CHAPTER 6

Doing “Science for the People”: Enactments of a New Left Politics of Science

Traditional attempts to reform scientific activity, to disentangle it from its more malevolent and vicious applications, have failed. Actions designed to preserve the moral integrity of individuals without addressing themselves to the political and economic system which is at the root of the problem have been ineffective. What is needed now is not liberal reform or withdrawal [from science] but a radical attack, a strategy of opposition. Scientific workers must develop ways to put their skills at the service of the people and against the oppressors.

The “Science for the People” manifesto, published in Liberation in 1972, captures two key features of the “science for the people” project: its explicit rejection of the reform of political institutions and the moral individualist strategy, and an open-ended approach to the development of ways using scientific ideas and skills in the service of “the people.” Scientific knowledge, according to this perspective, was not politically neutral, but the product of political and economic arrangements that led it to be most beneficial to elites, rather than to ordinary people. Liberals and moral individualists had already asserted that scientific knowledge was not always beneficial. Radicals went further, arguing that interlocking systems of capitalism, racism, sexism, and imperialism would have to be eliminated in order for the benefits of science to extend beyond the ruling classes.

Science for the People (SftP) was a diverse organization, with chapters and individual members carrying out a variety of activities all over the United States. Yet SftP might have remained relatively unknown had they and other scientists not used unconventional and disruptive tactics at the 1969, 1970, and 1971 American Association for the Advancement of Science (AAAS) meetings to draw attention to their ideas. At these meetings, SftP activists disrupted panels, used political theater, harassed scientists who had associations with the military and industry, held “alternative” sessions, and distributed literature. Their methods and claims disrupted a key organizational representation of the social integrity of “science”: the professional meeting. Such meetings are traditionally ordered around staid debates over the validity of scientific claims, in which scientists take turns presenting evidence and argue, usually in a genteel fashion, over interpretations and assumptions. SftP activists refused to observe these rules of etiquette. They made it impossible for meeting participants not to hear their perspective, and disrupted a key moment in the ritual reproduction of science as a social practice. These disruptions, moreover, helped to draw more attention to SftP’s assertions about the relationships between scientific research and the reproduction of inequality.

Although SftP was perhaps best known for these activities, the majority of the group’s activities looked nothing like this. Unlike the Society for Social Responsibility in Science (SSRS) and the St. Louis Committee for Nuclear Information (CNI), which had templates for liberal and pacifist action, SftP did not. By 1969, the New Left, which served as a reference point for many SftP members, was becoming an amalgam of loosely connected forms of action and ideas. The diverse directions in which the New Left went after 1969—“opting out” of professional life and moving toward revolutionary action, community organizing, and other activities—were mirrored in the diverse activities of SftP nationally, and among its local chapters. Within the broad contours of an ideological framework that called for disconnecting science from the reproduction of existing power relations, group members produced a continual flow of ideas and actions in which they rethought what was unique (or not) about science and scientists, how knowledge and power were related, and how best to redirect science for “the people.” Above all, SftP was a contentious organization, in the sense that its members continually challenged other scientists, both within and outside the group, to examine how their work contributed to inequality. Few of SftP’s targets likely welcomed these challenges, but they had the effect of laying bare the very different ways that scientists thought about the proper relationship between science and public political issues.

SftP, like many other professional-based, anticapitalist organizations from that era, never collectively resolved the problem of how best to assist the working class without resorting to the use of expertise. SftP members worked, instead, on projects such as providing assistance for agriculture, creating teaching modules for secondary-school teachers, carrying out health studies for unions, supporting Vietnamese scientists, and countering the claims of sociobiologists. SftP chapters often carried out these projects with other New Left organizations and networks, including the
Medical Committee for Human Rights, Computer People for Peace, the War Resisters League, and Health/Pac.

In an analysis of the ways in which scientific knowledge can serve ordinary people instead of elites, the sociologist Brian Martin articulates four theoretical possibilities:

1. "Science for the people, (rational version)"*: an enlightened government directs scientific resources into areas of greatest benefit to society;

2. "Science for the people (pluralist version)": research agendas, rather than being dominated by corporate and government imperatives and thinking, are shaped by wider social priorities as articulated by individuals and groups who are in touch with genuine social needs*;

3. "Science by the people": by participating in the scientific research process itself, citizens shape the subjects and content of scientific knowledge; and

4. "Science shaped by a citizen-created world": society is reorganized so that citizens directly determine what is produced and how it is produced.1

Since StfP was a decentralized group, it is no surprise that members had different views on which of these versions they aspired to, and which they could achieve. They perhaps all preferred the fourth choice, but most chapters actually engaged in the second. This chapter explains how the actions and claims of StfP members, and of other scientists and engineers who felt similarly, created and laid bare fundamental disagreements about the political and moral status of scientific knowledge, through their disruptive and confrontational tactics at professional meetings in 1969 and 1970. The chapter then turns to the less well-known activities of the group to illuminate varied ways that StfP members interpreted and acted on the idea of "science for the people" in local settings by an examination of the activities of three influential chapters, in Chicago, New York, and Boston. Here I show that the political networks in which scientists were involved at a local level shaped the development of innovative ways to engage in "science for the people."

**The Turn toward Radicalism: February–December 1969**

After months of uncertainty about the direction the group would take, between March and December 1969, StfP chapters began to turn away from liberal reform strategies.2 As the organizers had planned, local chapters began to explore different ways of joining scientific identities and ideas with radical political action. Chapters sometimes split into groups focused on problems of class and race, and those who wanted to focus on liberal reform issues such as the antiballistic missile (ABM) system.

During the fall of 1969, local groups did not coordinate national actions, so the organization existed as many separate units exploring options for taking bold action. StfP was especially active in Boston. A dense network of war resister, labor, peace, feminist, and anti-imperialist groups was spread throughout the Boston area, and many of the scientists who were part of Boston StfP were also participants in some of these groups.

In the late spring of 1969, the Boston chapter began to publish the Science for the People newsletter. The beginning of the 1969–1970 school year in Boston saw the continuation of activism that had been generated by March 4. The main focus of the Science Action Coordinating Committee (SACC) continued to be MIT, but overlapping networks of SACC and other science activists from around the area continued to look for ways to broaden the challenges to the institutional arrangements of science. A group of students who had been advised by the AAAS to organize a youth-oriented symposium, members of StfP, and SACC activists came up with the idea to use the December AAAS meeting in Boston to promote their call for more radical action. During these discussions, they formulated the slogan "science for the people."3 Organizing under the name Scientists' Action Group (SAG), a "coalition of Boston area radical science groups who work with community action groups to promote 'science for the people,'" they announced that they had requested that the AAAS allow them to hold a two-day symposium called "The Sorry State of Science" at the upcoming annual meeting in Boston. They also requested that the AAAS allow the public to attend the meeting. The AAAS board originally refused their requests, but when SAG threatened a demonstration, the board relented.4 The inclusion of nonscientists at the meeting was not entirely new (spouses of scientists, overwhelmingly women, had long attended the sessions); the "public" now included anyone who wished to attend. They would have a chance to hear scientists speak directly, instead of having scientists' views mediated by journalists.

The call for the inclusion of debates about urgent political issues of the day was not limited to the students who planned "The Sorry State of Science." In the previous year, the AAAS board had responded to members' and other scientists' requests to take action on or debate political issues ranging from the use of herbicides in Vietnam, to the lack of student involvement in the association, to the more general question of the responsibility of scientists for the values and uses of science.5 In November and December, various groups and individuals submitted resolutions on political issues that they wished the Council to consider. The Scientist's Committee on Chemical and Biological Warfare requested that the associ-
moon rock with a $1.49 price tag on it. The scientific value of an actual moon rock, they argued, was equivalent to that of their faux moon rock. Melvin Margules, a member of the Columbia University Ecology Group, the least organized, least sophisticated, and most disruptive group of radical scientists in attendance, refused to leave the speaker's platform and refused to let panelists speak.10

Feminists involved with the SAG activities drew up a list of eight demands for improving the status of women in science, including equal pay, access to admission to graduate programs, changes in high school counseling, an end to sexist curricula. They disrupted the women's honorary Sigma Delta Epsilon meeting to present their list of demands, but were prevented from delivering them.11 At a session on developmental psychology, feminists charged that a panelist's argument that children were healthier if mothers stayed home was "discriminatory."12 Going well outside the routines of civil discourse, a group of feminists from the Women's International Terrorist Conspiracy from Hell (WITCH), a short-lived group founded in 1968 by members of New York Radical Women, used political theater to draw attention to women's subordinate status generally, and to condemn the use of science for war making. WITCH "hexed" the science honorary society Phi Beta Kappa–Sigma Xi at the society's luncheon because it represents and embodies the elitist and exclusionary nature of science today. . . . [I]nstitutionalized science has set up a hierarchy that has excluded and oppressed white women, as well as black people, poor people, and all but a select group of white males. When asked about this . . . they [scientists] invoke the utterly nonsensical fallacy that white males are the only ones qualified. This is not science; this is verbal magic to maintain an oppressive system. Since in this matter scientists are resorting to magic, we are countering with our own effective magic."13

Audience members were divided on the appropriate response to activists' disruptions. Many were especially upset by SAG's disruption of the televised session on the space program. Some AAAS members argued that "making a circus out of the televised sessions of Americans' best known forum for issues important to society" had to be stopped. Others, by contrast, argued that viewers would distinguish between foolish and serious comments, and would give the AAAS high marks for allowing free discussion. And journalists were quick to distinguish between those activists who followed the usual rules of dress and hairstyle and those who did not. Those who were discriminated in journalists' stories were those who were "shoeless," "bearded," "wearing a tam-o'-shanter," or wearing a "wool shirt and work pants." By contrast, journalists remarked favorably on those men who were "clean cut" with "short hair," who waited patiently to speak, and came prepared with "thoughtful questions."14

According sponsor a study of the use of defoliants in Vietnam. Roman Skorski, council member from the University of Alabama, called on the AAAS to encourage more East/West scientist exchanges, in part because "complete world destruction is feared by many persons," and the United States and the Soviet Union were "engaged in fruitless negotiations concerning disarmament of chemical, biological, nuclear, and conventional weaponry." Another resolution insisted that the AAAS denounce the "ruthless repression" of the Black Panther Party, two of whose members were killed in a police invasion of their headquarters in Chicago in early December. In the previous two years, the AAAS had sponsored an increasing number of panels on political issues such as population growth and environmental destruction. Clearly, the concern about how science was implicated in public political issues was not limited to radicals. Yet it was the radicals who would go beyond the use of routine bureaucratic procedure and professional practice and dramatically force these issues to be considered by more than just a handful of organizational committees. Radicals' actions drew nearly all participants into the debates, whether they wished to be included or not.

The two-day "Sorry State of Science" symposium resembled a typical symposium in many ways. Panelists prepared papers and debated with the audience the actual versus the proper relationships between science and politics. Participants raised the possibility of disrupting other meeting sessions, but did not move beyond the usual bounds of discourse and presentation. The session did, however, break with professional norms by beginning with a slide show of the war in Vietnam, pollution, and dead soldiers, accompanied with music by Bob Dylan and the Beatles. Allen S. Weinrib, a graduate student organizer of the symposium, encouraged the audience to "interrupt the speakers" and "ask challenging questions." He sounded the "misuse of technology" theme voiced by earlier groups of liberal science activists, but his emphasis on who benefited from such misuse and who lost went beyond simply stating that the government ought to redirect funds toward pressing social problems. Misuse, he argued, took the form of "militarism, economic exploitation, and psychological domination."8

Outside their own symposium, however, SAG activists parted company with most of the other attendees by using confrontational and disruptive tactics to make their points. At a televised and heavily publicized session on the future of the space program, activists held signs that read "Rocket on the Moon, Smash on Earth," "Redirect Society to Redirect Science," "Science for the People," and "The U.S.: First in Space, Sixth in Infant Deaths." Two women presented Charles Stark Draper, the head of the beleaguered Instrumentation Laboratory at MIT, with a papier-mâché
Antiwar opponents—who included those using disruptive tactics and those who did not—scored a political victory when in a vote of 114 to 51, the AAAS Council officially opposed the continued use of defoliants in Vietnam. The vote was based in part on the evidence gathered by Harvard professor Matthew Meselson in an AAAS-sponsored study that showed the harmful effects of defoliants on the environment in Vietnam.\textsuperscript{15} Yet it was not only data that was changing how AAAS leaders and the rank and file thought about their public political role. Howard O. McMahon, chair of the 1969 Boston meeting, said, “In previous years, the organization would not have been willing to take formal action on a moral basis. In the past, the AAAS has said ‘We’re scientists, we shouldn’t get involved in moral or political questions.’” According to the \textit{Boston Globe} writer Richard Knox, the new trend among “young radicals and not-so-young members of the AAAS establishment, was one of increasing concern for dealing with ethical as well as scientific concerns, and a new dedication on scientists’ part to emerge from their ivory towers.”\textsuperscript{16} The degree to which the AAAS board was willing to engage moral and political issues had its limits, however. Although the association elected its first female president, Mina Rees, a mathematician at the City University of New York, the AAAS Council refused to debate the feminists’ eight demands or to act on them. They also refused to consider the two resolutions that SAG submitted for consideration at the business meeting: the call for withdrawal from Vietnam, and for the withdrawal of technical support for the “repression of the Black Panther Party.”\textsuperscript{17}

After waiting through the business meeting, SAG introduced its proposals, but the AAAS president H. Bentley Glass immediately adjourned the meeting because none of the resolutions had been submitted according to AAAS procedure.\textsuperscript{18}

Despite the failure of the AAAS leadership to take action on specific SAG demands, the radicals’ activities and claims were an opening salvo that challenged the routine, ritual reproduction of science as usual. As many scholars of social movements have demonstrated, the use of tactics that undermine the moral continuity of institutional arrangements is a powerful means of creating crises—and leverage—that can be used to force change. But disruptive tactics such as sit-ins, the appropriation of public and private spaces for political purposes, refusals to leave, vigils, and street parties, to name just a few, are not always effective. Many factors are involved, including the capacity to neutralize tactics without escalating their dramatic power, the inclination of those in power to grant challenger’s wishes, and the power of opposing groups of activists.\textsuperscript{19} SfP’s main victory at the AAAS meeting was to raise the stakes of ignoring an increasingly vocal subgroup of scientists who wished to redirect science.

The 1970 AAAS Meeting: The Escalation of Direct Action

Although “the sixties” are often remembered as a time of extremism and revolutionary fervor, it was in 1970 that \textit{revolution} became a watchword for activists who were fed up with the hearts-and-minds approaches to social change that had characterized some activism in the 1960s. No event was more emblematic of the new revolutionary spirit on the left than the spring 1970 student strike. At thousands of high schools and colleges around the country, students demanded more power over curriculum and an end to the war and military research on their campuses. Students at New York University took over Kimball Hall, and faculty and students voted to suspend classes until the end of the semester. At Washington University, students rioted and burned the ROTC Air Force Building. At the State University of New York–Stony Brook, students lit fires across the campus and firebombed an art exhibit. Other schools held peaceful vigils and marches, workshops, and town meetings. By far the largest concentration of striking schools was in the northeast, particularly the Boston area, although schools in the mid-Atlantic region, California, Illinois, Indiana, Michigan, Minnesota, and Wisconsin were also rife with activity. In every region, public and private schools, small and large, religious and nonreligious, were involved. In some areas, high school students were active participants, and at most schools there was considerable faculty support for the strike.\textsuperscript{20} The feeling of power and possibility was palpable. Revolutionary social transformation did not seem utopian, but realizable.

The AAAS board prepared for the possibility that the organization’s annual meeting in Chicago might be disrupted by those calling for revolutionary action. After canvassing the leadership of other professional associations about how best to prepare for this eventuality, they concluded that disruptions were unlikely. Only one annual meeting, that of the American Psychiatric Association in San Francisco, had been severely disrupted by activists. The board recommended the following rules: that every session be open to any person, registered for the meeting or not; that care should be taken to include the full expression of all views; and that when a disruption did occur, the session chair should request a show of hands concerning continuation.\textsuperscript{21} Despite these preparations, the 1970 meeting was more disruptive than the 1969 meeting had been.

In this spirit, at the AAAS’s 1970 meeting in Chicago, SfP’s actions were confrontational, uncompromising, and insistent. As one SfP member warned at the beginning of the 1970 meeting, “[AAAS attendees] are not here to educate us. We’re here to educate them.”\textsuperscript{22} SfP went well beyond the neutral distribution of scientific information, cool logical ar-
gument, and gentle moral discourse that previous scientists had used in their engagement with public political issues at AAAS meetings. To draw attention to their concerns and force discussion of the power relations that shaped scientific knowledge, StfP made it impossible for the meeting to proceed in a genteel fashion. As the New York Times science journalist John Noble Wilford argued, the 1970 AAAS meeting starkly contrasted with earlier meetings. The AAAS meeting, he noted, used to be “a quiet, dignified and optimistic affair” where scientists gathered to “renew fraternal ties, to report in an arcane language on their research and to speak of ‘endless frontiers’ and the wonder and elegance of science.” This sort of clubbiness and old assumptions about technology and science were exactly what StfP wanted to undermine.

Like the activities at the Boston meeting, those at the Chicago meeting were organized by StfP members and others who were active in local-area activist groups, including the New University Conference and feminist groups. As in 1969, StfP activists held placards with “Science for the People,” “We Are a Death Oriented Culture: Reverse the Priorities—All Power and Life to the People,” and other slogans emblazoned across them. Sometimes shouting and interrupting, StfP members demanded that speakers discuss their funding sources and the uses that were made of their work.

Audience members who were not radical scientists contributed to the disorder at the meeting. When radicals disrupted a session on crime, violence, and social control, an audience member, the wife of a scientist on the panel, jabbed the activist Frank Rosenthal with a knitting needle after stealthily moving forward to sit behind him. She said she was frustrated because Rosenthal refused to “keep quiet and let the symposium continue.”

Although StfP’s analysis of science and power was fundamentally structural, members also used public shaming of individual scientists whose professional lives they believed represented the sorts of alliances they deplored. For example, StfP presented Edward Teller, the anticommunist, hawkish physicist who had played a major role in the development of the hydrogen bomb, with the “Dr. Strangelove Award,” a wood and chrome soldier with the words “I am just following orders” written on it. Teller refused the statue and told its presenter that he should be ashamed of himself. Recounting his experiences as a Jewish refugee, Teller said that he refused to be subject to tactics he had experienced in Nazi Germany. He was, he said, “now under attack from thoughtless individuals who do not know what they talk about and whose acts are about to induce violence and lack of reason.”

Three days later, StfP activists used the same tactic to embarrass Glenn T. Seaborg, the chairman of the Atomic Energy Commission.

They read an indictment of him for “the crime of science against the people,” but Seaborg walked out before activists could confront him. The indictment read:

We, scientific workers and students, here in Chicago at the annual meeting
Of the A.A.A.S., do hereby on this, the 30th day of December, 1970, indict
You, Glenn T. Seaborg, for the crime of SCIENCE AGAINST THE PEOPLE.

... You are guilty, Glenn T. Seaborg, of a conscious, major, self-serving and ruthless role in establishing, organizing, maintaining and developing institutions of science and government for effective use by the ruling class. ... Glenn T. Seaborg has ... performed this function, of coordinating and strengthening the dependence of science and universities on war and profit in a unique criminal history of responsibility in many of these institutions, for example: Livermore Radiation Laboratories ... University of California ... Atomic Energy Commission ... Department of Defense ... National Aeronautical and Space Agency ... The President’s Science Advisory Committee.

They continued that Seaborg’s administrative positions in these agencies and institutions had allowed him to direct both the building of weapons and “the most outrageous forms of waste” at NASA, where “dishonest appeals to the noblest traditions of science [are] seen to divert attention from the obvious neglect of people’s needs.” Herb Fox, a member of the Boston chapter of StfP, condemned Seaborg for his role in “establishing, organizing, maintaining, and developing institutions of science and government for the effective use of the ruling class.” John Froines, a chemist and a defendant in the 1969 Chicago 7 trial in which he and six others were accused of inciting riots at the 1968 Democratic National Convention, had harsh words for scientists who sold their knowledge for profit and professional status. Scientists, he argued, had “sold their souls to the Defense Department and the Federal Government for grants and status in the intellectual community. Others have sold their souls to industry.” In “the black community,” he said, “we have a word for those who sell their soul for a ‘pittance.’ We call them Uncle Toms.” The biologist Richard Lewontin urged scientists to give up their belief that science was pure and separated from other aspects of social life. “It is time to stop saying that science stands outside of society. Science is a social activity just like being a policeman, a factory worker or a politician.”

The ideas that radicals presented seemed to elicit less comment from journalists covering the meeting than the radicals’ activities. Science edi-
social community of natural philosophers and of valid facts about nature. SftP's actions and claims, from their attacks on the moral credibility of individual scientists, to their rejection of the idea that scientists alone were the proper witnesses and judges, echoed the challenges that Hobbes had posed. To the extent that the rules for participating in such public witnessing are deracialized, the notion of collective agreement through witnessing is weakened.

Refusing to participate in acts of ritual solidarity denies acceptance of the values of the community. For groups that depend on conformity, rituals are even more important, thus making refusal a more significant act of deviance. SftP's activities at the AAAS meetings were akin to hurling the bread and wine to the floor during Communion in a Catholic Church in order to protest the treatment of homosexuals. Not only are these acts condemnations of policy, they are affronts to the practices that reproduce the organization. At an organizational level, activists were playing out the heresy that comes from orthodoxy, real or perceived.

The disruptions of the AAAS meetings did not precipitate a crisis in science in and of themselves, nor were they the main cause of the weakening of scientists' capacity to speak as neutral experts. But they did rattle the easy, civil, and gentlemanly structures that made it possible to see scientists as one-dimensional, cognitive, rational beings rather than complex moral individuals. SftP's use of unconventional tactics did not end with the AAAS meetings. They also drew attention to prominent scientists' ties to the Jason Program of the Institute for Defense Analyses (IDA). Unlike the pacifists, whose plan of action would require all scientists to renounce military funding, SftP activists saw their targets as representatives of a particular kind of relationship with the military. By insisting on a public accounting of Jason scientists' moral choices, SftP hoped both to draw attention to the military-science relationship and to raise the costs for those who wished to accept funding from the military. In the exchanges between the radicals and their mainly liberal targets, the very different visions of how each group understood the role of the individual scientist, how ideas were related to political systems, and what features of scientific investigation each sought to protect are revealed.

THE RADICAL CHALLENGE TO JASON SCIENTISTS

The Jason Program was created in 1958 to streamline weapons development by offering scientists the opportunity to explore basic and applied physics and engineering problems of a military nature. To attract the very best scientists in the nation, the program offered participants generous salaries and nearly unlimited funds, the prestige of working on problems of national importance in conjunction with the nation's military leaders,
and summer workshops in vacation areas such as Woods Hole, Massachusetts. Salaries and grants went directly to individual scientists rather than to universities, turning them into private contractors who carried out their Jason work separately from their university-based work. Thus, Jason scientists were essentially private contractors to the IDA, which was itself a contractor to the Department of Defense.

Before 1967, few people outside the scientific community knew much about the Jason Program. That changed when student and antiwar activists, largely at the instigation of Students for a Democratic Society (SDS), turned their attention to examining how their own universities were involved in the war in Vietnam. In an effort that overlapped with the campaign to prevent Dow Chemical from recruiting on campus, activists called on their institutions to sever all ties to the IDA. As I noted in earlier chapters, because Jason recruited elite scientists, it is not surprising that anti-IDA demonstrations and actions took place at elite science institutions, including Cal Tech, the University of Chicago, Columbia, Berkeley, Stanford, and Princeton.\(^{41}\)

To publicize their demands, most early anti-IDA activists used methods that included petitions, demonstrations, letters to administrators, and the distribution of documentation about the IDA's presence on campus. Anti-IDA activists were especially critical of the program's secrecy requirements, arguing that the interests of neither the students nor of other scientists were served, since IDA research was not publicly disseminated knowledge. Their other complaint was by now a familiar one: that participants and their defenders did not take into account the kind of knowledge the IDA produced and the purposes for which it was used. This, activists charged, was contra the spirit of science.\(^{42}\)

SftP's campaign against the Jason scientists began in 1971, following the New York Times' publication of what became known as the "Pentagon Papers." These documents, originally titled "The History of U.S. Decision-Making Process in Vietnam," were commissioned by Secretary of Defense Robert McNamara.\(^{43}\) They showed what the historian John Morton Blum calls a "depressing record of mistaken assumptions, prevarications, and flawed judgments that characterized governmental decisions about U.S. involvement in Vietnam.\(^{44}\)

Included in the Pentagon Papers was evidence of forty-seven Jason scientists' participation in the development of what was called "the electronic fence." In 1966, having condemned the Johnson administration's plans for more saturation bombing in Vietnam, Jason scientists proposed that the area stretching from the demilitarized zone between North and South Vietnam into the Laotian panhandle be covered with new kinds of weapons that could be set off by movement, heat, or light. Among them were new and more deadly land mines, acoustic sensors, and nail bombs.\(^{45}\) The weapons were designed for what the Jason scientists envisioned as a long-term, open-ended war of "cat and mouse" rather than conventional, battle-based warfare.\(^{46}\) The Jason scientists hoped that this system would help cut the supply lines between North and South Vietnam, thereby ending the war more quickly.

In early 1972, SftP published a long booklet titled Science against the People. It documented the history of the Jason Program, and contained descriptions of Jason scientists' views about their work, gleaned from "encounters" with them. These "encounters" took the form of scheduled interviews and letters. SftP's descriptions of the Jason scientists' views were interspersed with comments about what was "generally believed" about these scientists. The descriptions do not present a flattering portrait, in most cases making them appear as yes-men concerned with their own power rather than self-aware and thoughtful people. One key theme that SftP emphasized was that the Jason scientists were not politically disinterested, but allowed their political views to shape their decisions about weapons. SftP asserted that Jason scientists were often part of research groups that included political scientists, government officials, and other "interested" parties. For example, of one scientist they wrote: "He admits that politics was not a small and incidental part of their considerations."\(^{47}\)

Another, they argued, had stated that "the human element—the personal relations between the adviser and advisee [the Jason scientist and the government]—is very important to the success of the advising process; yet he continually stressed that the advising was strictly objective, non-political, and related only to technical evaluations."\(^{48}\) In a description of a professor of physics at Berkeley, SftP wrote, "At a faculty meeting during the time of the Cambodian invasion, in 1970, [the professor] was heard to comment, 'Why is everyone getting so upset about a little war?'"\(^{49}\) In response to a later letter to this scientist asking him to comment on the notes that the interviewer had taken before the material was published, the scientist responded, "This report contains several misrepresentations and/or quotations out of context. More significantly, it violates the conditions under which I agreed to meet with SftP, which were that I would listen and you people would talk."\(^{50}\)

In a separate chapter titled "Why They Do It," SftP articulated, and presented its refutations of, what it thought were the main motivations of Jason scientists: (1) Jason's work must be harmless because it is so often ignored; (2) liberal scientists' advice counterbalances that of the government; (3) Jason provides accurate information that is not available elsewhere; (4) Jason scientists do not fully realize the consequences of their work; and (5) they are seduced by the "thrill of making history."\(^{51}\)

SftP's activities were paralleled in Europe in the summers of 1971 and 1972 by student activists in Italy and France. These campaigns were led by younger scientists who, like their American counterparts, wanted the
United States to withdraw from Vietnam. Jason scientists at the Varenna, Italy, summer school on the history of physics and the Trieste (Italy) International Physics Symposium were prevented from speaking by disruptive activists who heckled and demanded that they speak about their involvement in Jason rather than about technical issues. In June 1972, the physicist Murray Gell-Mann was chased from the Collège de France, and the University of California–Berkeley physicist Charles Townes was prevented from speaking at two engagements in Rome. French activists created a poster that simply said “War Scientists” and listed the names of thirty-nine members of Jason. The poster was circulated by French, Italian, and American radical scientists, including StfP. Among those listed was the chair of the Union of Concerned Scientists, Henry Kendall.

JASON SCIENTISTS RESPOND TO CRITICS

Jason scientists explained their participation in the program in three ways. First, they asserted that their motives were moral because they were acting as public servants who hoped to give the government more sound advice than it otherwise would have received from scientists on staff in the government. Second, some argued that StfP’s attempt to pressure them to end their research was antithetical to free speech and academic freedom. Finally, some argued that they delivered facts, not policies, to the government and therefore they were not responsible for the uses made of their ideas. Their responses reveal that, like CNI members, they believed that individual choice to carry out public duty should drive scientists’ engagement in public political issues and that scientists could and should act as conduits for information dissemination. This stood in stark contrast to the model of scientist as servant of the people that StfP put forth and also contradicted StfP’s claim that it was not possible to provide “apolitical advice.”

Altruistic Motivations

For many of the Jason scientists, the criticisms that StfP and European activists made were based on a failure to understand that participation in the Jason Program was a form of public service. Providing advice to the government would help avoid bad political decision making, analogous, they argued, to the kind of technical advice that Manhattan Project scientists had given in the spirit of ending the war. By pruning out bad projects based on bad science, one helped the government. As Sidney Drell argued, “The [Hans] Bethe[s], the [Wolfgang] Panofskys, [Eugene] Wigners, [Edward] Tellers, who got drawn into the war ... came in and they had a task to build radar and to build an atomic bomb—and they did it. We in a sense were following in their footsteps ... we were intellectually recruited by them ... we saw them as our models.” The physicist Charles Townes echoed Drell: “We had a lot of men over there [Vietnam] who were fighting, whose lives were in danger, and we ought to push on trying to see that there are right policies.” He framed his role as a military advisor in the same terms: “I felt a good deal of pressure to help the people who were there [Vietnam]. The country [United States] was involved, and it would be best to try and stay in and give good advice.” Their critics did not understand these motivations, some Jason scientists argued, because they were ignorant and irrational. Townes felt that activists were unable to differentiate, politically or morally, among different kinds of involvement with government or business. For activists, he said, “anything to do with General Motors was anathema.” He saw them as unreasonably characterizing universities and corporations in the broadest terms, unable to see complexities.

Jason members viewed their service to the government as a bulwark against irrationality and muddled thinking, in much the same way that CNI and SfP thought that the provision of accurate information to the public would improve political decision making. Yet, at a time when trust in the government was eroding, the Jason scientists’ allegiance to government service could easily be construed as complicity in a flawed system.

Free Speech versus Totalitarianism

Some Jason scientists considered the pressure to end their association with Jason to be totalitarian. Just as their motivations were shaped by an earlier generation, they saw their actions in terms of political conflicts that that generation had experienced. The attempts to force them to avoid studying military issues were the same as the security investigations of the 1950s that attempted to discredit scientists for their real or imagined political associations. Malvin Ruderman, for example, felt that there were “false accusations” made against him, including assertions that he had used the funds from Jason to engage in military research, which he had no chance to refute. “Very personal attacks have used underhanded innuendo,” he said, “and entirely false accusations that dwarf the excesses of McCarthyism of two decades ago.” Similarly, Richard Garwin wrote that the Jason attacks signified that “freedom itself is under fire.”

What is under attack is the right of an individual, in his own time, away from his regular job, to engage in legal activity to which some individuals are opposed. Make no mistake—this is precisely the same right that allows some of us to be Democrats, some to be Republicans,
some to be Christians, some to be Jews, some to be agnostics, some to favor the liberalization of abortion, some to do research on brain disease, and some to attempt to forbid it as invading the seat of the soul. The techniques used by these protestors are those of blackmail and coercion. Having failed with words and arguments, even lies, they attempt to deny to completely uninvolved individuals [students] access to work or education until these individuals force the Jason members to resign. . . . [T]his is a powerful tactic, extortion.28

In the fall of 1972, the liberal magazine Christianity and Crisis published a symposium of the arguments of Frank Baldwin, an assistant professor of history at Columbia, William J. McGill, the president of Columbia University, and the Columbia physicists Garwin and Ruderman concerning the morality of working for Jason. Baldwin argued that weapons and warfare techniques of the electronic battlefield were "widely regarded as criminal under Nuremberg precedents." In response to McGill, who argued that the university "had no business attempting to dictate the political or private activities of its professors," Baldwin argued that McGill had inaccurately characterized Jason scientists' activities. "By classifying the Jason activity as a 'private activity,' a very doubtful characterization, and exempting the actions of Jason members from criticism, it becomes improper to challenge the behavior of faculty members who helped devise a system of indiscriminate killing—even when that role is documented by indisputable Government records and the technology is viewable on the nightly news."29 The Jason scientists Garwin and Ruderman did not consider their work to be in the service of totalitarianism or genocide, nor did they agree with Baldwin's and Stiff's argument that all scientists' work had been captured by powerful economic and political interest groups. Instead, they saw scientists in the classical liberal sense: as autonomous individuals pursuing what interested them—in this case, service to the nation.

Delivering Facts, Not Policies

Jason scientists shared the view that scientific ideas are independent of the character of their producers or sponsors. Although they did not always agree with the government's use of research, they did not see themselves as responsible for how their ideas were used, given that their advice was based on scientific fact, not political preference. For example, Drell argued that "many people . . . who got involved in the electronic barrier [between North and South Vietnam] went in with the best of motives, and saw some of the technical contributions they made used in ways that they felt quite unhappy about. But it's inevitable you know. The laws of physics are fixed. The laws of politics change."30 The distinction between the technical and the moral is evident, too, in discussions about weapons that were abstracted from their effects on human beings. Critics had charged that scientists were coldly rational, avoiding the moral implications of technical decisions. For the Jason scientist, this distinction was essential, for it prevented facts from being distorted by ideologies and political preferences, and clearly distinguished the areas in which the scientist had expertise (science) and in which he did not (politics).

Not all Jason scientists held the same views, of course, and some left the program because they were unconvinced of the effectiveness and morality of some of the Jason group's work. Richard Blankenbecler, for example, joined the Jason Program for some of the same reasons that other Jason scientists did. He hoped to "save lives and do something for my country." He found the problems on which he worked as a Jason member, particularly the feasibility of the ABM system, interesting and challenging. But while working on the electronic fence he began to question government leaders' motivations for U.S. involvement in Vietnam and the effectiveness of the electronic fence. The work he was doing with the Jason Program seemed less and less congruent with his desire to help the country.31 He came to the conclusion that the study of "fixed barriers" (the electronic fence) and the use of "climate control to try to affect things [the war] . . . just led to a senseless loss of life."32 He left the Jason Program in 1967. In the 1970s, he found more satisfying ways to use his skills to assist the government: he helped develop a system for detecting clandestine nuclear tests, and served on an arms control panel under the directorship of Wolfgang Panofsky. For Blankenbecler, these projects were satisfying because they served to reduce the number of weapons, not increase them.33

Jason scientists' responses to critics were based on liberal political principles. They typically distinguished between scientific knowledge and its contexts of production and use; they understood scientists to be autonomous individuals whose political and scientific tastes, not states or economic systems, determined the research they did and its relationship to systems of power; and they treated science as a social system that was autonomous from the state. Their choices about what kind of research to engage in also came from a sense of political duty, much as members of CNI argued that their actions were based on duty. In asserting individualism, scientists preserved the credibility of the knowledge they produced, whether in the service of government or not. Since individualism is also a highly valued quality in liberal politics—individual people, not larger systems, are the key actors—claims of independence served as the means to indicate and defend the scientific and political morality of participants.
Although SfP's activities at the AAAS meetings and their critiques of Jason scientists were highly visible, much of what the group did was less dramatic and confrontational. Their activities represented attempts to articulate a “science by the people,” and different ways of challenging the liberal and personal responsibility models of activism.

In 1973, SfP organized a trip to China to examine science under communism. The trip included ten members from five different SfP chapters. They visited research institutes, universities, agricultural communes, and factories, observing and discussing how scientific projects were devised and implemented. Inspired by the Maoist model of investing ordinary individuals rather than formally educated people with the power to create scientific solutions and ideas, members of the China trip group wrote *China: Science Walks on Two Legs*. The book detailed the Chinese model and laid out the basis of how it might be applied in the United States. In Brian Martin's terms, they were advocating “science by the people.”

Participation in professional meetings continued to be an important activity for the group throughout the early and mid-1970s. They staffed informational tables, held sessions, and petitioned the leadership of the AAAS, the National Science Teachers Conference, the American Chemical Society, the American Physical Society, and other conferences. For example, for the 1973 AAAS meeting in Mexico City, the group wrote *AAAS in Mexico: Por Qué Science and Technology in Latin America* and *Los Nuevos Conquistadores*. Both publications addressed the relationship between capitalism, science, and inequality in Mexico and Central America. The failure of the Green Revolution, the activities and intentions of the Ford and Rockefeller Foundations in Central America, and science and political repression were among the subjects covered in other booklets distributed at the meetings and through mailings.

Another important translocal activity was a campaign against racist sociobiology. The campaign was sparked by the publication of two articles that asserted that intelligence was heritable and largely unchangeable. In 1969, the educational psychologist Arthur Jensen published an article in the *Harvard Educational Review* arguing that boosting I.Q., and thus scholastic achievement, was impossible. He concluded that it was a waste of time and money to spend money on schools and special programs for those with low I.Q.s. Two years later, the comparative psychologist Richard Herrnstein published “I.Q.” in the *Atlantic*. Echoing Jensen's arguments, he asserted that Americans should simply accept the reality of fixed, unequal levels of intelligence. To be sure, those who were not naturally blessed with intelligence should be treated with kindness and compassion, but it was hopeless, Herrnstein argued, to change nature. Jensen's article was highly controversial; dozens of newspapers and magazines published comments and essays in support of or in opposition to Jensen's claims. In March 1970, the SfP member Richard Lewontin published a refutation of Jensen's claims in the *Bulletin of the Atomic Scientists*, in which he asserted that Jensen's solution, to encourage black children to capitalize on the skills they had, was “so clearly at variance with the present egalitarian consensus and so clearly smacks of racist elitism, whatever its merit or motivation, that very careful analysis of the argument is in order.” He concluded that Jensen had no evidence to support the claim that black-white differences on intelligence tests were caused by heritable, unchangeable genetic differences. Lewontin and other members of SfP wrote and spoke out against other sociobiological arguments in the early 1970s, and in 1975, after the publication of the biologist E. O. Wilson's *Sociobiology: The New Synthesis*, Lewontin and other biologists, some of whom were members of SfP, formed the Sociobiology Study Group (SSG). The SSG was one of the major players in the debates over sociobiology in the 1970s, publishing reports and articles, presenting papers, writing letters to editors, and speaking at conferences. In 1983, the group became a nonprofit organization called the Council for Responsible Genetics, a staffed nonprofit organization that fosters public debate about the social, ethical, and environmental implications of genetic technologies. Among those who have been active in the group are former members of SfP.

**Inventing "Science for the People" at the Local Level**

By early 1970, local SfP chapters began to take on issues that were generated by the interests of local members and by the places in which they lived and worked. The group had a national and especially regional focus as well, but these local groups were incubators and experiments in how to do “science for the people.” SfP had approximately ten chapters in 1970 and approximately five in 1975, but here I use the New York, Chicago, and Boston groups to illuminate how “science for the people” was carried out in practice.

**New York City: Scientists as Workers and the Politics of Domination**

The New York City SfP was one of the least cohesive local groups, with at least three overlapping clusters of SfP activists who did not always know one another personally. Three major issues for the New York chap-
ter between 1970 and 1974, the heyday of STP, were the war in Vietnam, the use of technology for political oppression, and the labor process.

In 1971, STP shared office space at the Dolphin Center, on East Fourteenth Street in New York City's East Village, with six other activist groups. These groups included the Committee for Social Responsibility in Engineering (CSRE) and Computer People for Peace (CPP). CPP, formed in 1968, was a New York-based but nationally networked group of activists who worked in the computer industry. CSRE, a radical engineering group, was formed in 1971 by electrical engineers at Brookhaven Laboratories on Long Island to oppose the war in Vietnam and redirect engineering away from military applications. Many New York STP activities overlapped with those of CPP and CSRE.

As in other cities, such as Boston, Chicago, and San Francisco, where the antiwar movement was especially strong, in New York there was a palpable feeling that revolutionary changes were possible. As Barbara Ehrenreich, one of the founders of the health activist group Health/Pac, a group with which STP membership overlapped, recalled, "I wish I could convey to you some of the excitement of those days, the swirl of people and activity coming through Health/Pac." She goes on to describe the lively interactions and projects that went on among worker's groups, the Black Panther Party, medical professionals, and feminist organizers.

For example, STP, CPP, and CSRE organized a three-session "counter-conference" timed to coincide with the 1971 meeting of the Institute of Electrical and Electronics Engineers (IEEE) in New York City. Speakers included Seymour Melman, a Columbia University industrial engineer whose research interests included converting industry to peacetime activities, William Davidson, a Haverford College physicist and Quaker peace activist who was a former president of the SSRS, and Victor Paschkis, a Columbia University engineer and the main organizer of SSRS. Paschkis spoke about the old problem that had confounded SSRS activists: how to predict secondary effects of technological advances. A second CPP/STP/CSRE campaign involved challenging corporations that produced technologies used in war or for political repression. IBM, Polaroid, Honeywell, and Litton Industries were among the major targets. Anti-IBM/Polaroid actions were intended to pressure those companies to cease supplying technologies used to track nonwhites in South Africa. IBM's computers tracked nonwhites' whereabouts through a national database, and Polaroid's ID-2 system created the passbooks that every nonwhite South African had to carry or else face imprisonment. The campaign against the company included demonstrations, a letter-writing project, and efforts to pressure shareholders in both companies.

At a New York City conference, the three New York groups verbally attacked the Polaroid Corporation president and engineer Edwin Land. They saw him as the "human embodiment of the Polaroid Corporation," and thus responsible for the political repression of black South Africans.

Land, they argued, was responsible for the "misuse of our technology for political oppression," but not merely because he was the head of Polaroid. They refused to "separate his role as a scientist from his role as the father of a repressive corporation." His actions were not simply the actions of an immoral person, they argued, but those of a scientist who headed a profit-making firm that helped perpetuate political oppression. This method of personal attack had something in common with the old SRSS strategy of encouraging each person to be true to an inner, morally good self, for it treated personal actions as important sources of political change. Unlike liberals, who encouraged one another to take responsibility for the outcomes of scientific work but were rarely critical of individual scientists, some STP activists used shame as a political weapon.

CPP and STP jointly printed and nationally distributed seven thousand copies of their thirty-page booklet Data Banks: Privacy and Repression, in which they explained how computers were used to track individuals' whereabouts and their spending patterns, and to provide national and international police with information about suspected political agitators. Their concerns with technology and privacy also found more local expression. STP and CPP worked closely with a group of Mt. Sinai Hospital health care workers to publish analyses of the costs and benefits for patients of computerized health care. Among the publications were Health: Big Business for Computers. The group predicted that in the future, patient information would be bought, sold, and exchanged without patients' knowledge.

Somewhat disconnected from the CPP/CSRE/STP network was another group of New York City STP activists whose main interest was in labor politics. They began a campaign to organize faculty and staff at City University of New York (CUNY). Many of the members of this network were also members of the New York New University Conference (NUC), formed in May 1968 in Chicago as a way for young faculty and professionals to continue the kind of work they had done as students in the SDS. STP members Bart Myers and Bill Zimmerman of the Brooklyn College Department of Physics, authors of the "Science for the People" manifesto that appeared in Liberation in 1972, were leaders of the organizing campaign. In 1973, the CUNY STP network wrote a pamphlet, widely circulated among STP locals and graduate students, in which they argued that although scientists had once considered themselves invulnerable to unemployment because of the supposedly rare and valuable skills that they possessed, those days were over. The fiscal crisis of the state, they argued, had "forced reduction in support for scientific research, resulting in the 'proletarianization' of science." Although scientists still had "significantly
higher salaries and better working conditions than the vast majority of workers,” the “integration of more technology into production has placed their self-image into contradiction with the realities of their working conditions.” Their pamphlet urged scientists to strengthen their position as workers. Science done in “an anti-elitist manner and by careful and imaginative choice of research” could in some way “serve the people” by contributing to a movement in which human values rose above monetary values.41

The New York StfP chapter’s concerns were shaped as much by the local political networks and activities in the city as they were by ideological perspectives that were shared by StfP members in other chapters. In Chicago, too, “science for the people” was shaped by local concerns as well as a shared ideology.

*Chicago: Science for Vietnam and the Politics of Epistemology*

Like the New York City group, Chicago StfP had a membership that overlapped with the NUC. Medical Aid for Indochina, which provided medical supplies and expertise to North Vietnam and National Liberation Front zones in South Vietnam, was active in Chicago, and it was with this group that much of the Chicago StfP membership overlapped between 1970 and 1972. StfP became more focused on the needs of Vietnamese scientists specifically after a trip to Vietnam by the StfP member Richard Levens, a professor in the Department of Biophysics at the University of Chicago.

Levens had long been involved in the struggles of third-world people. In 1970, Levens visited Hanoi as part of a delegation of scientists sponsored by the World Federation of Scientific Workers. In Vietnam, Levens visited laboratories and schools and met with Vietnamese scientists. He found that as a result of the war, the North Vietnamese were in dire need of material assistance for scientific research. These scientists were also unaware of the latest research because they lacked textbooks and had only limited means of communication with scientists outside Vietnam. In the summer of 1971, Chicago-area and other StfP members met and decided to create Science for Vietnam (SFV).42 Afterward, NUC, SFV, and Chicago StfP became an interlocking group and set of activities.

One of the Chicago group’s SFV projects was a study of the effects of herbicides on plants and animals in Vietnam. The SFV project provided a detailed history of Operation Ranch Hand, the official U.S. defoliation program in Vietnam. Begun in 1962, the program increased dramatically in the following years and reached a peak in 1967. Other biologists were also concerned with this issue. When SFV began its investigation, the National Academy of Sciences (NAS) had just published a report that concluded that herbicides were not, in the long run, harmful to people, plants, or animals.43 SFV’s study was of the extent to which plants and animals could recover from herbicides. Contra the NAS study, they concluded that there had been significant and long-term damage caused by the herbicides. The U.S. government ignored SFV’s findings. As a result, many SFV scientists revived the moral individualist policy of noncooperation with the government that Norbert Weiner and the SSRS had pioneered after World War II. They refused to share research with the government or to serve on government committees.47

SFV had a much longer-term project as well. The group worked with Vietnamese scientists to develop curricula and research programs so that biology would not “follow the traditional sequence that characterized spontaneous development of biology in the more industrial capitalist societies.” Rather, they sought to develop it in a more “integrated fashion with systematics, evolution, distribution, physiology and ecology, etc. studied together” and with an “understanding of environments as dynamic and constituted by the organisms within them, not fixed and external.”48 Rather than considering individual units, such as genes or people, as passive subjects shaped by a fixed economic, political, or biological “environment,” this view was based on the idea that reductionism was a poor way to understand human or organismic processes.49 To further their goal of assisting Vietnamese scientists, they gathered science textbooks, course outlines, lab manuals, and scientific and medical supplies and sent them to Vietnamese scientists and doctors. They also raised money to buy and ship other items needed by North Vietnamese researchers.

The idea of providing supplies to Vietnamese scientists quickly spread to other cities, and within four months of the group’s founding in Chicago, there were at least a dozen SFV chapters throughout Canada, Europe, and the United States.50 In 1971, SFV conferences were held in Chicago, Boston, Madison, and Berkeley. Participants came from Northwestern University, Windham College, the University of Kansas, the State University of New York–Stony Brook, Indiana University, Berkeley, Washington University, and the University of Montana. The titles of sessions, including “Local War and Counterinsurgency Research” and “The Strategy of People’s Science,” were as likely to be found at any New Left conference as they were unlikely to appear on the program of a professional science conference.51

Separately from SFV and NUC, Chicago StfP and other organizations provided assistance to the Black Panther Party. Chicago StfP raised money for bail and for lawyers for Party members who were accused of crimes. More specific to their role as scientists, they and other locals created a Technical Assistance Program (TAP), designed to teach radical groups means of subverting surveillance systems, to help them acquire
free electricity for clinics and "free schools," and to teach adults science and math that they could then pass on to other poor or oppressed groups. The program was never successful, however. TAP members often ended up doing the work themselves, rather than being able to teach others how to do it.  

Boston: The New Communism and the Politics of Biology

The Boston group bears extended discussion because it published the magazine *Science for the People*. The magazine symbolized SfP chapter's—or sometimes, the Boston chapter's—ideological perspective. Until 1975, the magazine served as the main organ of interchapter organization, and as a widely circulated subscription magazine, which, at its peak in 1974, had more than four thousand subscribers.

The Boston chapter was riven by conflict between 1970 and 1977, but still managed to engage in innovative actions. The main line of dispute was whether the organization ought to have a specific, formalized set of principles to which members would adhere. No other chapters had formalized principles, nor did the national organization. Britta Fischer and Herb Fox gathered around them a group of people committed to Leninist ideology. From their perspective, the most important task at hand was to form a vanguard party that would support an anti-imperialist revolution in the United States and abroad.

At regional conferences in 1974, 1975, and 1976, SfP chapters in the Northeast gathered together to try to create a set of "Principles of Unity." The discussions were tortured and relentless, but there was little resolution. On the question of whether scientists were part of the working class, SfP members had very different views. One faction, influenced by the October League and calling itself the "Unity Caucus," pushed for the adoption of principles that would encourage the development of "revolutionary science as it is being demonstrated in China, as opposed to pseudo-science." Debating whether to mention capitalism specifically or to discuss the current economic situation or other issues kept the Northeastern chapters busy. Many academic members were uncomfortable with the Caucus's desire for working-class leadership of the group. Others found the Unity Caucus's methods heavy-handed and alienating, while still others were disappointed that their own views were not considered. Ultimately, the group never produced any principles of unity.

Despite the draining effect of the struggles over a formal political position, the Boston chapter worked tirelessly in the early 1970s. Among its activities were organizing factory workers and holding sessions at professional science meetings. An active science teaching subgroup of SfP developed science curricula in partnership with primary and secondary school teachers, held conferences for science teachers to share skills and ideas, and provided models for including analyses of gender, science and war, intelligence testing, and ecology in course materials. The teaching group also held sessions at professional association meetings.  

All SfP chapters were composed mainly of men. In part this reflects women's underrepresentation in science, but it also reflects the inability of women to make feminism a central part of the Boston chapter's (or other chapters') agenda. One of the members of the Boston chapter, Rita Arditti, a researcher in the laboratory of Jonathan Beckwith of the Harvard University School of Public Health, was one of the most vocal feminists in the Boston chapter. In December 1969, Arditti was an organizer of the feminist actions at the AAAS meeting, and an author of the eight demands that women presented to the board that year.

Women's concerns became more central to the Boston chapter as they sought to develop "principles of unity." Six women proposed a set of Principles of Unity that explicitly identified gender as an important concern: "Science for the People is an organization of women and men in science... who are part of an international struggle for freedom from exploitation based on class, sex, or race." Like other members of the group, they argued against "the myth that science is neutral." They insisted that science and technology were "ideological and practical weapons used by the existing power structure both here and abroad, to justify racist and sexist oppression."  

Like advocates of a class-based analysis of science, the feminists in SfP were part of a broader network of activists. In conjunction with other Boston-based women scientists, feminist activists from the NUC, and women's health groups, some of the women from SfP anonymously published and distributed a hundred-page document titled *How Harvard Rules Women*. Although it mainly focused on the subordinate role of women in academic and social life at Harvard, it also included a section on science. Like the articles in *Science for the People*, it focused on the politics of women's biology. In the view of medical professionals and researchers, they argued, "women's capacity for childbirth is their biology," making them no more than "machines for reproduction."  

In spite of the interest in feminism, some activists felt that gender was only discussed as a token nod to SfP's professed commitment to fight sexism, but not taken seriously by the group. Rita Arditti, who had left Beckwith's lab and was an assistant professor of biology at Boston University in 1971, had become more involved in the women's movement. The overlap between her professional activity in science and her involvement in women's activism made it "impossible not to reflect about women in science, my own personal experience... how hard it was to try to be..."
a woman scientist.” Yet participating in StfP did not provide the opportunity to explore those issues in the way Arditti would have liked. As a member of StfP, she recalled, she “started to feel the difference . . . between having to struggle to be heard about women’s issues in mixed groups, the difference being that in an only women’s group, they were [so] much more open to these ideas, it was possible to think and move forward much quicker.” Although she never experienced any overt opposition, Arditti never felt that the majority of the group shared her concerns. Focusing on feminism in StfP “was a constant struggle . . . To bring a feminist perspective was always a risky thing to do . . . and one had to be on the defensive . . . to keep pounding [in] that it was meaningful. It was like they wanted something on women because they knew they had to have something on women, but it had to be limited to what they wanted and it had to be something that they [the editorial collective] liked.”

The problems with integrating feminism into the group were not exclusive to the Boston chapter; they confronted most progressive groups of the period that were not devoted to feminism exclusively. For example, a member of the New York chapter who was both the chapter’s only woman and its only technical worker, wrote to the men in the group, “I have a feeling that many of you are comfortable with your sexism, but hip enough to mask its more overt expression, even from yourselves. Intellectually you can accept women as equals, but something inside you hesitates, and we’re treated with a bit of deference and a bit of contempt.”

Feminists in StfP had a more visible presence on the pages of the magazine after 1974. Despite the earlier calls for analyses of sexism, racism, and elitism in the organization, some women felt that there had been very little attention to sexism. They formed two new subgroups: one acted as a support group for women, addressing practical issues of sexism in the workplace and in StfP; the other served as a political base for socialist feminists who were interested in new forms of political action. In 1974, feminists edited a special issue of Science for the People on women’s concerns. That issue raised questions about the relationship between political ideology and women’s biology, the politics of women’s sexual response, and the problems that women scientists faced at work, among other topics. Although Science for the People published more articles about women and science in the next decade, feminists’ concerns were never central to StfP.

In addition to publishing the group’s magazine, the Boston chapter played an important role in defining StfP’s national identity because it was involved in several highly visible public debates. One was through the actions of Jonathan Beckwith, whose Harvard genetics laboratory isolated and photographed operons, the elements of a gene that control its reproduction in E. coli, and Joel Shapiro, a researcher who shared in that discovery. When they announced their findings to the press, the research group used the opportunity to make a political point. They argued that like all scientific research, their work would not necessarily lead to positive benefits. Indeed, there was a strong possibility that their work “might let loose more evil than good.” Two months later, Shapiro quit science to undertake political work outside of science. Shapiro cited three reasons for his defection: he believed that the work he did was likely to be put to “evil” use by the government and corporations; he did not want to participate in a system that did not “allow ‘the people’ to have a say in deciding what work scientists did,” and he felt that the most important problems the country faced, including health care and pollution, needed “political solutions rather than scientific ones.”

Reactions to Shapiro’s decision were varied. The Science reporter James K. Glassman commented, “[E]ven the older, more conservative scientists will have to agree that Shapiro has made a large sacrifice in an effort to get the word across.” Other scientists were outraged over the suggestion that Shapiro’s action was a sacrifice. Leaving was a “privilege and an opportunity,” and it was a privilege and an opportunity for Shapiro to do what “he most desired.” The Nobelist Salvador Luria, one of the initiators of the 1965 New York Times statement opposing the use of herbicides in Vietnam and a participant in the MIT March 4 events, however, was highly supportive. He said it was “important that there are scientists like Shapiro who point out the misapplications of science.”

Other Chapter Activities

Local chapters in the Midwest and the West developed their own projects. Like the Chicago, New York, and Boston groups, their activities were shaped by local political conditions, other organizations, and the concerns of a few very active people. For example, in 1973 the Madison, Wisconsin, group published The AMRC Papers: An Indictment of the Army Mathematics Research Center. In it they documented the types of military research that had been performed at the campus’s Army Mathematics Research Center (AMRC) in the 1960s. The document was written in support of sentence mitigation for Karl Armstrong, a Madison man who bombed what he thought was the AMRC in April 1970 because he believed that the center produced weapons for use in Vietnam. The blast killed a young researcher, Robert Fassnacht, and Armstrong was tried and convicted of second degree murder. The Madison group also made a study of new treatments for tuberculosis and began a sustainable forestry project.

The Ann Arbor, Michigan, group was active on farming and farm-worker issues and on more general issues about the politics of biology. It
formed Science for Nicaragua (SFN) out of the Ohio StfP working group Farm Labor Organizing Committee (FLOC). In 1982, the biologist John Vandermeer and others from FLOC reorganized as the Alternative Agriculture Group (AAG). With an international group of biologists and agricultural researchers, AAG worked, and continues to work, with third-world farmers and scientists to develop sustainable research programs; the group has been especially active in Mexico and Nicaragua. It sponsored country-specific programs based on the SFN model. In the SFN program, AAG provided information, equipment, training, and personnel to Nicaraguan scientists and farmers. Unlike SFN activists, SFN activists worked closely with the users of scientific ideas and products in order to coproduce practices and knowledge that are scientifically sound, take advantage of indigenous knowledge and materials, and are sustainable over the long term. Like other former StfP scientists involved in science-politics organizations, Vandermeer wrote and spoke about the politics of alternative agriculture, ecology, and genetic reductionism. He also co-edited The Nicaragua Reader. Other activities of the Ann Arbor group included the publication of Biology as a Social Weapon.

CHALLENGING THE IDEAL OF THE SCIENTIFIC COMMUNITY

In 1975, StfP was a vibrant network of chapters and individuals who were making their mark on local, national, and international debates. They were doing so not in an isolated fashion but, more so than either the SSRS or CNL, through contestations and cooperation with other groups who supported or opposed their perspectives. Their actions were taking place in professional settings, such as professional associations, in factories and industry where some had gone to work, and in academic settings. They were also working with people outside those settings, defending health clinics, organizing workers, and other activities. Like the SSRS, StfP was more a network than a bureaucratic organization, and one of the things it created was activists, who took their views and skills to new settings.

StfP collapsed as a formal organization in the late 1980s. The magazine ceased publication in 1989, and the office was reduced to little more than a closet in a church basement. On the face of it, if we consider organizational survival to be the sine qua non of social movement success, StfP was a failure. But if we think of social movement organizations as means to generate more activity, rather than to sustain or reproduce themselves, then StfP's legacy, like that of CNL and the SSRS, is in the networks and ideas that it produced. Following the rivers and brooks that constitute the development and dispersion of the intersections of Marxism, feminism, the New Left, and science reveals that the people who were involved in StfP were less involved in overthrowing capitalism than they were in building relationships with other activists, both scientists and nonscientists. This activity resulted in the simultaneous empowerment of nonscientists and the weakening of the idea that science ought to be segregated from the concerns of ordinary people. The material changes, up through 1975, are difficult to enumerate because of the diversity of people in the group, but I hope that I have identified some of the key activities in which group members were involved (necessarily leaving out many more). Although StfP collapsed in 1989, ceasing to publish Science for the People, its former participants did not simply return to their pre-1969 lives. Instead, as I have suggested, they carried out some of the ideals and practices of StfP in new organizational settings. This fluid, changing, project-based work was, in Brian Martin's terms, "science for the people" in the hope of creating "science in a citizen-shaped world." By not constraining scientists to work on one kind of activity in one kind of setting, and by critically engaging their peers, StfP generated new questions and new answers to how science and politics might be linked, and often forcefully made other scientists consider such questions and answers as well.

Two of the distinctive features of StfP were its organizational structure and its emphasis on direct action and intellectual critique. The localism, loose-knit relationships, and project-based work of radicals in science meant that StfP could experiment with new practices and ideas that were generated by the mix of people in the group at the time, the historical moment, and the local context. To a great extent, one could argue that this was the case for scientists in the 1940s and 1950s. Yet very quickly those groups settled into a formal organizational system that did not allow for much exploration of interactions with other groups, other than information provision. StfP's range of interactions were far more varied. Such dynamism is itself, I argue, a force of destabilization of the idea that scientists formed a distinctive political or moral group.

In exposing the rifts among scientists and extending the range of moral and political factors that shaped knowledge production and use, StfP made difficult to treat scientific knowledge as distinct from the power relations that produced it. StfP never claimed that there could be no such thing as truth about the natural world. It claimed that in the search for understanding the patterns that structure the natural world, power relationships shape the choice of problems and their interpretation. StfP did not suggest that politics ought to substitute for appeal to the material world and the patterns that scientists had identified in it, rather than the values and beliefs of scientists, their sponsors, and those who used science ought to be included in debates about the veracity and social value of scientific claims.
Science, more than any other profession or way of knowing, is based on the idea that participants may not come up with the same answers, but they operate with common assumptions and techniques. Radicals’ ideology focused on the inseparability of science from other parts of social life. The form of their organizations followed. Sustaining ongoing and fluid interactions with other groups and individuals who were not professional scientists became a priority. In this way, the form of the organization marked a more fluid boundary between science and other social practices. More frequent contact with nonscientists on issues of mutual concern resulted in efforts to undermine the expert/nonexpert dichotomy, as well as in a radical break with the idea of science as a community of like-minded, “autonomous” people.

More concretely, what was radical about the form of knowledge production that Marxist and feminist biologists advocated was that they rejected the idea that scientific facts can be separated from the values and beliefs of the political system in which they are created. Most scientists were aware of this, but the standard response had always been to argue that one should try to avoid “contamination” by nonscientific values (or run the risk of repeating what the Nazis had done by separating Aryan and Jewish science) and encourage organized skepticism to correct any errors. Radical scientists and feminist scientists took a very different view: explicate the ways in which values and power—especially sources “outside” the scientific community—shape science, and then use organized skepticism to verify findings. This method challenged what many considered the basis of the political strength of science: the production of politically neutral facts by a closed community. Not only could organized skepticism be used to undermine an argument about scientific groups (i.e., logic, mathematical soundness, connections to other credible knowledge, ability to solve important problems), it could be used to expose an opponent’s argument as based on political ideas, not technical skill and reason.

StP’s questions and answers were not the only matters of importance: the group’s activists, progeny, and networks symbolized and concretized relationships between parties and actions that had previously been separate. By symbolize I do not mean symbolic as opposed to real change. The creative labor of reorganizing cultural symbols and, in the process, power constitutes social change. By creating new forms of organization, people join or separate logics of thought and action in new ways, activity that is, in and of itself, socially important (regardless of how well the organizations succeed in accomplishing their explicit goals).

In 1975, the possibilities for scientists’ engagement with moral and political issues were vastly more diverse than they had been in 1947. They could choose to operate inside or outside professional associations, at their places of work, in the classroom or outside; to provide information