Schine, the handsome scion of a California hotel fortune, was merely twenty-five (see

Figure I.1). Neither had expertise in libraries, publishing, broadcasting, or European culture and history. And they acted like children. When the duo came to the headquarters of Conant's commission in Bad Godesberg (just outside Bonn), the Frankfurt *Abendpost* described their antics. They "came to Europe in order to study 'waste and mismanagement in the American Information Program,'" the paper said, but they enjoyed an expensive, two-hour dinner at the Hotel Adler. The next day, after interviewing Glenn Wolfe, whom Conant had left in charge, Schine "announced that he put on the wrong trousers" and demanded that a driver retrieve a different pair from his room at the Adler. Once properly trousered, Schine suddenly discovered to greater alarm that he had lost or misplaced his notebook. He and Cohn frantically returned again to the hotel where

it was observed that Mr. Schine batted Mr. Cohn over the head with a rolled up magazine. Then both of them disappeared into Mr. Schine's room for five minutes. Later, the chambermaid found ash trays and their contents strewn throughout the room. The furniture was completely overturned.



Figure I.1. Schine (left), Cohn (center), and McCarthy (right) circa 1953. (Image courtesy of Wisconsin Historical Society, image number WHI-8003)

Things did not go much better in Berlin, Munich, Vienna, Belgrade, Paris, or England. They became testy and combative with reporters who could not ignore the irony at hand: two brash, young Americans waving the flag of freedom from tyranny had come to Europe, blacklist in hand, to snoop through card catalogs of American libraries. They forced librarians to remove books from circulation and even to burn them, rumor would soon have it. “McCarthy’s ‘Young Snoopers’ Hurt U.S.,” the *Frankfurter Rundschau* explained. The paper implored McCarthy to “spare both his fellow citizens and us such practices” and to think twice about intellectual and cultural freedom. “We Germans know what freedom of opinion means from bitter experience—but also through those people whom McCarthy today attacks.”<sup>6</sup>

If Conant was amused, he was nonetheless under orders to take Cohn and Schine’s mission seriously. Like everyone else in Washington, his new boss, Secretary of State John Foster Dulles, was unwilling to anger or cross McCarthy. He instructed Conant and the other commissioners in Europe to cooperate with their traveling investigation, to keep them away from personnel files, and by all means to handle the situation carefully—“This is not something which can be delegated to a junior member of the staff.”<sup>7</sup>

When he returned to Germany, Conant learned from Wolfe the trouble Cohn and Schine had created. One problem was Theodore Kaghan, the commission’s director of information services in Bonn, who insulted Cohn and Schine by calling them “Junketeering Gumshoes.” Cohn then telephoned McCarthy and announced to reporters that Kaghan would soon be returning to Washington to testify before the Senate. With one phone call, Kaghan’s career began to unwind, even though he had “loyalty and security clearances and an anti-communist record reaching from Vienna to Berlin,” as he later told the *New York Times*. Soon there would be trouble for Kaghan’s counterpart in Munich, Lowell Clucas.<sup>8</sup>

### Into the Ring

In June, Conant returned to Washington to present his annual budget to Congress. The task was difficult enough because funding for postwar operations in Europe had been reduced, but Conant also worried that McCarthy, a member of the Senate Appropriations Committee, might use the occasion to launch an attack. Fortunately, Conant was told, this was unlikely. McCarthy was only a member of the committee, not in charge.

And the meetings would be closed to the press, whose cameras and bright lights McCarthy craved.

“Imagine, then, my consternation,” Conant later wrote. Walking to the Senate Committee room, he saw klieg lights, reporters, and photographers milling about. The reason was in the morning papers, which Conant had not yet seen, having just arrived after traveling overnight from Boston. Eisenhower himself had weighed in on Cohn and Schine’s traveling investigation and new reports, confirmed by Dulles himself, that some librarians had not only pulled books from the shelves. They burned them.<sup>9</sup>

The symbolism was too rich for Eisenhower to ignore. The very idea that Americans burned offensive books played into criticism that McCarthy’s America was becoming just as dogmatic, illiberal, and intolerant of dissent as Nazi Germany or Soviet Russia. Eisenhower did not want to look like Joseph Stalin. But he could not deny that critics of the United States had some basis for the comparison. In just a few days, Julius and Ethel Rosenberg would be electrocuted in upstate New York. Despite sustained protests and appeals from leading citizens and intellectuals around the world, Eisenhower refused to grant them clemency.<sup>10</sup> So when the reports of book burning came in, Eisenhower saw an opportunity to claim some moral high ground over McCarthy as well as Cohn, the Rosenberg prosecutor. Speaking at Dartmouth’s convocation, he turned to these reports and urged his audience, “Don’t join the book burners.” No American, he insisted, should be afraid of any book in American libraries.<sup>11</sup>

McCarthy deflected the insult. “He couldn’t very well have been referring to me,” he told a reporter. “I have burned no books.” Privately, however, McCarthy fumed. This was a public insult from a president who in fact owed him at least one favor for not opposing his nominee for high commissioner of Germany. So McCarthy—the former amateur boxer and boxing coach—took off his gloves and confronted Conant at his budget presentation.<sup>12</sup>

About a half hour into the session, McCarthy strolled in, took a seat across the table, and dominated the meeting (see Figure I.2). He asked Conant to specify how much of his budget would support books and other informational materials. Before Conant could begin to answer, McCarthy resumed talking. And talking. This was his trademark technique—to produce a waterfall of vague accusations, ominously large numbers, and loaded questions to fluster, confuse, and exhaust his targets. “May I ask you this,” he said to Conant:



Figure I.2. McCarthy (far left) confronts Conant (far right) at a Senate Appropriations Committee hearing, June 15, 1953. Glenn Wolfe is seated to Conant's right. (Image courtesy of Getty Images)

Our Committee has recently exposed the fact that there are some 30,000 publications by communist authors on information shelves. Many of them in Germany . . . by Communist authors on our shelves with our stamp of approval—some 30,000. May I ask what your attitude toward that is? Do you favor taking those books off the shelves? Would you favor leaving them on the shelves? Would you favor discontinuing the purchase of those books or the continuation of that purchase?<sup>13</sup>

Conant tried to avoid McCarthy's paranoid generalizations. Were he to choose which belonged on the shelves, he explained, he'd examine each book and author individually and carefully—"to see who our Communist author was, what his point of view was, and whether the reading of that book by the Germans would do us more good than harm."

McCarthy knew, however, that Conant could not defend this tolerant, open-minded stance for long. When he was president of Harvard, Conant

was on record that Communists were dangerous and had no business teaching in American universities. He had to agree that books and the ideas they contain, just as much as communist teachers, were a part of the ongoing communist conspiracy to control the globe. So McCarthy steered Conant into that part of the ring:

McCARTHY: Let's see what the point of view of the author is. The Communist is under Communist Party discipline, and the point of view is furthering the Communist conspiracy. There is no doubt about that, is there?

CONANT: With such a man, I would not want his books on the shelves.

McCARTHY: Such a man, I think—and *every* Communist—we can agree has the task of furthering the Communist cause; otherwise, he is not a Communist; is that not correct?

CONANT: Quite so.

McCARTHY: And one of your tasks over there is to fight communism, so . . . would you favor using part of [this budget's funds] to buy the works of Communist authors and put them on your bookshelves?

"No," Conant replied firmly. He was no supporter of the communist cause.

What about the communist volumes on the shelves *now*? McCarthy rehearsed again Cohn and Schine's ominous report and pressed Conant to answer: "Would you favor removing from the bookshelves the works of Communist authors?" Having agreed not to add books by Communists, Conant logically had to disapprove of those already there. Yes, he conceded, "I would be in favor of taking them off."

Now McCarthy reached for his prize. "You would not call that '*book burning*' if you took them off, would you?" Unaware of the national significance the phrase had acquired overnight, and that McCarthy pummeled him to get back at Eisenhower, Conant granted the point. "I suppose you wouldn't," he replied, "but I wouldn't suppose that you would burn them."

McCarthy scored more points as the day wore on. To Conant's objection that the books in question should have been removed discreetly, "without too much publicity," McCarthy grilled him about why anyone could object to the public exposure of Communist authors and what specific objections



Conant had. None at all, Conant conceded: “I certainly don’t object to anything that congressional committees do, sir.”

At Conant’s attempt to defend Lowell Clucas, the officer in Munich, as “a good man for the job,” McCarthy angrily denounced Clucas, Kaghan, and Conant himself as unreliable in the fight against communism:

Then I say—and this is definitely on the record—I feel and think that if you feel you should have men like Kaghan and Clucas spending money over there on the information program, I do not think this senate should give you one penny. I think you have done infinite damage if you continue to keep men like that running the program, and they will continue to do damage.

He threatened to block Conant’s budget and keep a spotlight on Conant’s operation until he performed a thorough “house cleaning over there.” To Conant’s great alarm, McCarthy hinted that Glenn Wolfe, sitting at Conant’s side, might be next.



Until he resigned from the presidency, one of Conant’s colleagues at Harvard was the young historian of science, Thomas S. Kuhn (see Figure I.3). Kuhn



Figure I.3. Thomas S. Kuhn, Harvard University graduation photograph, 1943. (Image courtesy of Harvard University Archives)

was familiar with the bare-knuckle politics of anticommunism. He had greatly admired the founder of his elementary school who was forced to resign her position for her political activities. Her son-in-law, William Remington, belonged to the first wave of suspected Communists in Washington prosecuted after the war. McCarthy probably had Remington in mind when he boasted at Wheeling of having “in my hand fifty-seven cases of individuals who would appear to be either card carrying members or certainly loyal to the Communist Party, but who nevertheless are still helping to shape our foreign policy.”<sup>14</sup> When McCarthy called Harvard a “smelly mess,” he was in the midst of interrogating the Harvard physicist Wendell Furry who ten years before had been one of Kuhn’s teachers.

There is no record that Kuhn paid close attention to Conant’s travails this particular day. But he probably did, because the encounter made front pages around the country and Kuhn admired Conant intensely. He learned eagerly from him, and seemed always proud to be his associate. As an undergraduate at Harvard, he praised Conant’s wisdom and leadership from the editorial pulpit of the student newspaper, *The Crimson*. After the war, when he returned to Harvard for graduate study in physics, he favorably reviewed Conant’s latest venture in the alumni magazine—a new undergraduate curriculum dedicated to general education. Kuhn would soon join Conant’s general education program as a member of the faculty and, under his tutelage, leave behind his training as a physicist to become an expert in the history of science.

After Conant left Harvard to become high commissioner and then ambassador to West Germany, he and Kuhn stayed in touch. Conant wrote a laudatory foreword to Kuhn’s first book, *The Copernican Revolution* and, in 1962, Kuhn dedicated his second book to Conant, the man who taught him much and transformed his life and career. This book is called *The Structure of Scientific Revolutions*. Its dedication reads,

To James B. Conant, who started it.

Conant started two things, in fact—Kuhn’s career as a historian of science as well as the postwar revolution in the scholarly understanding of science for which Kuhn and his book became famous. Giving credit where it is due, Kuhn’s dedication nods to Conant’s efforts to teach Americans how science really works. Conant deplored the schoolhouse view of science as collections of observations and facts and emphasized instead that science is driven by ideas. Its past and its future, he explained in his book *On Under-*

*standing Science*, is a progression of “conceptual schemes” through which scientists understand nature, build instruments, conduct experiments, and move knowledge forward.

Today, Conant is remembered for many things—his expertise in chemistry, the growth of Harvard over his twenty-year presidency, the development of the atom bomb, his diplomacy in Germany, his support of the Educational Testing Service and its Scholastic Aptitude Test, and at the end of his career his crusade to improve public education. But these “conceptual schemes,” the central pillar of his view of science, are no longer so visible. They were eclipsed by the terms Kuhn introduced in *The Structure of Scientific Revolutions*—“paradigms” and “paradigm shifts.”

Paradigms, Kuhn explained, are the lifeblood of science. A paradigm exists at the heart of every scientific community. To become a scientist means joining a community and internalizing its paradigm through years of education and professional practice. To have a scientific career means curating and contributing to the paradigm—expanding its range of application, refining its parameters, and solving the conceptual and experimental puzzles it presents. Though most outlive the scientists whose careers unfold within them, paradigms have a life cycle of their own. Eventually, every paradigm will break down and fail. Some of its puzzles will refuse solution, and those scientists trained within it will be at a loss to understand why. Doubts about its truth will emerge and some forward-thinking scientists will explore new options. Debate will split the community and throw it into crisis. At that point, the stage is set for the emergence of a new paradigm to replace the old and a new kind of “normal science” to form around it. Paradigms shift and science undergoes a revolution.

Kuhn knew that *The Structure of Scientific Revolutions* would make a big splash. Its first sentence promised “a decisive transformation in the image of science by which we are now possessed.” Other historians and philosophers had studied scientific revolutions, but Kuhn believed that most scholars did not fully understand their effects and their philosophical implications—how radically scientific knowledge changes through revolutions, how paradigm shifts lead to entirely new worlds of scientific understanding and perception. He put it this way:

Led by a new paradigm, scientists adopt new instruments and look in new places. Even more important, during revolutions scientists see new and different things when looking with familiar instruments in places they have looked before. It is as

if the professional community had been suddenly transported to another planet where familiar objects are seen in a different light and are joined by unfamiliar ones as well.<sup>15</sup>

Even Conant did not understand this, for he insisted that knowledge grows and accumulates over time; that science learns more and more about the world as one conceptual scheme is replaced by another. But that simply isn't true, Kuhn argued in *Structure*. When a new paradigm transports them to a different planet, scientists leave behind their old paradigm and the knowledge it once made possible. In a real sense, he wrote, “when paradigms change, the world itself changes with them.”<sup>16</sup>

Upon their publication in 1962, Kuhn's insights spread far and wide. *Structure* soon became required reading for philosophers, historians, and sociologists of science. But it also captivated scholars in fields across the academy and then moved into the worlds of business, politics, economics, and even the self-help industry. In Stephen Covey's *The Seven Habits of Highly Effective People*, the most effective people bravely scrutinize their own, personal paradigms to discover their blind spots and better navigate the worlds around them. *Structure* became a touchstone in the so-called culture wars of the 1980s and '90s and it continues to inspire activists and would-be revolutionaries. “Paradigm shift: the great machine of capitalism starts to heave,” the magazine *Adbusters* announced in 2013.<sup>17</sup>

### Revolution, Ideology, and “The Struggle for Men's Minds”

This book explores the origins of *The Structure of Scientific Revolutions* and how Kuhn's ideas were shaped by his powerful relationship to Conant and the cold war politics that surrounded their collaboration. To contemporary eyes, politics—especially the ranting and bullying of McCarthy—may seem irrelevant to a scholarly book such as Kuhn's. As many historians and philosophers have pointed out, Kuhn's main interests lay in scientific theory, science education, epistemology, sociology, linguistics, and history—areas of study that today seem unrelated to national and international politics. But that was not always so. In different ways, and especially during the years of their collaboration, Kuhn and Conant paid close attention to politics. For Conant, as his cat-and-mouse relationship with McCarthy shows, science, education, diplomacy, and politics were never far apart. For the students

in his general education program destined to become doctors, lawyers, politicians, or business professionals, Conant believed there were no better lessons in the virtues of liberalism and intellectual freedom—and conversely the perversions of Nazi and Soviet totalitarianism—than case studies in the history of astronomy, chemistry, or physics. With Kuhn, the connection became stronger and he turned the lesson plan around: the best way to understand momentous changes in science’s history, he argued, is to see them not only as products of reason, logic, and the careful design and analysis of experiments. We should see them additionally through political lenses, he argued in *Structure*, as something like political revolutions that occur within science. They follow the same temporal schema, give rise to factions who may have difficulty understanding each other, and their outcomes seem to transform the world and our knowledge and perceptions of it.

In July 1953, weeks after Conant’s battle with McCarthy, Kuhn wrote a letter to his editor at the *International Encyclopedia of Unified Science*. He had earlier promised to write an essay on the history of science and was now following up to describe what he planned to say. The main idea, he explained, was that a scientific theory functions as an *ideology* in scientific communities and in the minds of the scientists who belong to them. It directs attention to certain kinds of scientific problems. It sets experimental and logical standards that professional scientists must meet. In some ways, it even tells scientists what to think—“it dictates preferred techniques of interpretation,” Kuhn wrote—and discourages creativity and imagination that might lead scientists to think outside their ideological box.<sup>18</sup>

Kuhn’s wide range of intellectual interests and his working relationship with Conant put him in a position to see this intriguing and provocative connection between politics and science, that scientific and political communities are subject alike to the world-shaping powers of ideology. These powers were on display during the momentous political events of Kuhn’s youth and they surrounded his postwar collaboration with Conant. Though the bombs and artillery of World War II in Europe and Asia had ceased, when Kuhn joined Conant’s general education project the nation was fast descending into ominous, uncharted geopolitical territory. Conant called it an “armed truce” between the United States and the Soviets. But it would soon be known as the “cold war” of ideology pitting liberalism and democracy in the West against totalitarianism in the East. In the gendered language of its time, this winner-take-all contest of political philosophy was often called “the war for men’s minds” or, usually, the “struggle for men’s minds.” The summer session at the University of Wyoming in 1951 was dedicated to this struggle, as were

speeches, editorials, magazine articles and films from the late 1940s well into the 1950s (see Figure I.4).<sup>19</sup> The drama and high stakes were perhaps most vividly symbolized by the brainwashing sensation that swept over the nation in the early 1950s as Americans learned about GIs in Korea who had been forcibly transformed into obedient, true-believing communists. Backed by Chinese and Russian psychologists, the story went, their North Korean captors almost literally “washed their brains,” replaced one ideology with another, and turned them into fundamentally different kinds of human beings.



One of the popular clichés of our time is that the struggle between the free world and the Communist bloc is a “battle for men’s minds,” an ideological contest for the emotional and intellectual endorsement of the so-called uncommitted peoples of the world. The cliché is partly true, but like most catchy phrases it leaves a greater truth out of sight.

Figure I.4. “The Struggle for Men’s Minds” and variations in popular and scholarly media, 1947–1954.

The struggle for men's minds helped to fuel McCarthy's crusade, Cohn and Schine's sensational tour of Europe, and McCarthy's attack on Conant that day in Washington. For in this contest of ideologies vying to control the human mind, books and the ideas they contain became heavy artillery. The same logic propelled the philosopher Sidney Hook's crusade against communism in colleges and universities. Hook warned the nation that communist faculty were under orders to inject their ideology into lectures and classes. Just as McCarthy urged Conant to "have a house cleaning over there" in Germany, Hook urged Conant and other university presidents to clean the halls of academia at home and remain vigilant against so-called fellow-traveling professors who seemed secretly captivated by Soviet ideology.

McCarthy and Hook became leading public figures during the struggle for men's minds. But the majority of intellectuals, scientists, and university administrators who never made headlines acknowledged the enormous power of ideas to control the mind and the enormous stakes of the ongoing struggle against communism. In this respect, neither James Conant nor Thomas Kuhn was unique in being keenly interested in the political implications of how science is understood. Yet Kuhn's view was original and provocative. While most intellectuals believed that politics and political ideology threatened to *interfere* with science and its progress, Kuhn saw a different, more constructive connection. If the struggle for men's minds would determine the future of humanity and the nature of civilization, then perhaps similar, winner-take-all contests between ideologies in science—struggles for *scientists'* minds—had all along determined the historical course of science and would continue to do so into the future.

### The Invisibility of Politics

In the myriad expositions, analyses, and criticisms of Kuhn's ideas that have been published in the wake of *Structure*, the role of politics is rarely addressed. One explanation for this circumstance begins with Kuhn's provocative letter to his editor. Thinking out loud about what his future essay would be called, he said the word *ideology* should naturally appear in the title. But he knew that the word had controversial associations. So he suggested instead "The Structure of Scientific Revolutions." This and other changes in Kuhn's terms and concepts, especially the eventual replacement of "ideology" by "paradigm," put distance between *Structure* and the ideologically charged politics that surrounded its birth.

Another reason is that the American academy did not fare well during these early years of the cold war. Having come of age during the Great Depression of the 1930s, many intellectuals and professors of the 1950s and '60s had once been sympathetic to socialism, if not the Communist Party itself. Even Sidney Hook, the era's most outspoken and determined foe of all things Stalinist, was once a proud and vocal Marxist who rubbed elbows with party Communists. So when anticommunism became the order of the day in the late 1940s, the stage was set for professional and personal carnage. Those who did not convert to anticommunism often faced an unhappy choice between two kinds of public disgrace—that of the soft-minded sympathizer who remained captivated or “duped” by Stalinist ideology, or the stool pigeon or snitch who saved himself by “naming names” of former comrades in front of FBI agents or congressional committees. Some, such as Kuhn's teacher Wendell Furry, refused to perform this ritual and invoked Fifth Amendment protections against self-incrimination when called to testify. But they often fared no better and were commonly denounced as “Fifth Amendment Communists.”

As they were for Hollywood screenwriters, the late 1940s and early '50s were something of a collective nightmare that many teachers and professors simply wished to forget in subsequent decades. In addition, the progressive and tolerant academic culture that formed later in the 1960s around ideals of free speech, civil liberties, and social justice rendered bitter memories of these years somewhat antique and irrelevant to new generations of intellectuals. Not until the 1980s would historians such as Ellen Schrecker discover how violent and transformative this era had been for American colleges and universities, as topics such as Marxism lost academic respectability and professors disengaged from politics and public dissent in favor of scholarly objectivity.<sup>20</sup> Still, the McCarthy era's effects on intellectual life have usually been seen as repressive and destructive—making it seem all the more unlikely that themes and debates from this difficult and readily ignored era creatively sparked and encouraged Kuhn's revolutionary theories about science.

A third explanation for the near invisibility of politics is the enormous and lasting influence of *The Structure of Scientific Revolutions* itself. It remains a classic textbook for aspiring historians of science, philosophers, sociologists, anthropologists, and scholars in many other fields. For graduate students in the humanities and social sciences, fluency in “paradigm shifts” and “paradigm maintenance” is a familiar scholarly credential. Crucially, however, as Kuhn himself emphasized in *Structure*, textbooks are forward-looking. They focus



students' attention on their paradigm's future and how it can be further applied and refined. At the same time, they discourage critical inquiry into the past by supplying readers—usually in the introductory chapter, Kuhn noted—with a ready-made history that is easy to understand but invariably false (at this point in *Structure* Kuhn invoked George Orwell's *1984*).<sup>21</sup> Instead of winning a revolutionary struggle between formidable adversaries, each of whom possessed credible arguments on its side, textbooks lead students to believe that the reigning paradigm simply corrected the oversights and blunders of the past. Though it is physicists, chemists, biologists, and other kinds of normal scientists for whom revolutions become “invisible” in this way, Kuhn began *Structure* with a comparable story about the blindness of historians and philosophers to the historical record of “research activity itself”; a story about the dynamics of paradigms liberating readers from the false “image of science by which we are now possessed.”<sup>22</sup> As its fame and influence grew, this revolutionary view of *Structure* and its achievement took hold. With a single, relatively short book, it is often said, Kuhn swept away decades of mistakes attributable to philosophical bias (most of it foisted on scholars by the movement known as logical empiricism) and persistent neglect of historical and sociological forces within science itself. Having cleared away so much debris, *Structure* invited its readers to ignore this error-laden past and orient themselves to future research and teaching enlightened by an understanding of paradigms and all they explain.

In recent decades, historians of philosophy have questioned just how original and revolutionary Kuhn's theory of science really was. Historical interest in logical empiricism revealed that Kuhn's views were not so very different from some held by Rudolf Carnap, a leading logical empiricist who co-edited the *International Encyclopedia of Unified Science* with Charles Morris.<sup>23</sup> Instead of rejecting his intellectual forbearers, Kuhn is now seen by most scholars as belonging squarely within certain philosophical, sociological, and psychological traditions.<sup>24</sup> Recent books by Alexander Bird and K. Brad Wray, for example, are concerned less with the origins of Kuhn's ideas than with the place of Kuhn's ideas in the intellectual firmament and their yet-untapped potential for understanding science and the growth of knowledge. Bird does offer a historical account of Kuhn's ideas, but it is exclusively intellectual and scholarly. “There are seeds of Kuhn's own revolution in such historians and sociologists as Ludwik Fleck, Karl Mannheim and Robert Merton, as well as philosophers such as Toulmin and Hanson,” he writes. But Kuhn's personal interest in politics and ideology plays no role in Bird's account because it includes, as he put it, only “the sparsest mention of Kuhn's biography.”<sup>25</sup>

Philosophers who notice political and cultural themes in *Structure* tend to push them aside as incidental, if not misleading. In his systematic analysis of *Structure*, for example, the philosopher Paul Hoyningen-Huene noted that German-speaking scholars were puzzled by Kuhn's talk of a paradigm shift as a "conversion" or *Bekehrung*. This made it seem as though scientific progress involved not only reason, observation, and careful experimentation but something like religious faith or personal transformation. For careful scholars such as Hoyningen-Huene, this was a distraction because "this proximity to the cliché of religious conversion was never really part of Kuhn's theory."<sup>26</sup> The philosopher John Earman once put it more colorfully by noting that *Structure* abounds with "purple passages"—not only about the "conversion experiences" Kuhn placed at the heart of momentous paradigm shifts, but about the intensity of paradigmatic crises and revolutionary debates between factions who live almost literally in incompatible worlds of thought and experience. Like Hoyningen-Huene, Earman saw these parts of *Structure* as distractions that interfere with the philosopher's task of rendering Kuhn's theories in clear, objective, black and white prose.<sup>27</sup>

This book sees these passages differently—not as distractions or matters of style that, like thin ties of the 1960s or bell bottom pants of the '70s, can be discarded without loss. Along with *Structure*'s sustained interest in scientific revolutions—a word that rings with widely recognized political implications—its purple passages point to the struggle for men's minds, itself a festival of dramatic, purple prose about the overwhelming powers of ideology and the reality-changing stakes of cold war politics. As Kuhn's interests in "conversions" might suggest, these roots sometimes extend through cold war fears about brainwashing into more distant and original features of American culture, such as the nation's Puritan devotion to religious conversion and purification. Hoyningen-Huene is right that religious conversions are not themselves a part of Kuhn's theory of science, but they were a fixture within Kuhn's intellectual heritage. He and Conant greatly admired William James, for example, the intellectual giant who strode Harvard yard decades before and who celebrated the life-changing power of religious transformations in his classic book *The Varieties of Religious Experience*. "A fine and truly beautiful book," Kuhn noted after he first read it in the early 1940s. As argued in these chapters, the event that evidently sparked Kuhn's interest in the inner, cognitive experience of scientific revolutions, an event he called his "Aristotle Experience," echoes both James's account of sudden, life-changing experiences as well as contemporary interest in political conversions and brainwashing.

A few intellectual historians have nonetheless recognized the politics behind Kuhn's purple prose. David Hollinger noted that, unlike most other writers about science in the 1950s and '60s, Kuhn "focused on the political dynamics within scientific communities" and portrayed his normal scientists behaving "more in a totalitarian than in a democratic manner." Peter Novick took it for granted that Kuhn's gloss on revolutions as "a choice between incompatible modes of community life" was a "metaphor drawn from politics."<sup>28</sup> But few historians seeking to understand *Structure's* origins have followed these threads into political realities. In his book *Working Knowledge*, for example, Joel Isaac argues that *Structure* is best understood reflecting the interdisciplinary intellectual landscape at Harvard at mid-century. Features of this landscape include the case-study method of teaching that Conant and Kuhn utilized in the general education program, Kuhn's eclectic uses of psychology, sociology, and science education to explain how normal science and paradigm shifts come to be, and the "conceptual schemes" that Conant and others working at Harvard took for granted as they sought to understand precisely how science works and how knowledge grows. This broad interest in conceptual schemes was sparked and sustained by the biochemist Lawrence J. Henderson, who distilled conceptual schemes and their importance from the sociological writings of the Italian Vilfredo Pareto. Henderson taught courses on Pareto, founded the "Pareto Circle" (in which Henderson and his students discussed Pareto's ideas and formulations in the 1930s), and laid a foundation on which Kuhn would later build his new image of science. That foundation included Conant, who knew Henderson not only as an influential Harvard professor, but a member of his family (Henderson was his wife's uncle). And it included the Harvard Society of Fellows, which Henderson helped to create in the 1930s. Kuhn later joined the society and bounced his ideas off several talented intellects who were students of Henderson, Pareto, or both.<sup>29</sup>

As Isaac sees it, the scope of this influence was narrow, intellectual, and disciplinary. Pareto offered to Henderson and others "the technical understanding of epistemology," which they believed added rigor and prestige to the ways they theorized human groups. Yet Depression-era politics saturated Henderson's enterprise. These were years when many intellectuals, especially New Yorkers like Sidney Hook, took it for granted that American capitalism was broken and bound to be replaced by either socialism or fascism. This was a prognosis that most wealthy Bostonians could not ignore and it explains something of their attraction to Pareto, his searching critiques of Marx, and his very different view of human history. In place of Marx's vision

of history driven by class conflict to socialism, for example, Pareto believed that social and economic systems were formed of mutually dependent parts whose functional relationships disposed them to seek equilibrium and stability in the wake of external or internal shocks such as the ongoing Depression. “As a republican Bostonian who had not rejected his comparatively wealthy family,” wrote George Homans, who studied under Henderson and knew Kuhn within the Society of Fellows, “I felt during the thirties that I was under personal attack, above all from the Marxists. I was ready to believe Pareto because he provided me with a defense.”<sup>30</sup>

### A Role for Politics

What is to be gained by examining *Structure’s* origins against this political backdrop? At the very least, we stand to gain a more complete and realistic picture of Kuhn, his famous book, and where it came from. To be sure, Kuhn was a scholar and *Structure* reflects his education, his intellectual curiosity, his extensive reading in philosophy and history, and his desire to enlighten historians and philosophers whom he saw caught within a faulty, inaccurate picture of science’s history. But American politics, as much as theories of language, epistemology, psychology, history, and other scholarly and scientific interests, was among *Structure’s* formative ingredients. Isaac sees Kuhn “formed almost exclusively by the Harvard complex” and “in many ways the ultimate product”<sup>31</sup> of it, but Kuhn was no blank slate when he arrived Harvard in the fall of 1940, or when he returned for his graduate training after the war. During his elementary and secondary education, he and his family were keenly interested in politics and the rise of Nazism—especially menacing for Jewish families such as the Kuhns. In prep school, if not before, Kuhn was fascinated by the powers of ideology and propaganda and he brought these interests to Harvard. Alongside his reading, teaching, and research, they helped him to develop and refine the ideas that would come together in *Structure’s* theories of normal science and paradigms.

Taking politics into account also sheds light on Kuhn’s originality, unorthodoxy, and intellectual daring. As its dedication declares, *Structure’s* origins cannot be understood apart from James Bryant Conant. Yet Isaac and other scholars tend to reduce *Structure* to an expression or product of Kuhn’s relationship to Conant, to his university, or both. The historian Jamie Cohen-Cole, for example, has examined how some of the Harvard sociolo-