

SCIENCE FOR THE PEOPLE

REVIEW: CUCKOO'S NEST
SCIENTIFIC CONCEPTUALIZATION
REPORT FROM AAAS MEETINGS

CAUTION



**RADIOACTIVE
MATERIALS**

NUCLEAR POWER: WHO NEEDS IT?

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SCIENCE FOR THE PEOPLE: the organization

Science for the People is an organization of people involved or interested in science and technology-related issues, whose activities are directed at 1) exposing the class control of science and technology, 2) organizing campaigns which criticize, challenge and propose alternatives to the uses of science and technology, and, 3) developing a political strategy by which people in the technical strata can ally with other progressive forces in society.

SftP opposes the ideologies of sexism, racism, elitism, and their practice, and holds an anti-imperialist world-view. Membership in SftP is defined as subscribing to *SftP* and/or actively participating in local SftP activities. (Chapters and contacts are listed on the inside back cover.)

SCIENCE FOR THE PEOPLE: the magazine

SftP is published bimonthly and is intended not only for members, but also for a broad readership within the technical strata and for all others interested in a progressive-radical view on science and technology. The goals of *SftP* are to elucidate the role of science and technology in society, to enrich the political consciousness of readers, and to stimulate participation in concrete political activities.

The subscriber circulation of *SftP* is about 1,500, the total circulation about 4,000. The content of *SftP* derives largely from the experiences and interests of people who read the magazine. In seeking to "rely on the people", we urge everyone both to contribute to the magazine themselves and to encourage others to do the same. We are particularly interested in having articles written, discussed, or at least reviewed, collectively, when circumstances permit. For legal purposes, *Science for the People* is incorporated. *Science for the People* is available in microfilm from Xerox University Microfilms, 300 North Zeeb Rd., Ann Arbor, Mich. 48106, (313) 761-4700.

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letters



The review of Edward O. Wilson's *Sociobiology: The New Synthesis* in the November issue appears to commit the error of which it accuses Wilson: letting political assumptions dictate scientific conclusions.

The review begins with a vague and indiscriminate repudiation of the "tired theories", beginning with Darwinism, which assert that man, like other animals, is a product of natural selection. Admittedly, a theory can become tired after 125 (actually, 116) years.*But think how fatigued the theory of divine creation must have seemed to Darwin. If the Genetic Engineering Group is in the market for a fresh, new theory, they might try sociobiology for fast, fast, fast relief. It also happens to be valid.

The group then proceeds to engage in guilt by association, lumping Wilson with Ardrey, Lorenz, John D. Rockefeller I, Jensen, Shockley, and last but not least, the dependably odious Nazis. One could be equally nasty and reel off the names of some notorious environmentalists, such as B.F. Skinner, Milton Friedman, and Spiro Agnew, or argue that the Nazis' programs, although based upon a (fallacious) assumption of genetic superiority, were essentially environmentalist in the atrocious distortions they tried to impose on the human psyche. But it should suffice to cite Wilson's explicit repudiations of the excesses of Ardrey (p. 29) and Lorenz (*New York Times Magazine*, Oct. 12).

Granted, scientific data can be abused. But facts about human nature are open to a variety of political interpretations. Fascists can point to evidence for inborn traits to their liking, but so can humanists. Kropotkin, for example, compiled examples of animal cooperation in his advocacy of communism. Likewise, capitalists as well as communists have endorsed, respectively, Skinner's and Pavlov's arguments for the plasticity of human nature. Sociobiology advocates a less plastic view of human nature, but certainly one which can accept any of the past or present political systems that societies have developed. As Wilson says (*New York Times Magazine* article):

I am aware that the very notion of genes controlling behavior in human beings is scandalous to some scholars. They are quick to project the following scenario: Genetic determinism will lead to support for the status quo and continued social injustice. Seldom is the equally plausible scenario considered: Environmentalism will lead to support for authoritarian mind control and worse injustice.

The reviewers are oblivious to this danger. Since they are sure they do not like many of the human behavior patterns which biologists suggest are partly inherited, they make an initial sally against "the unproven assumption that genes for behavior exist." Two paragraphs later, however, they grudgingly admit that "there are genetic components to behavior." But in their zeal to discredit the components that do not suit their fancy, they ignore the careful, specific arguments mustered to explain, say, the evolution of homosexuality. Similarly, they dismiss the notion of an inherited predisposition to alcoholism despite well-

known evidence to the contrary. And they make no mention of the conclusions that men are generally more aggressive than women, and that women generally raise children — behavioral sex differences discovered by employing the method duly sanctioned by the reviewers of observing "universals in human behavior or . . . generalities throughout animal societies."

Defeated on the level of evolutionary theory and unwilling to argue about the heritability of specific behavior patterns, the reviewers indulge in flagrant distortions of Wilson's meaning. They write: ". . . institutions such as slavery are made to seem natural in human societies because of their 'universal' existence in the biological kingdom." Wilson draws analogies — not homologies — from slavery in ants to systems of human specialization of roles. It would be absurd to claim that slavery, or even sociality, is universal in the "biological kingdom," and it is preposterous to accuse Wilson of doing so.

In another facile flight of fancy, the Group claims that "for Wilson, what exists is adaptive, what is adaptive is good, therefore what exists is good." What he actually does is to attack (*New York Times Magazine* article):

the naturalist fallacy of ethics, which uncritically concludes that what is, should be . . . When any genetic basis is demonstrated, it cannot be used to justify a continuing practice in present and future societies. . . . For example, the tendency under certain conditions to conduct warfare against competing groups might have been advantageous to our Neolithic ancestors, but it could lead to global suicide now.

Wilson goes on to suggest that the cultural changes that man will be called upon to make in the future will be smoother if we know something about man's prehistory (which the reviewers debunk as "speculative") and his inherent strengths and weaknesses.

Undaunted, the reviewers resort to one of those "well, you know what I mean" arguments. They "suspect that human biological universals are to be discovered more in the generalities of eating, excreting and sleeping." In other words, scientists should stick to investigating less controversial behavior patterns. (Excretion was a particularly ingenious suggestion for a research topic; has any of the reviewers the strength of his own convictions?) Why blaze such innocuous trails? Perhaps because Genetic Engineering Group, most of whom are Harvard scientists occupying social positions remarkably similar to that in which they accuse Wilson of being ensconced, fear ideological disruptions of the status quo more than he does.

If we fear to examine human nature, we shall leave the field to those who harbor no such qualms, and scientific investigation will be just as powerful but will not be guided by humanistic concerns. Moreover, to attack the whole of modern evolutionary theory, which is what sociobiology represents, is patently foolish and will only serve to discredit the causes, however desirable, with which such naysayers are associated.

It must be admitted that scientists do not always bring us knowledge about ourselves which is unmitigated flattery. But

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NUCLEAR POWER:

WHO NEEDS IT?

The following is the text of a pamphlet "Nuclear Power, Why Do We Need It? . . ." produced by SftP members in the San Francisco Bay Area. The pamphlet was prepared for wide distribution in California as part of the campaign there to slow the introduction of nuclear power and force the industry to deal with unresolved safety questions. The immediate focus of the campaign is the Nuclear Safeguards Initiative, a referendum which will appear on the California ballot June 8, as Proposition 15 (see box below). Some elaborating footnotes and boxes have been added.

Predicting Energy Demand

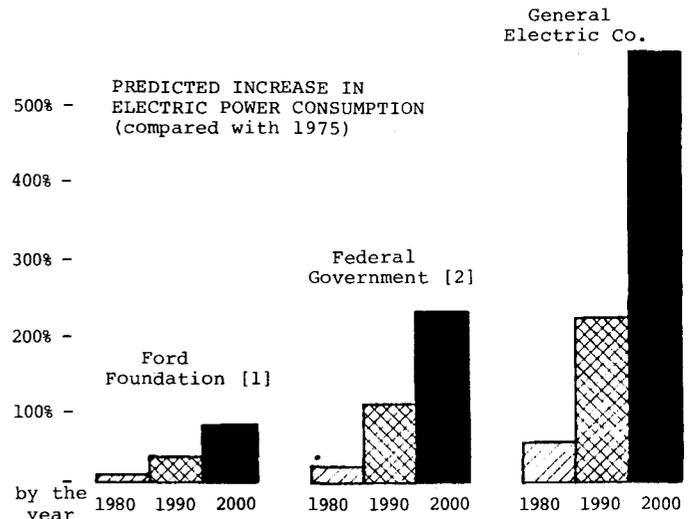
We are told that many more nuclear power plants will be needed to meet the growing needs of America's future, especially for the production of electrical energy. Several groups of "experts" have calculated how much additional energy we will be needing in the years ahead. Let's look at some of their predictions.

The graphs below show the results of three different studies on how much *additional electric power* the U.S. will need to provide in the decades to come, compared to the amount used in 1975.

All three predictions show an increased need; but it is remarkable how widely they differ about how big it will be. Depending on which prediction we decide to trust, we will reach very different conclusions about how much we need to have nuclear power plants built. Why can't the experts agree in their predictions? The reason is that some assumptions have to be made in any prediction of future events; these assumptions are subjectively chosen and represent the "expert's" bias. This is what we are seeing here.

The General Electric Company (G.E.) prediction *assumes* that energy use will continue to grow in the future as it has in the past — at 7.5% per year. The government's "Project Independence" prediction assumes instead that the price of oil remains at \$11 per barrel and that some energy conservation measures are undertaken. The Ford Foundation prediction assumes a larger effort at energy conservation with a leveling off of energy usage after the year 2000.

These are all very establishment organizations; nothing radical can be expected from any of them. Yet their chosen predictions for the energy future of the U.S. are



so different. The chief lesson to be learned from this is that there is nothing inevitable about future energy needs. *Energy growth is a matter of public policy*, not a law of science. The numbers represented by the graphs do not make predictions about the actual future. They are policy recommendations for the present and future organization of the energy industry and the economy as a whole.

Let's look more closely. Going back over many years, we find that in the past the actual consumption of electrical power did increase at a rate of about 7.5% each year. This is the number the experts from G.E. and Westinghouse use to predict rapidly rising needs in the future. As the dominant manufacturers of electrical equipment (for the home, for business, and for the electric generating plants themselves) the directors and large shareholders of these two giant corporations have profited greatly from this historically growing market and would naturally want to see this continue.

Much of this earlier rapid expansion was due to the aggressive sales policies of these companies, together with the utilities that shared in this growing market. As one G.E. official explained to a group of utility managers, "Kilowatt-hour sales growth is a most significant determinant of profitability, second only to a corresponding increase in rates."

Remember all the ads urging people to "Live Better Electrically"? They pushed one appliance after another into the home and urged industry to use more electricity by offering lower rates to big users. When fuel oils (used to generate electrical power) were cheaper, wastefulness was pushed as a status symbol for the consumer, while it earned larger corporate profits. Then, when the energy costs rose sharply, these big companies not only made the people pay the full burden in increased prices, but they even had the gall to blame us for our "wasteful habits."

But some significant changes are already taking place in the country's energy use pattern. The total electric power output remained constant in 1974 and increased by only 2% in 1975. (The utilities, which had predicted a 15% rise over this two year period, have been busily revising their statistical predictions.) The cancerous growth patterns of the past subsided readily under the impact of higher prices and a little attention to sensible conservation measures. These considerations lie behind the alternative predictions mentioned earlier — those from the federal government and from the Ford Foundation. They differ from each other mainly in how vigorously the ideas of conservation are pursued. Again, this makes clear that any statements about our future

SOME DEFINITIONS

Nuclear power, or "atomic" power, uses uranium or plutonium fuels in a reactor where a fission chain-reaction generates heat to power a conventional steam turbine-electrical generating system. After it is mined, uranium is **enriched**, meaning the concentration of fissionable U-235 isotope is increased relative to that of U-238, in order to make useable fuel. This is a very expensive (energy consuming) process, traditionally involving gaseous diffusion. **Plutonium**, also a nuclear fuel, is produced during the operation of uranium-fueled reactors from the U-238 isotope — which is much more abundant than the U-235 — by neutron capture. Thus reprocessing the highly radioactive spent-fuel from a reactor allows isolation of the plutonium by-product for fabrication into fuel elements. **Breeder reactors** are specially designed to produce plutonium as well as generate power. Plutonium is one of the most poisonous substances known; and with several pounds of plutonium (or enriched uranium) a devastating bomb can be built.

The **kilowatt-hour (kwh)** is a unit of energy. One 100-watt bulb burning for 10 hours consumes 1 kwh of electrical energy. In 1975 the U.S. consumed a total of two trillion kwh (2,000,000,000,000 kwh) of electrical energy. Large nuclear or fossil fuel power generating plants have power outputs ranging 300 - 2,000 megawatts (thousands of kilowatt-hours/hour).

energy needs are very dependent on how wasteful our economic system is to be.

For another illustration of how policy choices sit at the top of the energy picture, consider the development of alternative energy technologies — solar power, geothermal power, and others. The energy companies and their friends in government tell us that progress in these new areas is slow. These are the same people who decided years ago to commit research money to nuclear power and to ignore development of these alternatives. With a lot of pressure on it, the federal government has recently started to increase its funding of solar energy research (\$4 million in 1973, \$45 million in 1975, and \$116 million requested for 1977). But the biggest chunk of tax money is still being poured into the nuclear power program (\$991 million requested for 1977), in recognition of the policy priorities that were set many years ago.

The Real Costs of Nuclear Power

The nuclear power industry is now facing serious economic troubles. As *Business Week* describes it, "rapidly rising costs for everything from fuel to construction have lately thrown the economics of nuclear power, once an unchallenged selling point, into question." The cost of building a nuclear power plant, typically around \$1 billion, has risen 400% in the last five years. Last year these soaring costs forced electric utilities to cancel 20 previous orders for new nuclear power plants and to postpone over 120 others.

While some studies show that nuclear generated electric power is still less expensive than that generated from coal, it is expected that this advantage will last only until the early or mid 1980's. What this standard accounting fails to consider is that nuclear power's past and present economic advantage relies heavily on a massive program of government subsidies. Over the years the government has spent tens of billions of taxpayers' dollars to subsidize the nuclear power industry. These subsidies have gone into uranium exploration and mining, uranium enrichment, research and development of nuclear reactor technology, and transportation and storage of wastes.

Let's examine uranium enrichment. The uranium ore must be treated in a very expensive enrichment process before it can be used as fuel in a reactor. This is now done in huge plants built at government expense for this purpose; and thus the government determined "market price" of this fuel is kept artificially low, at our expense. Incidentally, in this process the enrichment plants consume 2% of all the country's electric power. Now, private industry is asking to take over and expand this fuel enrichment business — *provided* that the government will give them an \$8 billion guarantee to insure that they will profit from the investment. This new subsidy is called the Nuclear Fuel Assurance Act.

Another subsidy area close at hand concerns fuel reprocessing. Spent fuel from a nuclear reactor is to be reprocessed to recover plutonium for use as new fuel.

This technique is supposed to ease the shortage of uranium ore as a primary fuel as well as to alleviate the waste disposal problem. General Electric Company recently tried to build a reprocessing plant — at a cost of \$80 million — but it was a failure. The safety hazards were much worse than had been anticipated. We expect that industry will force the government to take over this problem, again letting the taxpayers pay the bills to protect the industry's profits.

In the future, we anticipate the government being called in to take over or dismantle nuclear power plants that no longer run profitably, and to bail out (Lockheed-style) the most profit-pinched corporations.*

Thus, if the energy industry is allowed to have its way, the public will be squeezed plenty to pay — through higher prices or through government subsidies — whatever it takes to protect the industry's billion dollar investments and to continue its high rates of profit. In addition, we must remember what happened to the price of uranium at the time of the "energy crunch": while the price of oil quadrupled, the price of uranium rose from \$7 per pound in 1973 to \$40 per pound today. This happened because the people who control the price of oil also control the price of uranium. Exxon and Gulf, two of the biggest names in oil, are also two of the biggest names in the nuclear industry. (We'll talk more about this later.) With monopolistic control of the various sources of energy, the choice between nuclear power and other sources — on economic grounds — will be no choice at all. [3]

*This is already happening. The N.Y. State Power Authority has begun to purchase unprofitable reactors from the Consolidated Edison Co.

NUCLEAR ENRICHMENT ASSOCIATES

A consortium of corporations starring the Bechtel Corporation, a California-based construction and energy-engineering company, and Goodyear Rubber, has put together a new venture called Nuclear Enrichment Associates (NEA) which plans to build a \$5.7 billion uranium enrichment plant in Alabama. In its effort to take over the government's monopoly in enrichment, NEA presented a proposal which closely resembles the provision of the Nuclear Fuel Assurance Act, proposed a short time later by the Ford Administration. The Act is such a give-away — it guarantees a fat profit for NEA while the government takes on an \$8 billion risk — that even the Government Accounting Office (GAO), the auditing arm of Congress, rejected it as "not acceptable."

The audacity of the Bechtel hustle is perhaps partly explained by the participation in its top management of several former Nixon officials: Caspar Weinberger (past Secretary of HEW), George Schultz (past Secretary of the Treasury), Robert Hollingsworth (former Director of AEC).

The Hazards of Nuclear Power

Serious questions have been raised about the safety of nuclear power:

1. An accident in the operation of a nuclear power plant could lead to the release of vast amounts of deadly radioactivity.* Its harm can extend to future generations.
2. The spent fuel from a nuclear power plant must be reprocessed into new useful fuel or stored permanently as waste. The harmful radioactivity of some of these wastes lasts for thousands of years and must be stored so that it cannot leak out to reach plants, animals, and people.
3. Large amounts of uranium and plutonium will be present in an expanded nuclear power industry — in reactors, in reprocessing plants, and in transport between them. This raises the fear that some might be stolen to make an atomic bomb; and one "solution" to this problem is the creation of an extensive national police force, with the severe social consequences that implies.

Those who speak for the nuclear industry and the government agencies claim that extensive safety precautions are taken and that nobody has ever been killed by radioactivity from a reactor. They admit that they do not yet have a satisfactory plan for the disposal of radioactive wastes (all their previous plans have had to be given up) but they ask us to have faith in the ingenuity of their technology to solve this problem.

Critics of the nuclear establishment, among them many highly respected independent scientists, point out that a number of safety plans have not yet been tested and a number of "half-disaster" accidents have already occurred in operating nuclear power plants.[4] The history of the nuclear safety debate records numerous instances where the government and industry lied or suppressed the truth about such accidents and the risks involved. The few "inside" experts who dared to disagree with the official line on safety questions have found themselves out of a job.

In this confusing atmosphere, with experts so strongly at odds with one another, what is the ordinary person to believe? The Nuclear Safeguards Initiative offers a sensible approach: have our elected representatives in the state legislature pass on the safety of the nuclear power plants, acting on the widest spectrum of technical

*Nuclear reactors present a unique safety problem because the generation of power cannot simply be "turned off" as in a fossil fueled power plant (by shutting off the fuel supply). There are two reasons for this: 1) terminating the chain reaction requires a rather complex mechanical operation within the reactor itself — placing the "control rods" in position to extinguish neutron flux. If the electromechanical systems are disabled, the reaction may not be stoppable. 2) More serious, even if the chain reaction is stopped, the generation of heat continues for some time, produced by the intense short-lived radioactivity which the reactor has created. A breakdown in the system for transferring heat out of the reactor e.g. a failure in a large pipe weld or a pump, would result in an abrupt temperature rise within the reactor. This could lead in short order to a "melt-down" of the reactor core, intense pressure within the reactor vessel, and the almost certain release of lethal, radioactive reactor material to the atmosphere and environs.

advice they can assemble. If the public is going to have to run some risk, then we ought to make that choice through informed legislative process, rather than letting the captains of industry force that choice upon us. Anyway, if the nuclear reactors are as safe as their proponents claim, then there should be no problem about having the legislature certify them.

This makes the whole debate seem so simple; but this is exactly where it begins to pinch the big business interests. They simply can't stand the idea that popular will should interfere with their "freedom" to make profits by whatever means they choose. Behind all the talk about energy, dollars and safety lies the real question: Who is to be in control?

The Forces Pushing Nuclear Power

The campaign to defeat the Nuclear Safeguards Initiative and push ahead rapidly with nuclear power expansion is based upon a series of threats: The safety requirements of the initiative will cause a "nuclear shutdown" in California; this will increase our dependence on foreign oil, will raise utility bills, will lead to more air pollution from burning coal, will cripple California industry and create massive unemployment. Who are these people who tell us our choices are between nuclear energy, coal energy, or unemployment?

A tremendous million-dollar publicity campaign to promote nuclear energy has been launched by the Atomic Industrial Forum (AIF), the public relations arm of the nuclear power industry.* Its strategy (exposed in *Win* magazine, March 13, 1975) is a multi-media Madison Avenue blitz to sell the "economic benefits of nuclear power." The plan, financed by the nuclear manufacturers and utility companies, has as its principal "targets": "Governmental Decision Makers," "Influential Organizations" (bankers, labor unions, educators and major civic groups are mentioned) and "Other Interested Segments of the Public" (like business and professional associations.) "In addition," the AIF strategy plan states, "ways must be found to overcome the major media's reluctance to carry positive stories about nuclear power."

*"The nation's nuclear industries are preparing a war chest of up to \$7 million to block efforts by nuclear opponents around the country to halt atomic power plant construction, according to industry officials. The bulk of the money will come from utilities and other nuclear-related industries . . . and will be directed at California where the first showdown vote on the nuclear issue comes up June 8. John Simpson, chairman of the Atomic Industrial Forum, a trade association with 625 members including 56 utilities, said plans to raise the money haven't been completed . . . Nuclear industry spokesmen have said passage of Proposition 15 would stop atomic power plant construction in California almost immediately and could lead to halts in other states. California, Oregon and Colorado have antinuclear proposals on their ballot this year and signatures are being gathered for similar proposals in 12 other states."

— *Boston Globe*, April 4, 1976.

THE ATOMIC-INDUSTRIAL COMPLEX

The Atomic Energy Commission (AEC) was the federal agency created in 1946 to manage the government's wartime system of atomic research and production. It recently had its name changed to ERDA — Energy Research and Development Agency. From the beginning it was set up to protect the special interests of big business and the military, with minimum interference from the general public.

The huge factories for producing and using the nuclear fuel, built at government expense, were operated by established big businesses — G.E., Westinghouse, DuPont, Union Carbide, etc. — on a "cost-plus" contract basis by which the government guaranteed these companies a handsome profit. Labor relations within the atomic industry were "stabilized" by a special government board empowered to prevent "interruption" of production during labor disputes.

The AEC was run by a five-member Commission which established policy, and a General Manager who carried out these policies. It is instructive to look at who some of these top AEC officials were. **Lewis L. Strauss**, a successful Wall Street investment banker, was on the Commission 1946-50; he then resigned from the AEC to become financial advisor for the Rockefeller brothers, then returned as AEC Chairman in 1953.

John A. McCone, a West Coast industrialist — in aircraft and shipbuilding and in partnership with Bechtel Corp. which is now a leading firm in nuclear power plant construction — was AEC Chairman 1958-60. After leaving the AEC he was Director of the CIA for several years. He now sits on the boards of directors of Standard Oil Co. of California, United California Bank, IT&T.

Marion W. Boyer, a vice president of Standard Oil Co. of N.J. (now EXXON), was AEC General Manager 1950-53; and then he returned to a top position at his old company.

Kenneth D. Nichols, a former Major General in the army, was AEC General Manager 1953-55; afterwards he was chairman of Westinghouse International Power Co., a director of Detroit Edison Co., and others.

Robert E. Hollingsworth, AEC General Manager 1964-74, is now working for Bechtel Corp. Bechtel is at the head of the industrial combine that is trying to take over the uranium enrichment plants, with an \$8 billion government guarantee to protect their private investment (see box).

There are many other examples of members of the Commission who came directly from companies in the nuclear power business or who ended up on those companies' payrolls after leaving the AEC.

Who belongs to the AIF? The board of directors of the AIF consists of presidents and vice-presidents of such companies as:

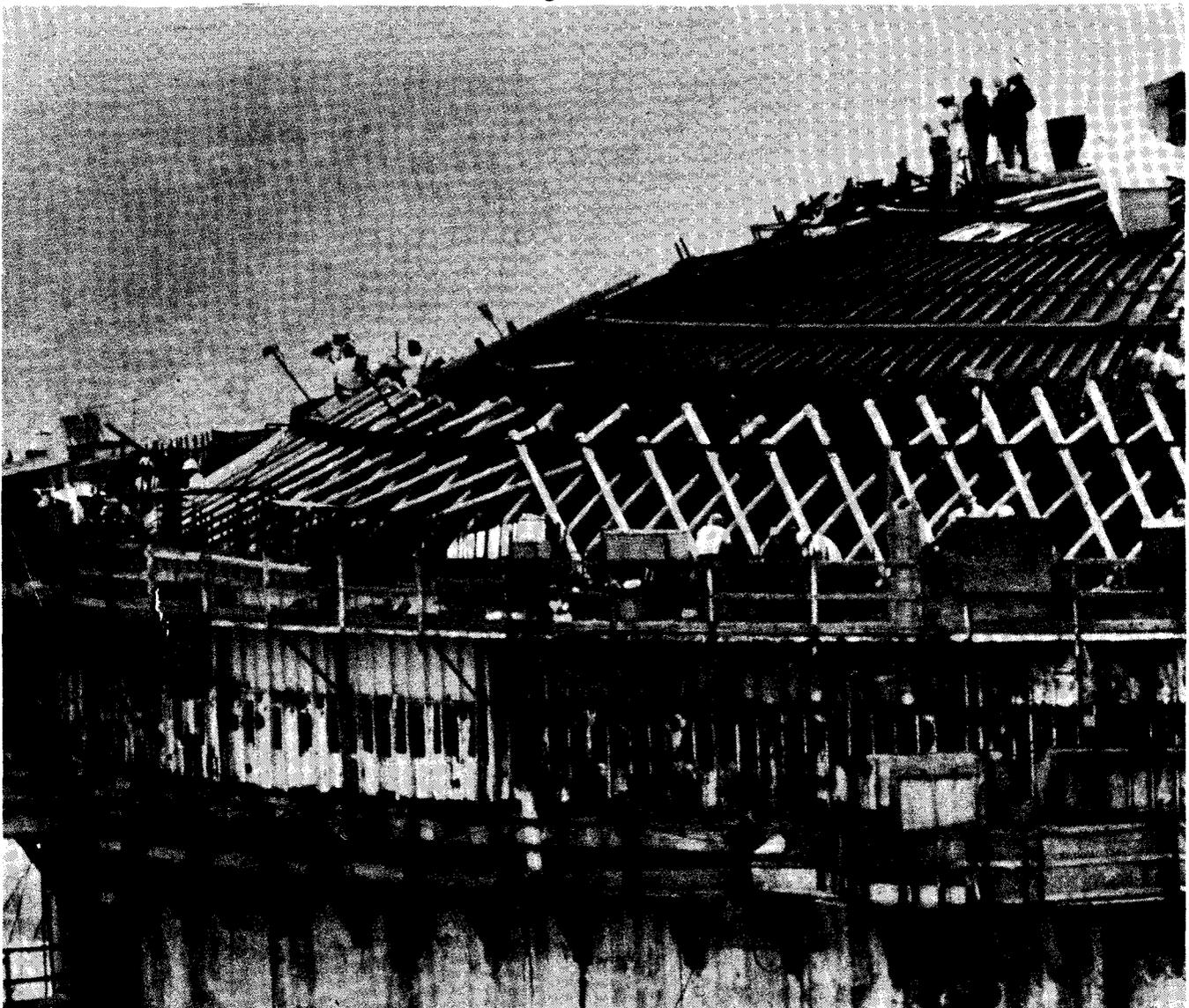
Exxon Nuclear, General Electric, Westinghouse, Kerr-McGee, General Atomic, Union Carbide, Chase Manhattan Bank, First National City Bank, El Paso Natural Gas, Southern California Edison, Pacific Gas & Electric, Combustion Engineering, Bechtel, . . .

In other words, the people running the AIF are the top management of the country's largest banks, utilities, nuclear industries and oil companies. Oil companies?

Oil companies are not just oil companies any more: they are energy companies with vast holdings in coal and uranium reserves. The seven major oil companies now control 30% of the coal reserves in the country and from 50% to 80% of the uranium reserves. The AIF is a propaganda arm of a vast *energy monopoly*. AIF members are not from independent "free enterprising"

industries, banks and private utilities. They are linked together in a great many ways to control not only nuclear energy, but all forms of energy — from the extraction of the raw materials (coal, oil, uranium) to the processing and distribution of the energy as electricity, fuel, oil, gasoline.

The bonds which tie the oil-coal-nuclear industry with banks and utilities have been described in detail in a few books. [5] Members of the boards of directors of oil companies are also on the boards of directors of banks and utilities. Ten major oil companies have over forty interlocking directorships with major banks. In turn, forty-nine of the largest banks have interlocking directorships with thirty-six of the major utilities. Banks are often the largest stockholders in the utilities and the energy companies; they also loan large amounts to these enterprises. In return, the utilities place interest free deposits in banks. Oil companies deposit huge employee pension funds in banks, and huge amounts of utility and energy industry profits go to banks in the form of



CONNECTIONS

Exxon Nuclear is a subsidiary of Exxon (or Standard Oil of New Jersey, part of the Rockefeller empire), the single largest supplier of oil and gas on the North American continent. Exxon has major uranium deposits, is fabricating nuclear fuels, and has assembled the largest block of coal reserves in the nation. It has an interlocking directorship with the **Chase Manhattan Bank**. The **Chase Manhattan** and the **First National City Bank** have directors who are also directors of **G.E.** and **Westinghouse**. **Chase Manhattan Bank** has 1.3 million shares of common stock and 8000 shares of preferred stock in **Southern California Edison**. The **First National City Bank** owns 8.2 percent of one class of preferred stock in **Southern California Edison** and has an interlocking directorship with **El Paso Natural Gas Company**. **El Paso** has its Employee Savings deposited in the **First National City Bank**. One of **El Paso's** biggest customers is **Pacific Gas & Electric**, accounting for 23.6% of the company's gas revenues. The Mellon Foundation (Gulf Oil) owns one million dollars in bonds and notes and 27,032 shares of **Southern California Edison**. The Mellon family bank, Mellon National Bank & Trust Co., has interlocking directorships with Consolidated Coal, **G.E.**, **Westinghouse** and **El Paso Natural Gas**. **General Atomic** is a subsidiary of Gulf and the Mellon Foundation and the Mellon Bank have large investments in **Union Carbide**. [5]

This data comes from Ridgeway's books. AIF members are set in bold.

dividends and interest. Thus, the banks want the utilities and industries to be profitable. The industries and utilities depend on the banks. Everything is vice-versa. And they all get together on their boards of directors to decide how it is to be done.

This great interwoven energy cartel is against the Nuclear Safeguards Initiative. This monopoly is pushing for the rapid expansion of nuclear power. They will control the prices and the distribution of energy. Just as with oil and gas, they can establish high rates and guarantee high profits by creating false crises when their demands for capital are not met. With their vast control over resources, both material and financial, they can eliminate or subdue competition such as the municipal utilities. They have already used the so-called oil crisis to raise rates and cripple the smaller independent oil refineries and distributors.

When the public asks for some control over what this cartel does to the environment, they squash such moves with threats of unemployment and by manipulating the congress. All the while, of course, they advertise how ecological they are! When the public tries to learn the basic information about our energy resources in order to try to make sane energy policy, these big businessmen

bury it or distort it to their own advantage. When the public asks for some control over safety, as in the Nuclear Safeguards Initiative, the energy monopoly responds with threats of coal pollution and unemployment.

The U.S. *does* have an energy problem. The bankers and the industrialists of the energy monopoly got us into this mess by putting their profits ahead of our needs for rational energy planning and our needs for employment. Now they are pushing for speedy nuclear energy as the "solution"; and they threaten us with economic disaster if we don't go along with them. *The Energy Monopoly is against the Nuclear Safeguards Initiative*. This is an important fight for them; and it is an important fight for us.

In California, the AIF-energy monopoly's campaign is being managed by a special group set up to defeat the Nuclear Safeguards Initiative. Deceptively named "Citizens for Jobs & Energy," this group is working through sophisticated public relations experts to sway the voters into supporting the energy monopoly's program.

"Citizens for Jobs & Energy" will run a very expensive campaign against the Safeguards Initiative. (For example, they took a full page ad in the March 1 issue of *Newsweek* to offer their brand of the truth.) Who is supplying their money?

Southern California Edison (\$50,000); Pacific Gas & Electric (\$25,000); Westinghouse (\$25,000); Bechtel (\$25,000); General Electric (\$20,000); General Atomic (\$10,000); Standard Oil of California (\$7,000).

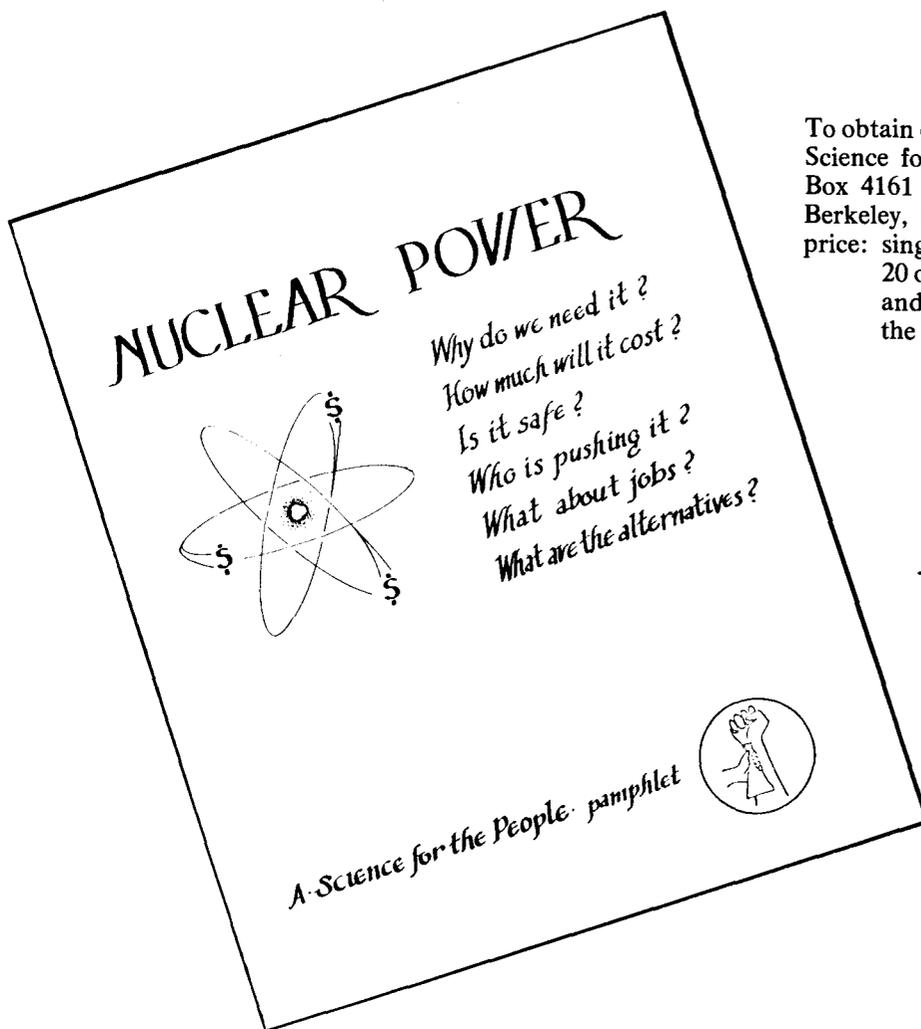
And these figures are only as of January first. There is plenty more money where that came from; and you can be sure that if the polls show that the Nuclear Safeguards Initiative has a chance of winning, there will be a tidal wave of propaganda from the energy monopoly trying to defeat it.

Nuclear Power and the Jobs Swindle

The AIF and "Citizens for Jobs & Energy", speaking for the energy monopoly, tell us that we must have nuclear power to produce more energy and more jobs. They charge that passage of the Nuclear Safeguards Initiative will lead to shortages of energy and massive layoffs.

A standard strategy of big business is to make themselves appear as the protectors of working people and make their critics appear as the enemies of workers. For example, the energy industry has attacked environmentalists in this way. But many people can see through this lie. Leonard Woodcock, president of the United Auto Workers, has said,

"Philosophically, there is no reason to see any conflict between jobs and environmental protection . . . There is a sometimes delicate relationship between working people and environmentalists. This is partly a legacy of years of environmental



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blackmail in which the major corporations have tried to hold workers, or at least their jobs, hostage against the application of environmental regulation.”

Similarly, there is no reason to see any conflict between jobs and nuclear safeguards. To see this, let's look at some data relating energy use and jobs. During the past few decades, the availability of cheap electrical energy has allowed industry to replace labor with machines. A machine cannot go on strike for higher wages, never complains about working conditions, and is much cheaper provided that electricity is cheap.

This preference for capital investment (machinery) over labor can be seen by looking at the employment record of the most energy intensive industries. Presently, *two-thirds* of all the energy used by U.S. industry is consumed by five major industrial groups — primary metals, stone clay and glass, food products, chemicals, and paper products; but these industries employ only *one-fourteenth* of the total U.S. industrial employment. Furthermore, while total employment increased 41% between 1950 and 1971, total employment within these five groups remained constant. Instead of hiring more people, these energy intensive industries have expanded by increasing their capital investments in electricity consuming machines.

As for the energy business itself, it is probably the most capital intensive sector of the nation's economy. From the data published by *Fortune* magazine on the country's top 500 corporations in 1975 we find the following: the top 15 oil (energy) companies tie up a staggering 21% of all the capital but provide a mere 4.5% of all the jobs. (If compared to all U.S. business, not just the top 500, the oil companies' share of total capital is lowered somewhat but their share of total jobs is reduced much more.) Thus, *expansion in the energy producing and energy consuming sectors provides many fewer jobs than expansion in most other areas of the economy.*

Surprisingly, it is found that some of the alternatives to nuclear power open up many more new job opportunities. Consider energy conservation programs — not the kind of conservation that forces people to be cold in winter, but the kind that avoids unnecessary waste, that asks for a rational production of goods designed to meet human needs rather than corporate profit needs. The technology does exist now to produce low energy-consuming automobiles, well insulated houses, cheap and efficient public transportation, large scale recycling, and many commodities that won't wear out so quickly (light bulbs, electric appliances, auto parts and tires, to name just a few.)

Not only do these conservation measures create new jobs directly but they free us from the enormous capital hunger of nuclear power plants. The one billion dollars

spent now to build one nuclear power plant could create many more jobs if spent in construction work aimed at making buildings, both residential and commercial, more efficient in their use of heat energy. Also, the release of capital tied up in nuclear power will create more jobs through increased consumer spending: for example, it takes \$23,000 of consumer spending to create one job in energy production, as compared to only \$10,000 required to create one job in clothing manufacture.*

With so many opportunities for new jobs, more jobs, socially useful jobs, it is painful to see some of the big labor union leaders taking sides with the energy monopoly. George Meany and others of the AFL-CIO hierarchy have joined with the nuclear power industry and the AIF to oppose the Nuclear Safeguards Initiative. Apparently, they have bought the industry's line that speedy nuclear power is necessary to preserve jobs. (Clearly, if nuclear power plant construction were halted *and nothing else was done* with the money saved, then some jobs would be lost. But that is a shortsighted and foolish view, as we have outlined above, since there are many alternatives with even greater job potential.)

In the past few decades, as we have consumed more and more energy, unemployment has steadily risen. Some people still think that the current inflation/recession is due to the energy crisis, but this is only what the energy monopoly wants us to think. Depressions have occurred before, they are deeply rooted in the economic system. In addition, the billions spent in Vietnam and the astronomical sums continually spent on the Pentagon have contributed greatly to inflation and creating unemployment. This was shown by the Public Interest Research Group in Michigan (PIRGIM), a group of economists who compared the number of jobs produced by spending money on the Pentagon with the number of jobs produced in other enterprises which benefit the public. It is simply that we can employ more people, with a given amount of money, to build houses, hospitals and buses than they can to make bombs and missiles. Again we see the contrast between investing in "energy intensive" or "labor intensive" enterprises. The first may create more profits for business, but the second creates more jobs for people.

What was true in the past is true now. Supporting the goals of oil companies, banks and nuclear industries will not mean more jobs, but fewer jobs overall. Basically, employment levels are a matter of social policy. Other countries with strong union and labor politics do not tolerate unemployment. In Sweden, a jobless rate of only 3% nearly cost the Social Democrat Party — in power for 41 years — the 1973 election. Moreover, Sweden, with a

*These last statistics come from a sophisticated "input-output analysis" carried out in 1971. A more dramatic, although less accurate, measure is given by comparing statistics given by *Fortune* magazine in 1975 for the ratio of "Sales per Employee" in various industries. For Petroleum refining it is \$235,339, while for Apparel it is \$21,971. An even more astounding statistic is the *profit per employee*: in 1974 Exxon took \$23,600 in profit for every employee to whom they paid wages or salary!

standard of living comparable to that in the U.S., uses only half as much energy per person. The solution to our unemployment problem, and to our energy problem as well, lies not in following the path laid out by the energy monopoly, but rather in taking new political and economic directions for ourselves.

There is plenty of important work to be done in this country: building better medical care facilities, constructing decent housing for everyone, planning comfortable and efficient mass transportation, taking care of our children and our elderly. It is unbelievable that unemployment exists! We call for jobs in these constructive areas and we call upon unions to organize workers in these sectors. No one should have to accept the destructive, meaningless and exploitative jobs the companies dole out in their search for greater control and profits.

We support the use of energy in liberating people from monotonous and physically exhausting work. However, when we are not in control of these resources, energy is used primarily for other purposes. It is wasted, manipulated for profit, used to create meaningless and destructive devices; it is used to destroy our environment. If we, all of us, take control of the energy, we can insure employment and provide work in areas meaningful to human survival and growth.

Summing Up . . . And Looking Ahead

We have exposed the scare tactics and threats put forward by the energy monopoly in their campaign to defeat the Nuclear Safeguards Initiative — Proposition 15 on the June ballot. We see the energy problem, the escalating costs, the safety hazards, the shortage of jobs and the pollution of our environment as all part of the

A SUMMARY OF THE NUCLEAR SAFEGUARDS INITIATIVE

- 1. Insurance coverage:** Full compensation must be assured for liability to the public in the event of a reactor accident.
- 2. Reactor safety and waste disposal:** Nuclear power plant operators must demonstrate the effectiveness of safety systems and must satisfy all reasonable doubts about waste storage handling. Satisfaction of these requirements to be determined by a 2/3 vote of the California Legislature, within five years.
- 3. An advisory committee:** The State shall provide \$800,000 to fund this committee, to allow broad public participation in examining data and advising the Legislature on the above topics.
- 4. If requirements 1. and 2. are not met, no new nuclear power plants may be built and existing ones will be gradually turned down.**

general mess that the energy monopoly has created in its relentless drive for corporate profits.

We support the initiative for two reasons:

1. It provides some needed safeguards upon any nuclear operations and may help avoid some real disasters.
2. It is an important first step in the direction of having the people take some control over the system of energy production and distribution in this country.

This second item does not appear explicitly on the ballot this year but it is a subject due for much further discussion. A great many people in this country are fed up with the way the energy monopoly has been managing things:

they create phony shortages to raise prices;
they rip off the world's resources and create pollution;
they reap enormous profits even in a business recession;
they provide few jobs and tie up large amounts of capital;
they conceal or distort the truth about energy operations.

The government is powerless; the regulatory agencies in Washington protect the industry more than they protect us; and the anti-trust laws are a farce. Even some establishment politicians have started talking about *the idea of nationalizing the country's energy industry*. We advocate that such a change must also be *fully democratic* in structure to make sure that it will be the majority of people who really benefit.

For a bad example, consider Amtrak. The government took over the railroad passenger service from the businessmen who had milked out all the profits and left a decrepit mess. Then they set up a bureaucracy, unresponsive to the public, which treats its workers and customers with as little regard as does any large corporation.

It would be presumptuous of us to try laying out a detailed plan at this time but we can indicate some general principles that we think should be the basis for democratic nationalization of the U.S. energy industry. The kind of democratic nationalization that we advocate would mean that the industry belongs to the American people and is under their control. Profits would no longer go to the few who now own the corporations; any excess of income over expenses would be used to serve the public, by expanding and improving the industry where most needed. Decisions on energy policy would be made by a body elected democratically and accountable to the public; they would be representatives of the industry's workers and consumers, not bankers, millionaires and the managers of other large corporations.

Some features that we anticipate of a democratically-nationalized energy industry would be:

A. Open Information. Full and truthful information would be given to the public about all matters — energy reserves, costs, safety questions, and all aspects of the policy choices to be considered.

B. Rational Planning. Under democratic control, long range plans can be drawn up to meet the country's needs with a minimum of waste, duplication of facilities and "surprise" shortages.

C. Maximum Benefits from Technology. Released from the profit-motivated control of corporate management, science and technology could expand to create and develop the many alternative energy possibilities that are now neglected by the industry.

D. Health and Environmental Protection. Full recognition of the health hazards faced by workers in the industry and of the environmental hazards that affect us all would come from democratic control. Solving these problems would have a top priority.

E. Employment. As we, the people, gain control over where capital is to be invested for energy production and distribution, we gain control over the creation of jobs. We gain control over the type of jobs, the working conditions, and we increase the possibility that the jobs will be socially useful and rewarding to the worker.

This is a big order. Democratic nationalization of the energy industry will need a lot of careful planning and it will need a hard political fight to make it a reality. The present monopoly owners will not readily surrender their power over us. But it seems that the time is at hand when enough people in this country see what is at stake and are ready to take on this task.

Martin Brown, Pamela FitzGerald,
Merry Goodenough, David Hollenbach,
Jeff Pector, Charles Schwartz,
Joel Swartz

The authors will supply, upon request, a detailed list of references for the material in this pamphlet; send a stamped, addressed envelope to Berkeley SESPA, Box 4161, Berkeley, CA 94704.

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The Energy Policies Project (EPP) was a \$3.5 million, comprehensive analysis of national energy policy options, sponsored by the Ford Foundation. The Advisory Board of the EPP which oversaw contracting for the studies carried out, consisted of about 20 "leaders": half were from industry, the other half were university faculty, lawyers, noted engineers and a Sierra Club director.

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ORGANIZING FOR MassCOSH: OCCUPATIONAL HEALTH

We think it will never happen to us. But every day 300 American workers are killed by their jobs. Every day.

We think we will endure it for the sake of our families. But the chemicals we use at work come home with us to hurt our children. And the tension created by unsafe conditions ruins our home life. Every day.

Every day new materials and work processes create new dangers. In the past years management has used our economic insecurity to cut back health and safety protection.

Today more than ever, it is vital that we know our rights, learn how to recognize the hazards we face, and find methods of mutual support to help us clean up the mess.

That is why this conference is important for every steward, safety committee member, unionist, and worker.

This statement introduced 350 workers and interested people to the first annual conference on Job Health and Safety presented by the Massachusetts Coalition for Occupational Safety and Health (MassCOSH). The conference, coordinated by Urban Planning Aid and others, and sponsored by many labor councils and union locals in Massachusetts, was held at Framingham State College on April 3. MassCOSH is intended to bring together workers and other interested persons in a state-wide organization to work around health and safety issues. The organization will be patterned roughly after other "COSH" groups around the country.

The principal speaker of the morning introductory session was Tony Mazzochi, Legislative Coordinator for the Oil, Chemical and Atomic Workers Union and long-time activist in worker health and safety. Mazzochi stressed the importance of union organizations in the struggle for health and safety in the workplace. "Unorganized workers give their lives to their employer," he said. A collective bargaining agreement which recognizes the right of the union to represent and protect its members is of paramount importance. It gives the union the right to demand that management provide complete information concerning the materials to which workers are exposed and all other hazards of the workplace. It may even mean that local unions are legally responsible for their workers' health and safety.

Another area of critical importance in this struggle is the management tactic of choosing the worker to fit the job, rather than changing the job to make it safe. For

example, women capable of bearing children are barred from certain work situations (exposure to lead in smelting operations) and the possibility of medical and genetic screening of workers is on the horizon. Mazzochi referred to the loss of jobs by the removal of workers from unsafe jobs as the "Trojan Horse" of the health and safety movement.

Two other speakers, Bob Fowler from the International Association of Machinists in San Francisco and Steve Early, formerly a writer for the United Mine Workers' Journal, also participated in the morning session which preceded the first workshops. Steve spoke about his involvement with coal mine health and safety, describing the unbelievably hazardous work conditions and the inability of MESA (the Mining Enforcement and Safety Administration) to force the mine owners to comply with health and safety regulations. He described the more numerous but much safer coal mines of Great Britain, and emphasized that public ownership of the mines in this country is the way to make them safe.

The morning workshop sessions were divided into several topics dealing with health and safety strategies in the workplace, including: safety committees, how to survey your workplace, how to use OSHA, and workers' compensation. It was agreed that much more time could be devoted to all of these areas and future MassCOSH activities will be planned for further discussion.

The afternoon session was opened with a talk, "What your body is telling you — occupational health problems," given by two physicians: Larry Fine from New England Medical Center and Nancy Sprince from Mass. General Hospital. Afternoon workshops dealing with specific health and safety topics were again well attended and discussion was lively. These sessions were on noise, toxic materials, general principles of safety, hazards women face, metal cutting and welding, ventilation, and hazards in hospitals and labs.

A summing-up meeting was held at the end of the day to discuss the day's events and plan an organizing meeting for MassCOSH. It was agreed that the conference had been very successful in bringing together many people across the state interested in the important issues of worker health and safety.

The Science for the People Occupational Health and Safety Group in Boston hopes to be an active participant in MassCOSH, helping to write fact sheets and researching specific workplace hazards.

Richard Youngstrom
Bob Dubrow

POLITICS OF SCIENTIFIC CONCEPTUALIZATION

Regular readers of *Science for the People* are already familiar with some of the ways in which science is inescapably political. And yet there is a more fundamental, less familiar, intrinsic link between science and politics, the implications of which we have barely begun to discern. *In its most basic aspects, the concepts with which scientists organize data and formulate theories, science is inherently political.* Scientific concepts are not simply asymptotic approaches to underlying truth. They are products of a particular social structure and may in turn either reinforce or challenge the social status quo. Not only the daily practice and social use, but also the content of science would be different in a differently organized society. No one interested in building a more humane society can unquestioningly accept present-day science as if it were a given, unable to be radically different.

Origins of New Concepts

Together with many previous generations, we have grown up hearing a series of apocryphal legends from the history of science, myths which seem to indicate that scientific concepts simply follow from the raw data. Copernicus, so the story goes, came to his new understanding by being a better observer of the heavens, Galileo by comparing the rate of fall of objects dropped off the leaning tower of Pisa. Aristotle wrote that men have 32 teeth and women 28, supporting his notion of different female and male natures, whereas Renaissance scientists actually counted and discovered dental parity. Newton's insights presumably followed from his forced apperception of a falling apple. All of these stories are historically spurious, as is their underlying theme.* Science is not purely inductive. As Einstein noted,

There is no inductive method which could lead to the fundamental concepts of physics . . . We now realize with special clarity, how much in error are those theorists who believe that theory comes inductively from experience. [1]

*The data which Copernicus used were in no way significantly superior to Ptolemy's from 1400 years before. As Alexandre Koyre (*The Astronomical Revolution*) points out, the changes in concepts developed almost autonomously from the changes in observational astronomy. Copernicus had access to the more accurate data of Regiomontanus and specifically chose not to use it in his great book, as if to emphasize that what was new was his framework of understanding and not anything empirical. Galileo

Philosophers of science and even some science textbooks increasingly recognize that factors extrinsic to science influence the formulation of scientific concepts. I shall argue that these extrinsic factors are primarily social, though of course expressed by individuals, and that, far from detracting from science, they are the factors potentially most under human control. Thus there is the possibility of a science in which scientists can take responsibility for their concepts, as a product of and contributor toward a society which is controlled and intentionally shaped by all the people in it.

Scientists who recognize that concepts do not simply derive from raw data and even that there may be social influences on the formation of concepts, nevertheless mainly continue to believe that their conclusions are responsive only to the correspondence test — whether or not predicted results are verified by experimentation, whether or not they correspond to external reality. No experiment can be designed, however, to test a proposition outside of a conceptual context or in isolation from all other propositions. Rather all experiments test complex theories with multiple components, many of them simply assumed as commonsensical by the experimenter. There is a large margin of choice in evaluating which component to regard as falsified by any experiment. In the history of science there are many instances of scientists from different

never carried out the famous experiment at Pisa; if anyone did, it was an opponent. Indeed Galileo remarked that he did experiments only "to be able to demonstrate to his opponents the truth of his conclusions . . . , though to satisfy his own mind alone he had never felt it necessary to make any." Aristotle may have miscounted or may have examined only young women before they got their wisdom teeth, however the difference between his science and that of the Renaissance does not lie in the greater inductiveness of the latter. Aristotle was among the most brilliant of empirical observers. In Galileo's remarks about his predecessors, what he most admired about Copernicus was precisely his ability to deny and get beyond the evidence of his senses. As to Newton, the story is reminiscent of some of the sillier cartoon paraphrases of Mae Tse-Tung's "Where Do Correct Ideas Come From?", in which a policeman hitting people over the head is seen as the stimulus to revolutionary social knowledge. People have been oppressed for millenia without necessarily revolting; there is no necessary correlation between the quantity or immediacy of oppression and people's ability to see the oppression and recognize the necessity and possibility of alternatives. Quite other factors enter into that recognition, as into the formation of concepts in science.

historical periods observing the same phenomenon or conducting what would seem to an observer to be the same experiment, but interpreting the results quite differently.* Scientists really use two different tests of any hypothesis: one is the correspondence test, the other is whether the hypothesis makes sense in terms of how the scientist is used to interpreting reality as a whole. This latter interpretative framework derives mainly from the scientist's existence in a particular society.

As a way of coping with external reality, all human beings develop an interpretive framework, a world-view, which explains our situation in that external reality to ourselves. In developing a world-view, the most important component of our reality, the major part of what we need to explain, is social. Because each of our situations, our activities and social environment, is similar to that of other individuals and dissimilar to that of yet others, we develop an outlook and responses in common with some other people, defining us as a social group. Briefly and too simply, as our situation changes, as our society changes or as our position in the society changes, our explanation to ourself changes also.*

All our ideas, whether in science, politics or music, are conditioned by our world-view. They are thus indirectly shaped by our society and our position in it. We develop or accept ideas as they seem to make sense to us in terms of our general explanatory framework. Life in any particular society thus shapes the range of understandings and approaches in any particular realm of thought. As societies change, as world-views change, new ranges of conceptual possibility are opened in every sphere of thought.

Cosmology and World Order

To compensate for the necessarily condensed and postulatory theoretical presentation, let me explore

*One example: Methodologically the experiment which Lavoisier performed to discover oxygen was not new. What was new was the conceptual scheme that enabled him to understand the experiment differently than had his predecessors who had used it to confirm the existence of "dephlogisticated air." T. S. Kuhn refers to "the insufficiency of methodological directives, by themselves, to dictate a unique substantive conclusion, although he would account for the difference in substantive conclusions, mistakenly I think, by factors more internal to science. [1]

*There are many complexities and necessary qualifications which in this short essay must be bypassed. World-views are not usually entirely self-consistent, as the social reality which they explain contains its own contradictory elements. World-views do not change in simple reflex with changes in the society. Often they incorporate elements of an outlook which corresponded to a previous social situation. The most important respect in which Chinese and Cuban approaches to social transformation differ from the earlier Soviet model is in awareness that full socialist consciousness does not automatically follow changes in the economy and social structure. Both of the later revolutions, emphasize intentional changes in people's values and understanding along with engaging people in transforming the social and economic base.



certain aspects of an example of a large-scale change in scientific conceptualization, the Copernican revolution. As might be expected from the preceding argument, the usual textbook accounts of the history are inadequate and significantly misleading. Prior to Copernicus' time, it seemed fairly obvious to people that the earth was the center of the universe and was stationary. Common sense held that, due to its weight, for the earth to move through space would require a continuous external driving force — something out there to keep shoving us. On the other hand the heavens, lacking substance, revolve of their own nature (or later, by their lack of resistance to an initial impetus). Being heavy, the earth would fall to the center of the universe in any case. Further, for the earth to revolve on its axis at the rate necessary to account for the visible movement of the stars rising in the East and setting in the West, centrifugal force would tear it apart, a consideration inapplicable to the even faster revolutions of the weightless heavens. This older, socially determined common sense was supported by empirical evidence. Contained in a finite universe the outermost limits of which were bounded by Heaven, any movement through space by the earth would have to be manifested in changes in the apparent positions of planets and stars, whereas this parallax was not observable.

The older cosmology with its concentric crystalline spheres and its mathematical hypotheses to enable calculation of planetary positions, its epicycles major and

minor, deferents, eccentrics and equants,* embodied a series of presuppositions which were becoming less meaningful in the century or more before Copernicus. It premised strict limits on human knowledge and control, a rigid chain of being, and relative unimportance of human concerns. There was a split model of reality. Humans could know *a priori* the necessarily simple and perfect paths of the stars and planets, as distinct from human inability to understand the “buzzing confusion” on earth, and as distinct from the complex mathematical devices necessary actually to calculate those heavenly paths. (Ptolemy and his successors explicitly denied that the planets could more epicyclically, etc., as it was necessary to imagine them doing in order to calculate.) The heavens, being of different material than the sub-lunar sphere, were thought to be subject to different laws. Change on earth, including social change, was caused primarily by the movement of the stars rather than human effort. There was a fixed hierarchy of value and authority in the universe, from Heaven, through the crystalline spheres, to Earth and below, a fixed position and code of conduct for each group, with man (my first impulse, to substitute “people” for “man,” would clearly be anachronistic) in a crucial intermediate position partaking of both soul and clay.

New World-Views and the Copernican Revolution

As the society changed in fundamental ways, new world-views developed, making possible new perceptions in all fields. The changes occurred first in northern Italy, which is where Copernicus studied. Renaissance society was still hierarchic, of course; however, its former rigidity had been shattered. Wealthy new urban strata had developed with the thirteenth century commercial boom. Growing state centralization and moves by monarchs against the landed feudal nobility created new jobs and possibilities of social mobility for commoners. Medieval criteria of hierarchy were now obscured by competing, though often intermingling, hierarchies, embodying different sets of values. A long economic slump and regression toward sharper class distinctions and obstacles to upward mobility in Copernicus' own lifetime, only enhanced the widespread sense of individual self-fulfillment possible to those already of relatively high status. Much more of one's life and environment was seen to be within human control and understanding. Common sense was undergoing a change. In removing the earth from the center, in rotating it around the sun as one of many planets, the Copernican revolution raised human and mundane concerns to the level of the heavens. It is the manifestation in astronomy of a new interpretative framework corresponding to the new social ambient.

*Epicycles, etc., are geometric devices which may be indefinitely although cumbrously refined to permit accurate calculations; they allowed the Greeks and their successors to retain the premise that heavenly bodies move in circular orbits. A planet, for instance, would be treated as if its path were that of a point on a rotating circle whose center is moving in a circle around another point.

Early adherents were won to the new theory through sympathy with its underlying world-view, not through factors internal to science. As mentioned above, there was no new data or new technology to attract them. The new interpretation was not significantly simpler — in some respects it was more complicated — nor more accurate than the Ptolemaic model (in spite of assertions to the contrary by many textbooks, which distort the content of science as they misunderstand the factors which shape it). It denied the empirical evidence not only that the sun “rises” and “sets” but also that observable parallax was absent. Only decades later was the telescope adopted and what was taken to be empirical confirmation provided. Far from being based on new data, Copernicus' theory enabled the perception of new data. Other cultures, not precluded by their socially conditioned general perspectives from seeing celestial change, had observed sunspots and new stars for centuries. After Copernicus, using the same instruments as before, European astronomers began to see these phenomena and to interpret comets as wandering through what before had seemed ‘immutable space.’ The same premises which enabled the new astronomy and made sense to those of Copernicus' contemporaries whom his argument persuaded, are also to be found in other spheres of thought undergoing decisive transformation at this time. Copernicus' own writing on subjects far from astronomy manifests the same new world-view.

How we organize data in science as in every sphere of consciousness embodies an over-all outlook which derives from our social existence. Underlying and structuring all our thoughts is our understanding of our society and our reactions and adaptations to it. Scientific concepts are thus inherently political, continuing to express and reaffirm socially based world-views. Einstein's reluctance to accept probabilistic quantum theory, to take one modern realization, stemmed explicitly from his rejection of the discordant outlook of which he saw it a product. An excellent recent study (of sexism in the history of biology) in *Science for the People* provides a further illustration of how scientific concepts, in part socially based, in turn reinforces the social status quo.[3] To ‘serve the people’ with existing science is insufficient.

Practicing Politics and Science

For a worker in science who recognizes the need for fundamental social change, the more familiar respects in which science is political lead to relatively limited ways of combining jobs with political activity. Many indeed chose to separate professional from political lives, working with other people after job hours and outside job roles. Others publicize political abuses in connection with science or take advantage of respected positions based on work in science to speak out on social issues. Some scientists or science workers who are radicals organize their co-workers to rearrange or diminish hierarchies in the work situation. And yet all of these approaches leave the science itself, the content of research and formulation of

results, untouched. Considered in those terms, science seems to offer fulfillment mainly in ways that are apolitical. For someone who is politically committed, there are constant qualms about whether and how much even to be working on science. Some people become science drop-outs to expend energy on efforts more directly political. For others who need to hold a job in science and yet are unable to reconcile science and politics, the tension may result in lessening political commitment.

There is another important political option which derives from the above discussion. It is possible to use one's scientific knowledge to oppose specialization or overcome some of its deleterious effects. Often what passes for narrow technical decisions really contain disguised political decisions which can be extricated and pointed out. *Science for the People* has been full of examples.[4] The aura of technical expertise shelters what are political decisions from question and criticism. There is a political point too in attempting to enhance not only the scientific understanding of non-scientists but also their sense of their own ability to understand. Effective "popularization" has negative connections only to people who accept the elitist premises of modern science. And yet, integrating the concepts with which scientists work for presentation to a lay audience, still accepts those concepts as given. *It is through recognizing that scientific concepts themselves are political that it is primarily possible not only to be a radical and a scientist, but to be a radical scientist.*

Every society rests on the consciousness of its members. Their adherence to, or at least acceptance of, its structure is ultimately what holds the society together. The major obstacles we face in doing political organizing in our own society are a widespread lack of ability to conceive of a better society, or more commonly a sense that it is impossible fundamentally to change what we've got. Corporations, the state, etc., all of them clearly opponents, are obstacles primarily because too many people continue to believe them legitimate.

As a large part of this essay has attempted to show, consciousness is not autonomous. There is much about our society that encourages people's cynicism, apathy and low regard for themselves. In political organizing toward social change, it is not possible to work at the level of consciousness alone. There are severe limits on the extent to which people's sense of social alternatives and sense of their own capabilities to help shape those alternatives can be altered without some alteration in their lives. A revolutionary movement, aiming at a society in which all the people will run the society, must engage people increasingly in conscious and active participation toward changing social conditions now. This is distinct from models of revolutionary action which postulate a revolutionary elite as the sole active force, or ones which include an uncomprehending or merely sloganistic mass participation, or ones which would require waiting until after a seizure of power for the entirety of the social change. This is distinct also from any one-way conception of the relationship between social conditions and consciousness, either one that expects capitalism inevit-

ably to fall from its own contradictions, exclusive of human effort, or one that approaches people without careful consideration of the concrete factors that shape and limit their receptivity. The very fact of being part of political struggle is itself a changed social condition which makes possible changes in perspective and attitude, especially if the political struggle is well chosen and well organized.

A crucial objective of organizing is the fundamental transformation of outlook. Through their struggles, people must learn to understand our society, what maintains it and what will be required to change it. There are important answers that will elude us until we have a mass movement with the capacity to shake and test the society. People must see themselves as capable, if united, of effecting basic change and increasingly able themselves to decide which tactics will further our growing knowledge and ability to transform. It is insufficient to be only anti-capitalist, anti-ruling class, anti-racist, etc. More than an abstract idea of the kind of egalitarian, genuinely democratic society toward which we aim is necessary. That society must be seen as a real prospect and legitimate objective. Unfortunately even many radicals deep down do not believe that a better society is anything more than a theoretical possibility. Their actions and the ways they work with others manifest their acceptance of the prevailing order.

Going Beyond: Doing Radical Science

Knowing that science concepts would and will be different in a qualitatively different society* enables science workers in their daily practice now to call into question this society and the consciousness that sustains it. This can be done in two basic ways. The first is by learning to identify the hidden, seemingly commonsensical and thus hard to see, premises that underlie accepted concepts, and by learning to recognize how these premises reflect a world-view which is socially based and socially restricted. Showing their connection to the structure of our society, teaching others to understand all ideas and cultural products in social terms, aids people in recognizing that this society is not eternal and cannot be simply accepted as a given.

This first possibility for political practice within science leads to a second. Having discerned the kinds of premises and perspectives promoted by life in this

*Again, there is no implication that ideas change automatically in one-to-one correspondence with social change. Elements of ideas from previous world-views, from previous social structures, are retained long after the context that gave rise to them or permitted them has been altered. They are retained selectively, however, according to what continues to make sense in terms of people's new social experience and setting. A modern reader of Newton, for example, is struck by the distortion of his intentions and of the interconnection of his thoughts represented in the selective culling his ideas receive in secondary accounts today. It is not so much that each generation rewrites the past as that each social configuration understands the same past differently because it has something different to understand about itself.

continued on p. 40

REVIEW OF SftP AAAS ACTIVITIES

Continuing a six-year tradition, SftP organized activities on a variety of fronts at this year's annual meeting of the American Association for the Advancement of Science (AAAS) in Boston, Feb. 18 - 25. Because of the range of important issues raised, the extensive media coverage, and the participation of many science-related people who are not elite science-“fatcats”, the decision was made (at SftP's Northeast Regional Conference, Voluntown, Connecticut, in October 1975) to make the AAAS meeting a focus for SftP. The following pages contain diverse descriptions and reports of these AAAS actions, written in some cases by regular activity groups of SftP. The reports are grouped as follows: AAAS sessions arranged by members of SftP; other AAAS sessions, for which preparation and attendance was organized; related activities and events; and two overall assessments of our efforts.

The seven sessions arranged by SftP members in some cases involved preparations and full participation by SftP activity groups; others were largely the work of single persons. The regular sessions which attracted an organized attendance of SftP members and friends were generally prepared for only at the last minute. The first of the two overall assessments is the work of two members of the AAAS Coordinating Committee, the group in Boston which carried the major burden of the planning done. The second assessment presents a different perspective on the objectives and achievements of this year's activities and comes from a member of the Stony Brook chapter, based on discussion there; it was subsequently read and endorsed by some members of the Boston chapter of SftP.

“GENETICS AND SOCIAL POLICY”

The Genetics and Social Policy Group of SftP organized the XYY campaign at Harvard (see SftP, July 1975, p. 28), and has been an active force in the Recombinant DNA controversy, at the level of both research guidelines and laboratory worker hazards.

Approximately 300 - 400 people attended this AAAS-approved session held Sunday afternoon from 3 to 6 PM.

The Genetics and Social Policy Group of SftP had met weeks beforehand to determine the structure of this meeting which began with 6 speakers on different aspects of the interaction of genetics research, genetic theory and social policy. The first, Gar Allen,* who teaches biology at Washington University in St. Louis, spoke on the eugenics movement in the U.S. at the turn of the century. [1] Next, Marian Lowe,* who teaches chemistry at Boston University, spoke on the attempts to use biological and genetic research to support the differences in roles between the sexes. Jonathan King,* who teaches biology at MIT, talked on the XYY male, the myth of the criminal chromosome.[2] Tabitha Powledge, an associate of the Hastings Institute, spoke on the danger of genetic screening programs being used to discriminate between workers applying for jobs. Maritza Arrastia, coordinator of the Committee to End Sterilization Abuse, discussed programs in New York City and Puerto Rico to sterilize Puerto Ricans and other minority groups and the struggles against these programs. (Thirty-five percent of women of childbearing age in Puerto Rico have been sterilized.) Finally, Kostia Bergman,* who teaches biology at Northeastern University, spoke on the dangers of current research on gene implantation in bacteria, and its possible future use in human genetics.[3] Jon Beckwith, who chaired the session, introduced it by showing the links between all of these issues. He described how genetic ideas and programs are used to take society off the hook for a variety of social problems — e.g. labor unrest (eugenics); feminist demands (sex-role research); social misbehavior (the XYY myth); unhealthy working conditions (genetic screening); distribution of wealth and unemployment (sterilization). These ideas were brought up in the talks themselves.

Each speaker took 10-15 minutes and after 1½ hours of talks, we broke down into 6 discussion groups, one on each topic. Each group included the speaker and a member of the SftP Genetics group as chairperson. After one hour of small group discussion, the larger group reconvened, heard reports from each of the groups and a general discussion ensued for about ½ hour.

The response to the entire session was uniformly very positive. Members of the audience felt that a reasonably

* Members of Science for the People

coherent presentation of the uses of genetics for social control was given, and that the politics of Science for the People (whatever that is) was quite explicit. People appreciated the short presentations and the opportunity to participate in small group discussions. Just structuring the meeting this way makes people more receptive to our ideas.

The small group discussion often focused on points in our analysis which had not been made clear. For instance, many people got the impression that we were anti-science and did not see any benefits to genetics research. Some genetic screeners in the workshop thought we opposed all forms of genetic screening. This should have been made clear at the beginning, since it is a recurrent problem in talking on these issues. However, both in the XYY and the genetics and sex roles workshops many in the group ended up concluding that the research should not be allowed to continue. On the sterilization issue, there was confusion over the issue of "free choice": Even if women in Puerto Rico are not directly coerced into accepting sterilization, are they really being allowed "free choice?"

The last ½ hour of open discussion was not terribly fruitful. In the future, this portion might be eliminated or organized in a more structured way, with specific questions.

Press Conference

The AAAS asked members of the panel to hold a press conference on Sunday morning. We chose to focus on 3 issues — 1) genetic screening of workers, 2) sterilization abuse and 3) sociobiology and sex roles. About 50 reporters attended and many of their questions seemed to indicate receptivity to our analysis. The sharpest questions again came on the sterilization issue — i.e. what's wrong with it if women choose freely. This sharp questioning of Maritza Arrastia also reflected, we felt, a subtle unconscious racism on the part of the press. Maritza was the only minority person, and non-academic, on the panel. In the future, we should make attempts to include more such individuals in press conferences and our sessions. It could be an important part of breaking down the elitist, racist barriers in our society.

Genetics and Social Policy Group

1. G. Allen. History of Eugenics in the Class Struggle. *Science for the People*. 6, Mar. 1974. Reprinted in *IQ: Scientific or Social Controversy?* Published by the SftP Group on Genetics and Social Policy. 1976. Available from SftP, 16 Union Sq., Somerville, MA 02143 for \$1.25.

2. J. Beckwith and J. King. "The XYY Syndrome: A Dangerous Myth," *New Scientist*, Nov. 14, 1974, p. 474. Reprinted in *IQ: Scientific or Social Controversy?*

3. Group on Genetics and Social Policy. *Gene Implantation May Be Dangerous to your Health*. 1976. Available from SESPA for \$0.20.

"PRIORITIES IN CANCER RESEARCH: OCCUPATIONAL AND ENVIRONMENTAL CARCINOGENESIS"

For more than eight months we worked to organize a discussion for the AAAS meeting on why the priorities of the so-called "war on cancer" are obviously wrong. The issue is a matter of public record (N.Y. Times, May 27, 1975). More than 70% of national cancer funding, from the National Cancer Institute (NCI), goes into clinical research, and the building of clinical facilities. Yet survival outcomes for more than 80% of cancer cases have not improved since the beginning of the 1950's (when antibiotics led to improvement of survival from surgery and radiation). In fact, recent studies indicate that the disease models for many types of cancer, which inform therapeutic practice, may be fallacious. Another 20% of research money goes into the viral cancer program where, despite excellent search techniques there is still no evidence of a virus causing human cancer, and in fact, what is known about cancer viruses in animals suggests that the understanding needed for treating these viruses does not yet exist (i.e., they do not work like smallpox or polio virus, and therefore vaccines will probably not be the answer). Only 10% of the NCI budget goes into research on environmental and chemical carcinogenesis. Yet it is this area that society can "treat". In fact, since cancer is 60-90% caused by the environment, a program which attacks the problem of identifying carcinogens and removing them from the environment, or preventing their introduction, could do more toward solving the cancer problem than any other current effort.

Our session was first organized to explore the above three aspects, but only the environmentalists would come to debate. Some scientists connected with the National Cancer Advisory Board felt that the AAAS was an inappropriate forum to discuss these questions ("they're only a bunch of informed laymen"), and that the discussion carried elements of assaulting funding for basic molecular biology. We disagree. The assault on funding molecular biology began when Nixon cut money for basic research, and then under pressure, restored some of it for the "war on cancer". This encouraged molecular biologists to claim they were working toward a "cure" for cancer in order to get their research funded. Many individuals in the scientific community decried this pressure, but there was no organized opposition, and most have had to capitulate and "relate" their work to cancer. This has discouraged work in basic cell physiology which will be essential to understanding the complex problems involved in carcinogenesis and developing a scientific basis for cure.

Our session, which focused on the environmental question, outdrew Margaret Mead. There were more than 500 people packed into space meant for only 100

(the walls were opened up). The AAAS knew in advance that this session would be well attended, but apparently couldn't find room. Gary Flamm, assistant director of the NCI Division of Cancer Cause and Prevention presented figures claiming that 17% of the NCI budget was spent on environmental cancer. The environmental carcinogenesis subcommittee of the National Cancer Advisory Board, had previously rejected these figures in November. Flamm was nailed by a member of the audience who pointed out that the NCI doesn't even have a program to screen for carcinogens in drinking water.

Sam Epstein of Case Western Reserve, a leading crusader for Toxic Substances Legislation and an individual who has taken on the petrochemical industry in fighting to ban Dieldrin and other pesticide carcinogens, gave an outstanding overview of the problem, including how many scientists lend themselves to industry by saying we know "too little" to ban something as a human carcinogen.

Nick Ashford, of M.I.T. and author of the book *Crisis in the Workplace*, said that to have effective cost-benefit approaches to carcinogens, corporations must be made to bear the cost to society of such exposure.

Finally Barry Commoner of Washington University concluded by documenting how the petrochemical industry is really interested only in profits, not in health or useful products. Commoner concluded that he felt only socialism would solve the problem of cancer as a corporate caused disease. Tapes of this session are available.

The session operated under many handicaps (space, chaotic conditions) but the basic weakness was that we didn't develop a working collective for the session well enough in advance, and thus were stuck with a lecture situation, in which little audience participation was possible. Partly this arose because we had intended this session as a "stalking horse" for our others . . . i.e., a super-legitimate session. However, it is clear this is a critical issue sharply illustrating how corporate rapaciousness endangers all our lives, and that scientists hide behind science and even use science against regulation of industry.

Allen Silverstone,
Politics of Cancer Group

ENERGY AND FOOD PRODUCTION: Contemporary Technology and Alternatives

This symposium attempted to take a hard, critical look at agricultural production, and its use of energy in our own society, as a prototype of a technically and industrially advanced capitalist country. Food and energy have come to be widely recognized in recent years as having unique and fundamental roles in the social, political, and economic relations among people and nations. On their overall abundance or scarcity rests the potential for

achieving, on the average, more than a mere subsistence quality of life. Their distribution among people is one of the most meaningful indicators of the degree of equity, or inequity, of a society. As limitations on energy availability develop, the question of how energy is used in food production becomes one of the most urgent subjects for study. The energy costs for producing feed crops, as distinct from food crops, was analyzed, and the comparative costs in energy, labor, and other resources — these latter measured by their money cost — was considered. In viewing contemporary agricultural technology as having been developed for private corporate profit-efficiency and as a consequence suffering certain shortcomings, the obvious question arises as to what kind of technological alternatives, if any, could provide abundant — or at least adequate — food for all the world's people in an ecologically stable state. The symposium attempted to address this basic question, at least tentatively, and to explore current efforts to develop alternatives to prevailing agricultural technology. More generally, since technology alone cannot solve problems of social inequity, the broader question towards which the symposium aimed is: Towards what kind of society should we strive to achieve humane, rational, healthy, and ecologically sound living for the vast majority of the world's people?

Introductory Overview: Science for Starvation, George Salzman

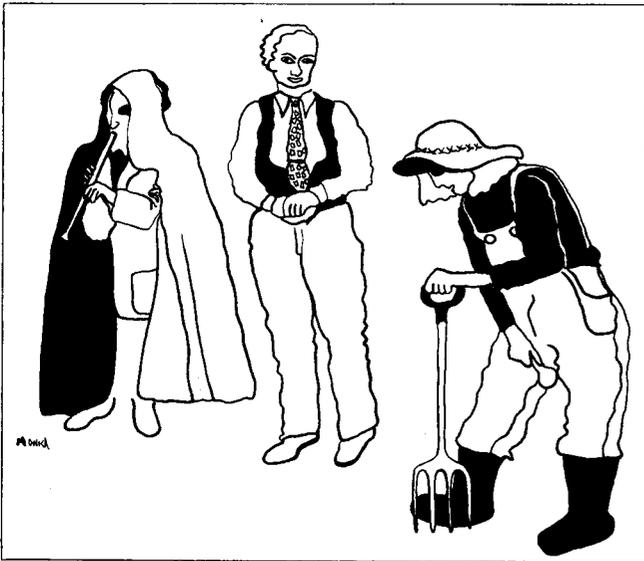
Energy in Food (and Feed) Production, David Pimentel
Organic versus Conventional Commercial Farms in the Midwest: Comparative Efficiencies, William P. Lockertetz

Ecological, Small-Scale Food Technology, John Todd
Low Energy-Cost Alternative Food Sampler (Vegetarian Luncheon Buffet *Extraordinaire*), Li-Min Mo
Energy, Money, and Labor Costs of Protein, Bruce M. Hannon

Food for Profit? or Nutrition?, Frances M. Lappe
Living a Healthy Life: The Human Scale, Scott Nearing
Summing Up: Which Way to Go?, George Salzman

Was it a "success"? Was it worth the effort? It's hard to know the answers to such questions with any certainty. Overall I was left with a very positive feeling, based on a variety of things. One person staffing the Science for the People table in the hotel lobby that day, told me that many people showed up after the session and were interested in knowing more about our organization.

In terms of bringing together people with a very wide spectrum of viewpoints and providing an — admittedly limited — opportunity for exchange and argument, it probably deserves to be called successful. A fair part of the questioning and discussion showed that there were sharp disagreements. Conventional agriculturalists in the audience (none of whom were on the panel) probably felt the session was rigged against them, and they tended to zero in on Bill Lockeretz, John Todd, and Frances Lappé. But the audience was also studded with ecologists



and entomologists, who were not so conventional — at least as concerns agriculture — and there were also nutritionists, organic gardeners, third-world scientists, food co-op activists and of course many others to whom none of these labels apply. Oh yes, Science for the People buttons were there in force, too.

In terms of planning other symposia in the future, there were some mistakes we made that could be corrected.

First, the organizational effort was inadequate because initially I planned and arranged the symposium by myself. The Science for the People group that eventually formed and involved itself with the symposium could only meet a few times before the AAAS meetings were upon us.

Second, we did not arrange adequately for continuing contacts with most of the people who attended the session. For many of them it was therefore a 'one-shot' contact with our group.

Third, it is my opinion that some members of our group, who were in sharp (and valid) political disagreement with views presented by two of the panelists, assumed a harsh and hostile attitude toward them — as though they were 'enemies'. I think those two panelists were 'turned off' by us, and that that is our political and intellectual loss, because they have useful insights and information that they can contribute to our efforts, if we regard them as friends and potential allies.

Except for these three failures, my impression is that the symposium over-all was good within the limitations of a traditionally conceived and organized format. If we were to do it again, I think that shorter presentations and then breaking down into several discussion groups, as was done in the genetics and social policy symposium (see report elsewhere) would probably be better.

Copies of some of the prepared papers are available from the Food and Nutrition Group, Science for the People, 16 Union Square, Somerville, Mass. 02143.

George Salzman
Food and Nutrition Group

“AN INTRODUCTION TO OCCUPATIONAL HEALTH AND SAFETY”

The session on occupational health and safety, planned by a group of people from Science for the People and the Occupational Health and Safety Project of Urban Planning Aid (UPA), was held the morning of Sunday, February 22. The scheduled speakers were Judy dePontbriand, a staff person at UPA; John Froines from the Division of Occupational Health of the Vermont State Health Department; Dave Kotelchuck, a staff person at Health/PAC in New York City; and Tony Mazzochi of the Oil, Chemical, and Atomic Workers Union. Tony Mazzochi, unfortunately, was unable to attend, but Mike Wright of UPA filled in by narrating an excellent slide show on workplace hazards.

Some of the areas covered by the talks were as follows: the lack of university educational programs on occupational health; the possibilities for scientists participating in local committees dealing with occupational hazards in workplaces; the phenomenon of runaway shops in hazardous industries (e.g. asbestos textile manufacturing moving abroad); the myth that “safety pays” (that improved safety means higher profits in the long run and therefore business just needs to be shown what its best interest is); the Vermont OSHA plan with its flexible approach to worker input and the prospect for more stringent standards.

The audience at this session was fairly young, and seemed to be very interested in health and safety from the worker's perspective. All speakers were well received, judging by the tone and abundance of questions following each talk. About twenty people signed an interest sheet that was passed around, and have since been contacted about our ongoing OHS Group meetings.

The session was criticized for not having more content directly applicable in the lives of the academically oriented people present, e.g. laboratory hazards. Also, some of us felt that, given the extent of participation in the discussion following the talks, it would have been better to break down into smaller groups. Finally, it would have been useful to have had a physician or epidemiologist with occupational health experience on the panel to discuss the medical aspects in more depth. Our group is now in the process of discussing lab hazards and our relationship to lab workers.

Richard Youngstrom, Eric Entemann
Occupational Health and Safety Group

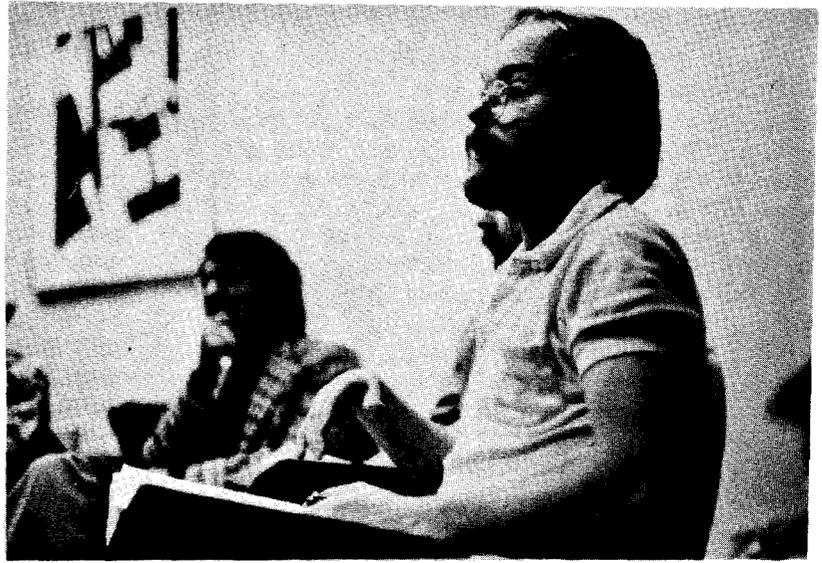




Al Silverstone

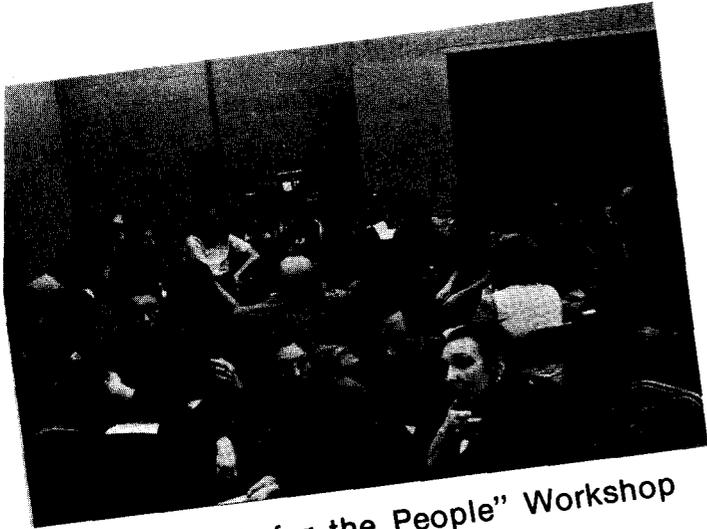


Kostia Bergman



Phil Bereano

Steve Cavrak



"Research for the People" Workshop



SftP Literature Table, Mezzanine, Sheraton Boston

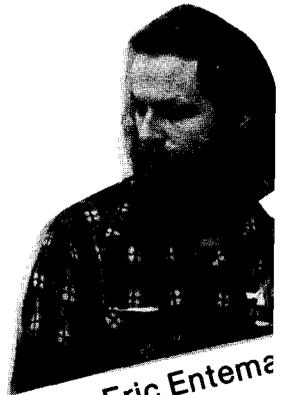


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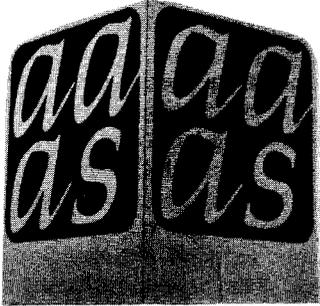
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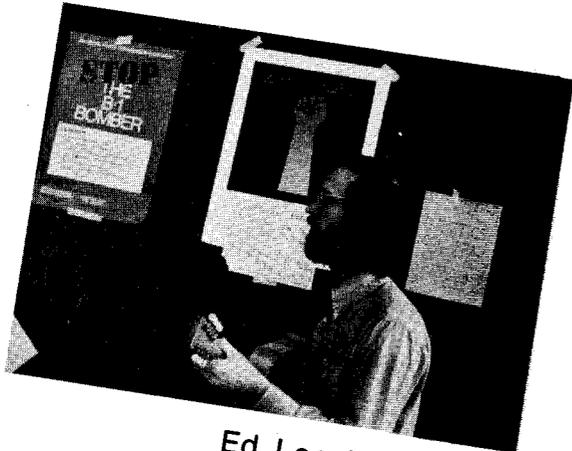
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Jean Gallo



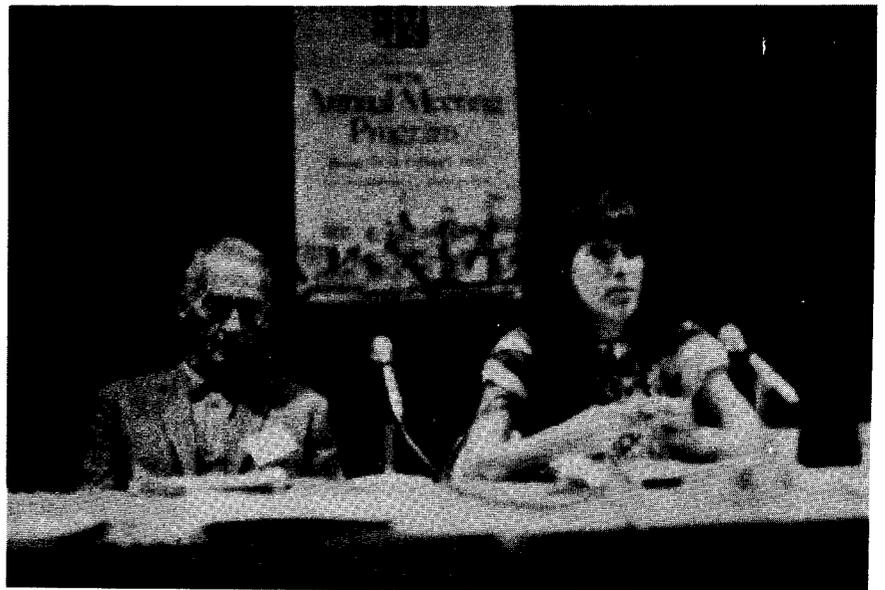
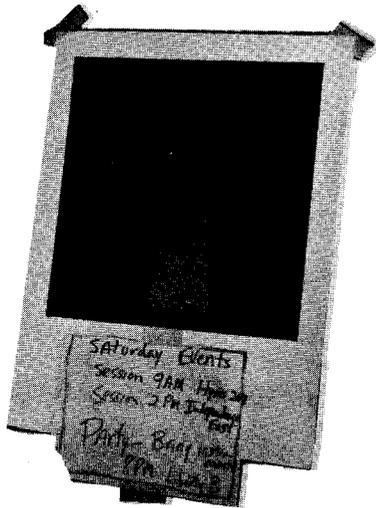
Dave Kotelchuck



Ed Loechler



"Research for the People" Workshop



Scott Nearing

Sue Tafler

TARGETED SESSIONS

Some of our most exciting activities at the AAAS meetings were the sessions which we "targeted" — writing leaflets to hand out to the audience, asking questions of the speakers, and trying in other ways to challenge the message of the session. Most of the original decisions about which sessions to target were made ahead of time by chapter activity groups after investigation into the background of the speakers, guesses about what they would say, and discussion of what we might have to say in response. It was usually not until the convention started that individuals decided just which sessions they were interested in, and the resulting groups were usually made up of people from several activity groups and several cities. Included here are reports from a few of the target sessions.

"Intelligence and Performance: Newer Conceptualizations and Relevance for Behavioral Measures of Success"

Most of the people targeting this session are members of the Boston Science Teaching Group.

The abstract of this session suggested that the "truth" about intelligence "lies somewhere in between the two extremes" of "uncritical acceptance of the nature of intelligence" and "adversaries who categorically reject intelligence." A number of SftP people attended this session and attempted to turn the discussion to questions of the social function of intelligence tests and of the genetics-IQ controversy. However, most of the speakers on the panel attempted to avoid these issues. Klausmeier of Michigan avoided them by renaming intelligence as "concept attainment." He was able by this ploy to neutralize the issue, at least in his own mind. He talked mainly about an analysis of the stages of learning. Stanley of Johns Hopkins spoke only of child prodigies and the importance of focusing special attention on them. Bane of Wellesley dealt with the statistical correlations between test scores and "success," finding them useful even though the measuring instruments may be flawed. The one speaker to openly promulgate the genetic hypothesis for intelligence was Humphries of the University of Illinois. The only speaker to bring up the social and political impact of intelligence testing was Hicks of Howard University, who was the only one on the panel relegated to the position of discussant and the only minority group representative.

The structure of the meeting was typical of regular AAAS sessions — five mostly long-winded speakers

taking up most of the time of the session, with no time allowed for questions between talks. However, SftP people spoke up after each of the first two talks, attempting to open up the discussion and change the direction of the meeting by bringing up the social and political issues around IQ testing. We challenged the neutrality the speakers were attempting to hide behind. The audience seemed startled by this intervention. However, after all the talks were over, most of the questions from the floor, including our own, were critical of positions taken by the panelists. We suspect that these questions may have been partially stimulated by our earlier "disruption," that we encouraged critical questioning by others who may have been reluctant to do so without us. In front of this questioning Humphries very quickly backed down from his support of the genetic hypothesis, saying we shouldn't be talking about either genetics or environment. In general, the tone of the session suggested that the proponents of the genetic hypothesis are on the defensive. The actions of many groups, including SftP, which followed the Jensen-Herrnstein theories seemed to have had a significant effect. One of the people in the audience later said to us that he had never seen such critical questioning of speakers as he had at this year's AAAS. After the session, we sold a number of copies of the new SftP IQ pamphlet.

Jon Beckwith
Barbara Beckwith

"The Role of Scientific Societies with Regard to Scientific Freedom and Responsibility"

The Boston Genetics and Social Policy Group, best known for its opposition to the XYY genetic screening study, was joined by several SftP members from other chapters in targeting this session.

The function of this session in the eyes of the AAAS was to discuss "mechanisms to enable the Association to review specific instances in which scientific freedom is alleged to have been abridged or otherwise endangered, or responsible scientific conduct is alleged to have been violated" (J. Edsall's report in *Science*, 16 May 1975). The extremely tedious, formal and long-winded presentations revolved around the question of whether the scientific community can develop "suitable arrangements to ensure that the freedoms enjoyed by and the responsibilities expected of its members are consistent with the high ideals it has set for itself" (AAAS conference catalog).

Six Science for the People members prepared a leaflet which we handed out to each person at the session. It urged the audience to join us in critically challenging the panelists' positions and indicated the assumptions underlying the AAAS statement of the problem. These

assumptions were 1) that current research is motivated only by intellectual criteria, and 2) that the protection of scientists' "freedom" and "responsibility" could conceivably be the domain of professional societies and be determined by their formal decisions.

In general (as expected), the panelists were more concerned with protecting freedom of inquiry than with protecting the public. We brought up the problems of population control and food production; they were defensive when we suggested that there must be some political solutions to these problems. They did show some concern for protecting "whistle blowers" in the scientific community, but Edsall condemned our attack on the XYY research. They suggested that AAA\$ ought to act as a clearinghouse for ideas and not as a judicial body. When we asked Edsall if there would be any public representation on the final "judicial" committee, he said, "Oh yes, John Knowles, Earl Warren, and Walter Hickel."*

We feel that our presence was a successful one. Several people stayed on to talk afterwards and others (including one panelist) came to talk to us at other functions during the week, saying that they were impressed with our discussion. It was clear that many people in the audience, especially women, were relieved to have had our opinions aired.

Frances Warshaw
Genetics and Social Policy Group

* John Edsall is Professor of Biochemistry Emeritus, Harvard University.

John Knowles is President of the Rockefeller Foundation.

Earl Warren was a Chief Justice of the U.S. Supreme Court. He died in 1974.

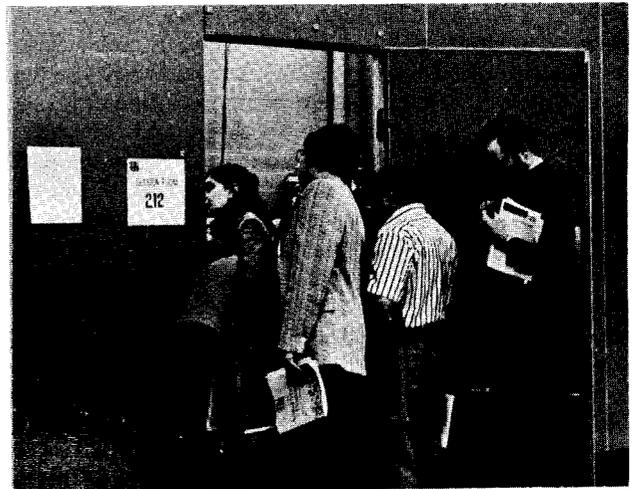
Walter Hickel is a former Governor of Alaska and a former U.S. Secretary of the Interior.

All of these men served on the AAA\$ Committee on Scientific Freedom and Responsibility, which was established in 1970.

Three Sessions on Women in Science

The Women's Issues Group was formed by people in the Boston chapter one week before the beginning of the AAA\$ meetings. We felt that Science for the People could not adequately criticize the class nature of science without considering the role of women. We decided to write a leaflet to hand out at the three AAA\$ sessions which focused on women — Great Women in Science, Opportunities for Women in Science and Engineering, and Science Education for Women.

We had a good deal of trouble writing the leaflet, since we found that members of the group had very different ideas on the nature of women's oppression. Half of us felt that feminism is a viable and important force, in and of itself, that it is only through fighting directly for the



rights of women that our role will change. Others in the group argued that women's oppression should be seen as part of class oppression, that capitalism-imperialism is the basis of sexism, and that women will be liberated when the working class is no longer oppressed. This difference was brought out in our respective attitudes toward the professional women we were addressing. Some of us viewed them as our sisters, people with whom we share common problems; the others viewed them as representatives of the ruling class, and therefore the enemy.

All of us agreed, however, that these sessions were making a mistake by dealing only with helping more women become PhDs, faculty members, and research scientists. This is not a goal with which we disagree, but we wanted to point out that it is a limited goal and that it will more likely succeed if it includes more comprehensive demands for women. The concept of "women in science" should be extended to include lab technicians, clerical workers, and others without whom the professionals could not exist. Our leaflet points out that only when all of these women join together will there be hope of changing the role of women in science.

We handed out about 200 of these leaflets before the sessions started, but got little feedback. One woman did come back to us to ask for ten more, "for the women in my department."

Our actions at the three sessions were not very successful. First of all, we had been too busy struggling over the content of our leaflet to take time to mobilize other SftP members to come and support us during the sessions. Partly because we were a new group, we didn't know how to target the meetings very effectively. We tried to ask a few questions, but found it hard to do this without appearing to attack the speakers and belittle their goals, which made them unwilling to listen to us. Some of us were surprised (and a little chagrined at our surprise) that *they* actually had something to teach *us* about the history of professional women in science, e.g., how little the statistics have changed in the last fifty years.

Although the goal of these meetings was concerned only with professional women, and although the speakers did not consider how women could benefit from a science which served the people, the sessions were still a step ahead of most of the others at the convention. Most of the speakers were women, and the large audiences were made up of people who were concerned with women's issues. This was a real change from almost all of the other sessions, including some which were sponsored by Science for People. We left these sessions with the feeling that we had used a lot of our energy on internal struggles of the group, and that perhaps some of the rest of it had been misdirected. At the same time, we feel good that because of the AAAS meetings, we have formed an activity group which is already beginning to help direct the attention of Science for the People towards sexism and women's issues.

Betsy Walker, Pat Clark
Women's Issues Group

Teaching of Science-related Social Issues

Recently, members of the Boston Science Teaching and Sociobiology groups have joined forces to criticize the failure of new high school textbooks to deal with the political implications of sociobiology.

Five SftP people attended this session. Two of us passed out a leaflet opposing a high school curriculum which promotes the ideas of sociobiology (*Exploring Human Nature*, developed with N.S.F. funds by Education Development Center and sociobiologists Irven DeVore and Robert Trivers). The first four talks were rather dry and conventional; we provoked some discussion in the question periods. Peter Dow's talk on "Education for Survival: Why We Must Teach Evolution in the Schools" was a description of the *Exploring Human Nature* curriculum. We started a discussion on the determinist ideology in the text, on the non-existence of scientific evidence for it, and on the insidiousness of its "open-ended" approach. Without admitting that there is any controversy over it, the authors lead students to "discover for themselves" a biological explanation for all sorts of human behaviors, from a mother-child bond, to male promiscuity vs. female choosiness, to sex role differences, to children hating spinach and people avoiding open spaces. We related this curriculum to a larger sociobiology movement and to support of the political status quo. After the formal discussion was closed, people stood around to discuss the issues with us, and seemed to appreciate by the end of the session that there was a controversy that they hadn't considered before.

B. Beckwith, B. Lang
Science Teaching Group

OTHER ACTIVITIES AT THE AAAS

Finally in addition to holding sessions and targeting others, there were a number of additional activities and actions sponsored by Science for the People at AAAS. Three of these are described here, i.e., the literature table, the bus tour, and a meeting on Alternative Technology. Others are described in the two overall assessments of Science for the People's activities at AAAS. This year our literature table was in a central location and, as always, a great many people were introduced to the work of Science for the People through reading our literature and talking to the people working at the table. The bus tour presented the historic and economic roots of the busing crisis in Boston and was well received by those who took the tour. The Alternative Technology meeting was the beginning of a process, now underway, to try to analyze the political aspects of this movement in science and technology. Read on for more details.

LITERATURE TABLE

The SftP literature table at this year's AAAS meeting was located in a strategic area of the Sheraton Hotel, no doubt the result of years of struggle by SftP members at previous meetings. We were allowed one small table near the main stairway linking the two floors where the sessions were held. The table rapidly expanded to four large tables with SftP material, as well as literature from the New England Free Press and 100 Flowers Bookstore.

It was the busiest, most interesting aspect of the conference according to many who were learning about SftP for the first time. What interested these new people was not only the large selection of literature, but also the chance to discuss science and technology related issues with members of SftP from Boston and around the country.

At the "height" of the conference, the literature table was the scene of political theatre portraying the emergence and consequences of agribusiness. There was also a continuous slide show on the economy shown during the first few days of the conference. Close to a thousand magazines and other SftP literature were sold including the newly published "Critique of Sociobiology" pamphlet, and the reissued IQ issue.

The literature table was also valuable as a place where SftP members from different chapters could get to know each other and discuss ways for forming stronger communication links within the organization. Many suggestions were made concerning strategies to build new chapters and organize SftP nationally.

Frank Bove

Report on the Activities of the Busing and Racism Group at the AAAS

The Busing and Racism Group feels that its efforts at the AAAS received positive response from participants. There was good exchange among all the people participating and acknowledgement of the seriousness and magnitude of racism, and its use by the segregationist movement (including ROAR, KKK, and Citizens' Councils) and the movement's links to the ruling class.

The Busing and Racism Group put on a bus tour to point out and link up the different forces which control people's lives in Boston. The tour concentrated on pointing out specific schools and their important characteristics, the associated neighborhoods and their relation to the schools, as well as their manipulation by the government to maintain control. Going through South Boston (an all white area) and then on to Dorchester and Jamaica Plain (integrated areas), it was very clear that neighborhood and housing conditions were equally terrible. Both the all-white and the all-black housing projects in these areas were poorly maintained and decrepit. The housing conditions are not a function of the occupants' race and while people within integrated neighborhoods are fighting for better conditions and better schools, ROAR's racist leadership is doing nothing toward improving the quality of schools or housing. The histories of different neighborhoods illustrate the intentionally destructive urban development of Boston by the capitalist class. These histories show that urban renewal has been used to destroy integrated neighborhoods, with strong community organizations, to make

space for high-rise office buildings to serve the upper class. These policies have resulted in the dislocation of thousands of people who have been forced to accept rapidly deteriorating housing, the destruction of their communities and increased isolation.

Busing is an important means of integration and has been fought for by the Black community for years. However, the ruling class, just as it uses urban renewal to destroy homes and neighborhoods, will use busing against the people in any way it can. It has already done this by busing students from schools that have already been integrated, thus disrupting these schools for no reason, and by supporting the segregationists, who through their racist policies force the whites of South Boston into greater poverty and poorer conditions.

In our forum on the Boston schools, we discussed the role of the segregationist movement, how it divides working people, thus making things worse for all poor people and enabling the rich to have more profits and control. The use of busing was discussed in relation to strengthening the fight for integration and unity among all. This unity would then provide the necessary base for the struggle for better education and working conditions.

We also prepared and distributed a leaflet at Harvard President Derek Bok's opening lecture at AAAS. The leaflet's purpose was to bring out the contradictions between Harvard's good intentions and promotion of science and its ruthless, long-term, well-planned destruction of housing and entire neighborhoods for its own profit.

Another leaflet distributed at several population-related sessions pointed out the fallacy of blaming social problems on overpopulation. By comparing different

continued on p. 29



ALL THE NEWS THAT WAS FIT TO PRINT: MEDIA COVERAGE OF SFTP.

Scientists Debate Question of Race and Intelligence

New York Times, Feb. 23, 1976

"The issue of whether or not there are ethnic or racial differences in average intelligence, usually left off the agenda of scientific meetings as being either inconsequential or too explosive, has been debated here at the annual meeting of the [AAAS].

"The session... proceeded far more calmly than some past confrontations. This may in part have been because unlike those other occasions there was no participant who openly argued that blacks, on the average, are lower in intelligence.

"The audience was largely divided between scientists of an academic viewpoint and activists, students and younger faculty. The chairman... has long been active in Science for the People, a movement whose agitation was a conspicuous feature during the height of student unrest a few years ago..."

Science Parley Dissidents Lower Clenched Fist

Washington Star, Feb. 26, 1976

"Leaving confrontation politics behind, the six-year-old dissident group, Science for the People, put down its picket signs. And in what might seem an unlikely turn of events, the protesters appeared as part of the official program of the 128-year-old [AAAS] meeting, sponsoring a series of sessions on some of the issues that science and technology which concern them most..."

"... said one of the [SftP] organizers, an unemployed physics teacher, ... 'This is a good way to get our ideas across.'

"But the AAAS may have thought that the radicals had conceded.

" 'I think the kids have finally discovered what AAAS is all about,' anthropologist Margaret Mead, retiring president and chairman of the AAAS board, said in an interview. 'AAAS has had "science for the people" since before they were born' ...

" 'They have a point of view, and while it's not mine, they're quite entitled to express it.' agreed AAAS executive officer

William D. Carey. 'They've made themselves felt without being disruptive. They've matured.'

"... As the seven-day meeting ended quietly Tuesday, Science for the People's people were still wondering whether they had done the right thing... [One member], who had earlier expressed fears at the press conference, concluded that 'it was the right thing to do...' [Another] offered a different observation. 'I don't think the whole question of confrontation versus being polite has been settled,' ... [He] was most unhappy that Vice president Nelson A. Rockefeller had been allowed to speak the previous evening, advocating nuclear power and military research, without a shred of protest. Their only protest was a petition circulated later: 'We the undersigned, present at the 1976 AAAS meeting, deplore the action of the AAAS in inviting a prominent political figure, Nelson Rockefeller, to address the convention without also inviting a spokesperson with an opposing view...'

"It was to be sent to the officers of the AAAS, and it could not have been more polite."

When Scientists Gather to Exchange Notes

New York Times, Feb. 29, 1976

"The meeting was undisturbed by the protests that took place on some previous occasions, and in contrast to last year's meeting a symposium was held on the controversial subject of racial differences in intelligence."

Making the Annual Pilgrimage

Nature, March 4, 1976 (London)

"... Science for the People — a radical group that can see very little right in American science, it seems — has almost made it into the Establishment of the AAAS. During the past five years or so it has had a tolerate-hate relationship with the association at annual meetings, sometimes involving the police; this year it had its seminars formally included in

the AAAS programme. Science for the People will snipe at anything — including Boston's school busing problem and the cost of electricity — but at the Boston meeting it was mainly addressing itself to topics like cancer research. The group asked, in one of its sessions, for example: 'Why has so little effort been devoted to the problem of preventing cancer caused by occupational and environmental agents, when it is widely recognized that 80 to 90% [sic] of all cancer is caused this way?'

Science for the People: Comes the Evolution

Science, March 12, 1976

"... The previous Boston meeting, held in 1969, was the occasion of the first in a series of protests by political activists that continued at several subsequent meetings. The return to Boston this year was notable for an absence of conflict, evidence that both the AAAS and the activists have changed..."

"The history of relations between the AAAS and SftP does throw some light on the evolution of this group. In the early years, the activists sought to make their points by disrupting meetings more or less in the style then endemic on American campuses... This year SftP had a literature table and its own room, and SftP members were arrangers and participants in several sessions on the regular program..."

"From the SftP's angle, what has changed is tactics, not the basic viewpoint of the organization..."

"The trend towards tactical restraint occurred in part because SftP kept hearing that its aggressive tactics were 'turning people off'... And the AAAS program had changed, with more sessions on issues which permitted the kinds of discussions SftP was interested in. It should be noted that while SftP this year renounced the demonstrations of yore, the group continued to send people to selected sessions to ask needling questions and that despite the 'new' SftP posture, it still irritates a fair number of people attending the meeting..."

"A lot of scientists radicalized by the events and the atmosphere of the 1960's have simmered down politically because of careers or families or mortgages or simply because the war is over... SftP has certainly not become a mass movement, but it has exceeded the half-life of many of the radical political organizations born in the 1960's, and appears to have made the transition into the world of the 1970's and beyond."

population densities (industrial European countries having the highest densities), funding sources for population propaganda, and examples of social success as in China, the social problems of countries were seen to be directly related to exploitation of those countries by capitalists of those countries and imperialist interests from abroad.

Copies of an updated issue of "Behind the Boston Busing Crisis" are available from the office. (cost 25 cents)

Busing and Racism Group

Alternative Technology Group Meeting

A group of people in Boston who were interested in "alternative technology" had been meeting for a couple of months before the AAAS, mainly in planning an issue of the magazine which would focus on this topic. The AAAS gave us an opportunity to get together with others in SftP from around the country who agreed that SftP should take "alternative technology" more seriously than we had in the past, whether we agreed with it or not. So on Sun., Feb. 22, around 18 people, from Ann Arbor, Seattle, St. Louis, Syracuse, Chicago, Detroit, and Boston, got together to talk.

We decided a number of things: first, that we should organize an official session on alternative technology at the AAAS next year; second, that we would start an informal national newsletter to tie people together; and third, that people were going to help collect material on this subject for publication in *SftP* magazine.

Beyond these concrete decisions and probably most importantly, there was an excellent discussion in which people tried to formulate what they saw to be the political importance of the alternative technology movement. People were buoyed by discovering others who shared their view that such a movement *has* political importance. Then began the work of defining issues and differences. For example, is alternative technology to be defined in terms of its size (small-scale), and complexity (low technology), or primarily in terms of the class whose needs it serves? Is the task of SftP to design and build alternative technologies, for this country and/or the Third World, or is it rather to politicize an alternative technology movement that already exists?

Since the AAAS meeting, the Boston group on alternative technology has expanded and is starting a study group. The first issue of the national newsletter has been printed. People who want more information or who want to contribute to the magazine or newsletter should contact us.

Fred Gordon
Alternative Technology Group

Overall Assessment I: The AAAS Visits BuyCentennial City

The American Association for the Advancement of Science decided to join the BuyCentennial celebration by holding its annual convention in the city "where it all began." Last fall, this convention was chosen to be the prime focus of SftP activities for the winter and a coordinating committee was formed to help mobilize the chapters for the convention, to coordinate their activities, and help SftP use this meeting as a way of building a national organization.

Prior to the AAAS meeting, the coordinating committee conducted two general SftP meetings in the Boston area. These meetings served to advertise the planned Science for the People presence at the AAAS meeting and to bring new people into these activities. As a further example of how the coordinating committee helped mobilize people for the convention, it and the magazine committee suggested that the March issue of *Science for the People* be a special issue geared to the AAAS meeting and the goal of introducing Science for the People to new people. Articles for the magazine were solicited, written, edited, typeset, laid out, and sent to the printers and back in the office in less than eight (yes 8!) weeks.

SftP's presence at the AAAS meeting was marked by a wide range of activities. Many of these followed the examples of previous meetings, though we were generally better organized. Over 15 leaflets were distributed, twelve AAAS sessions were "targeted", and our literature table did about \$1,000 of business. Some of the activities were new. One was the preparation of six sessions appearing as part of the AAAS official program. These sessions were well attended, many drawing overflow crowds. We also sponsored several evening sessions designed to introduce SftP and its activities. One was a presentation of the China slide show, another was an open-house for science teachers run by the Science Teaching Group. A bus tour of the real Boston was conducted by the Busing and Racism Group and was well patronized.

The tenor of our presence this year was "toned down" from previous years. Missing was the annual confrontation over the SftP literature table. This year, the correspondence between the AAAS and SftP throughout the fall and winter, resulted in an awkward but friendly meeting where we discovered that AAAS was willing to let us set our literature table in a central and prominent spot. Our presence at "targeted" sessions was also thought to be less "disruptive". The shouting matches between people on the floor wanting to question speakers and the chair which wanted to stop such "disruption" were avoided since most chairpersons followed the suggestions of the AAAS management on "How to Handle Disruptions" by allowing questions after every speaker.

Although our presence was generally successful, several shortcomings were evident. One was that the co-

ordinating committee often failed to coordinate. Chapters outside Boston, and many activity groups within Boston, were generally uninformed about the discussions and suggestions of the coordinating group.

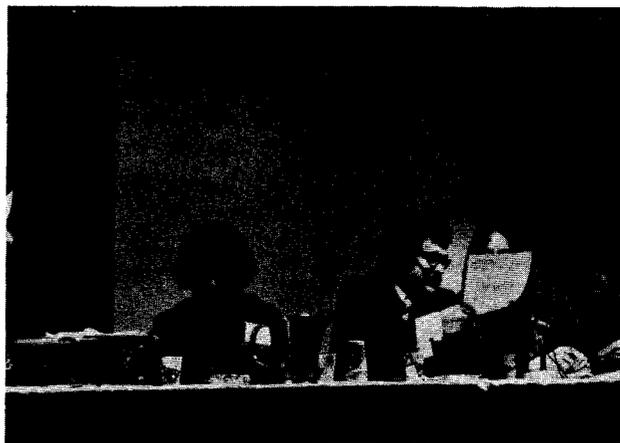
A particular example of this failure was in the selection of a "theme" for our presence. The coordinating committee suggested that our presence at the AAA\$ focus on two themes — revealing the class nature of science, and showing how the current crisis reinforces this class character. These points were never clearly presented to either the activity groups or the general membership. Real discussion on the importance of a theme, its formulation, and its use never took place. Thus, while many people were aware of the theme, few felt comfortable enough with it to make it an effective tool in our work at the convention.

Another problem centered on the roles of leadership and democracy. The coordinating committee was somewhat isolated. SftP general membership was never introduced to its composition or informed of its discussions. (The isolation was somewhat reduced by the inclusion of the Boston area steering committee in the coordinating committee. This connected it to some of the activity groups.) Consequently, decisions made at the AAA\$ meeting appeared to be arising from some powerful, central committee held to be above criticism. At the first several days of the AAA\$ meeting, this high-handed behavior was the source of conflict and irritation. Since the coordinating committee had decided not to schedule the usual evening planning meeting, it appeared that an attempt was being made to subvert the organization. By Friday evening, the meetings of the coordinating committee were publicly announced, and people from outside the Boston area were encouraged to attend. A general meeting to discuss and criticize our presence at the convention was scheduled for Saturday evening. This meeting was well attended, and helped iron things out.

We learned a lot from our work at the convention. We saw the impact of the whole organization focusing its efforts (or trying to!). But while being well organized is very important, it will only work if everyone knows and chooses the overall strategy and leadership. We also need more education within Science for the People around science and political issues. At the same time, the level of political understanding of the attendees at the AAA\$ meeting was much higher than in previous years. On the last evening, the SftP meeting for new people proposed, wrote, and distributed a petition protesting Rockefeller's address to the AAA\$.

At the AAA\$ meeting, we met a lot of people who are interested in working with Science for the People. We have names, chapter contacts, and a national organizing committee. We have activity groups and ideas for new activity groups. It is important that all of us help bring the two together; that we all take part in building a science for the people.

Steve Cavrak, Mike Teel
AAA\$ Coordinating Committee



Overall Assessment II: A Critique of SftP Activities at the Boston AAA\$ Meeting.

Despite concerns about the elite nature of participants at recent AAA\$ meetings and about the dangers of adopting a nonconfrontational, liberal strategy in an effort to appeal to this audience (see for example *SftP* Vol. VII, No. 2, p. 20.), the consensus in SftP is still that there are many people attending AAA\$ sessions who would be receptive to a radical analysis of science-related issues. Not only did we decide once again to participate, but for the first time members of SftP arranged several sessions as part of the official AAA\$ program!

As participants in this and past AAA\$ actions we wish to urge that we engage in a serious evaluation and self-criticism of our efforts in Boston so that our planning for involvement in future AAA\$ (and other large) meetings will be better informed. We offer the following criticisms and suggestions in that spirit.

Planning for the meeting. As usual it seems that this task was left in the hands of a very small group of people who, despite hard work, could not do all that was needed to be done. Pre-meeting publicity was very poor and those of us outside of Boston received very little information either about the SftP sessions or other planned activities. The coordinating committee suffered from the fact that they were working without any clear political organizational guidelines. It seems that they responded to this fact by allowing each SftP AAA\$ organizer to do his or her own thing. An alternative would have been to attempt to do some coordination on the basis of our experience at past meetings. (For example there should have been a clear policy with respect to a limit on the length and number of scheduled talks to insure a format that encouraged maximum participation.)

The SftP Table. For the second year in a row we managed to persuade the AAA\$ to give us a prime location for our literature and information table. The table was a constant focus of attention — we sold much literature, collected many new names and addresses and

publicized our activities. Unfortunately not everyone who staffed the table was well-informed about what was going on. In certain cases some individuals seemed to be pushing their own favorite activity to the exclusion of the other events planned for that day. A bit more organization here, and again some guidelines, could improve the political impact of what is probably our most important activity at such meetings.

Evening SftP Meetings. At previous AAA\$ meetings SESPA/SftP held nightly open meetings to criticize the actions we had engaged in and to make final plans for the next day's events. Frequently these sessions lasted long into the night and were inefficiently organized. Chairpeople permitted repetitious unfocused discussion. Nevertheless, these sessions invariably attracted many prospective new members who could clearly see the difference between the closed "efficient" planning of the AAA\$ elite and the political process of open discussion and criticism which characterized SftP.

Unfortunately the coordinating committee made the serious error of abandoning rather than reforming these vital sessions. In the interest of efficiency the format for the one planned open evening get-to-know-us meeting consisted of brief introductory statements by Boston project group representatives followed by *announcements* of the events for the next day or two which had been decided on at a poorly advertized planning meeting open only to SftP members. Following this, the meeting was divided into discussion groups around topics related to Boston SftP's present activities. There was no opportunity for criticism or discussion of what we were doing at the AAA\$ meeting. By choosing effective chairpeople and carefully planning the agenda a coordinating committee of SftP can do a great deal to make open meetings more effective and less frustrating without sacrificing vital aspects of our political process.

In response to criticism the coordinating committee did call one open evening meeting. Despite the fact that it was not very well publicized, and that it was a Saturday evening, attendance was quite good. The session was well planned and effectively chaired. About 50 people including several newcomers spent about two hours in a lively critical discussion. We should recognize that our training in this society has prejudiced us in favor of "efficient" top-down decision making. Unless we learn to value universal involvement in the political process and commit ourselves to accept the responsibility and to learn the discipline necessary to make it work, we are not going to do very much in the effort to build a society in which science can serve the people.

Official SftP Sessions. In terms of choosing significant topics that would attract a sympathetic audience, we were for the most part quite successful. Most of our sessions were well-attended and the rooms that the AAA\$ scheduled for us proved to be too small.

Unfortunately it was in these best-advertized and most carefully planned events that our lack of political guide-

lines was most apparent. A primary aspect of our political attack on the AAA\$ over the years has been our attempt to point out through every means from confrontation to counterexample that the typical AAA\$ session involving long speeches by "experts" with little opportunity for participation or criticism by the audience is a model for what is wrong with science as it is organized and practiced here. How then can we justify the fact that in at least two instances our own sessions differed only very slightly from this oppressive format? (By contrast, our session "Research for the People" involved very brief introductory talks followed by lively small group discussions and a sum-up of the results of these discussions.)

We *must* adopt guidelines that will prevent future session planners from doing-their-own-thing. It is surely possible to introduce well-documented factual arguments and direct and focused discussion without relying on long-winded "expert" speakers who would take offence at the requirement that the content and style of their presentation be subject to approval by a SftP session-planning committee.

Press Conference. The SftP press conference, from all reports, suffered seriously from a lack of preplanning. We must be very careful about any official presentation we make to media reporters. If we choose to schedule press conferences in the future, it is essential that they be preceded by serious politically conscious planning.

Target Sessions. As in previous years, several AAA\$ sessions were selected each day as targets for political activity. In the past our involvement ranged from orderly participation in the discussion (if there was any) to disruption and attempts (often successful) to reorganize the session. This year, perhaps because of our new role as official participants, we refrained from anything more disruptive than some pointed questioning of speakers. Our effectiveness in this aspect of our activity would have been enormously increased if we had selected the target sessions several weeks in advance. This would have provided the opportunity to do some research on the speakers and decide on appropriate tactics. In general too many sessions were selected and we spread ourselves too thinly.

Sum-up. We think our decision to continue our activity at AAA\$ meetings was and is correct. There were many people at this year's meeting who were willing to listen to what we had to say. However, it is essential if we are to be a progressive political force that we agree on political principles to guide our future actions. This does not mean adopting a sectarian set of abstract principles of unity. It is precisely in the context of our concrete practice — based on past experience — that it is possible to establish principles that we can be guided by and around which we can unite.

Ted Goldfarb, Stony Brook;
Eric Entemann, Bob Shapiro, Boston

BATTLING ON ENERGY

Several "setbacks" have recently befallen the development of nuclear energy — the clean, cheap energy panacea we've been promised since the 1950s. In the past 2 years utilities have cancelled or delayed construction on the equivalent of 130 power reactors (compared with 56 now in operation). Key research projects have been scaled down or abandoned (e.g. Gulf General Atomic's high temperature gas-cooled reactor), and some major nuclear-fuel suppliers have reneged on long term supply contracts (Westinghouse, United Nuclear/General Atomics).

The slowdown in nuclear power partly reflects [1] reduced demand (largely brought on by skyrocketing utility rates following the hike in oil prices), [2] escalating costs of construction and of nuclear fuels, and [3] related financing problems; it also reveals the impact of protracted campaigning by environmental and nuclear-safety groups in exposing the technology-run-amok that nuclear power has come to represent. Besides the immediate threat of local catastrophe from a reactor failure, there is the increasingly ominous and unsolved problem of nuclear waste disposal. The spectre of a plutonium economy with hundreds of large-scale breeder* reactors and a world-wide traffic in plutonium and in spent fuel for reprocessing, has actually made some "responsible" officials and business "leaders" uneasy. Recently *Business Week*, not in the habit of knifing future growth industries, has blown the whistle with an editorial which concludes: "The U.S. should put the brakes on the breeder program and push hard for fusion." (BW, 11/17/75)

Bringing nuclear power under mass scrutiny, forcing a slow-down with attention paid to critical issues, is a real victory for the people. In this light, the June 8 referendum in California on nuclear power is a pivotal confrontation as a variety of organizations, and their base of popular support, take on the utilities and energy monopolies and their big-money media blitz. This struggle must continue and grow, on an international level, if the global energy brokers are really to be denied free reign over nuclear energy — especially breeder based — with all its implications for safety, the environment and geopolitics (restoring energy monopoly to the imperialist powers). However there are several other energy fronts where we must also be active; success in limiting emphasis on fission will further intensify the rapacious development of coal, the international scramble for oil, and excessive reliance on new technology spectaculars e.g. fusion power.

Regarding coal, for example, huge increases in output are going to occur under any future energy plan. It is crucial that both environmental, and worker-safety, issues take top priority here because a powerful alliance could be cemented between workers in coal mining and processing, and working people in general, providing unity is achieved on safe working conditions on the one hand, and environmental protection and energy availability on the other. (At present mine safety is stalemated, large-scale strip mining is stalking the western states, and coal liquification/gasification is on the drawing boards with a new crop of hazards, e.g. carcinogenic synthetic fuels.) Politically conscious science workers should thus help create popular support for aggressive struggles by these workers in the context of a progressive energy program.

As for new energy-production technologies, we should point to those areas where major gains promise not profit and control for the monopolies but dependable, environmentally sound sources; projects that depend less on extravagant technological gambles and more on systematic exploration and nuts-and-bolts development work with broad potential for applications using widely available skills, facilities and resources. These areas, largely neglected, include solar heating, cooling and power generation, solid-waste utilization, clean coal combustion and energy storage. Not only does this approach offer a more certain contribution to energy security, but focusing on it will help expose how business and government define research priorities generally.

*reactors designed to produce both power and plutonium from uranium fuel.

Energy conservation is the most important part of a progressive energy program, as it requires the total redesign of an economy based on "cheap" stolen energy and planned for private profit. Most immediately this implies the coordinated development of mass transit of all kinds, the construction of new buildings and modification of existing ones for energy efficiency, the reorganization of urban and rural living, the elimination of energy-wasteful production processes (frequently developed to displace workers), and the reversal of the trend in agriculture toward massive energy-dependence. Mass consciousness of the inherent design failures of the system (from the people's viewpoint), and organization based on the common interests of working people (including decreased growth in energy demand), would be a real threat to the rulers of the industrialized societies. It would again present opportunities for science-related people to ally with other working people: for example, unemployed construction and production workers, harried commuters, and both city-dwellers and rural people in general whose well-being requires not only the redistribution of income and political power but also the redesign of society itself.

continued from p. 3

reasonable people will be flexible enough to accept new views of man and adjust their political positions accordingly. Dogmatists, on the other hand, will insist upon letting their ideology dictate scientific facts, in the manner of William Jennings Bryan at the Scopes trial.

This does not mean that scientists should proceed without political guidance. The state, ever eager to apply the resources and prestige of science to its own ends, must be constantly pressured by the people to investigate and treat problems, such as sickle cell anemia, that it would just as soon ignore. But instead of trying to affect the course of scientific research, the left in general and Science for the People in particular waste their energies in futile and mindless attacks on scientific findings which would require only minor and ultimately constructive ideological adjustments to accommodate.

As a scientist who appreciates the constructive force of research on man and his potential, I would love to work with fellow leftists on redirecting the national priorities in research. But I find no ally in People against Science.

Glenn Weisfeld
2606 N. Racine Ave.
Chicago, Ill. 60614

To the members of Science for the People:

I write to suggest that SESPA is being misled by its Sociobiology Study Group. Let me stress first that in the continuing criticisms of my book *Sociobiology: The New Synthesis* made by the group, for example in *Science for the People*, 6 November 1975, racism is not the issue; this charge has not been made, and two of the faculty members (J. Beckwith, R. Hubbard) have had the decency to state in public (*Harvard Crimson*) that the book is not racist. What is at issue is "genetic determinism": whether humanity as a whole has built-in constraints — whether, in other words, human nature has any genetic foundation. I have argued that it does, although like the great majority of otherscientists I have emphasized that human behavior is enormously plastic and that cultural evolution plays the dominant role. The Sociobiology Study Group is simply in error when they argue that my views support the status quo. Their own theory is equally open to such an interpretation.

The position of the Sociobiology Study Group is radical environmentalism, the belief that human behavior is infinitely

plastic and that *all* social evolution is cultural. This is not the consensus view of the radical left. Herbert Marcuse has argued strongly against it (*Eros and Civilization*, 1966), and Noam Chomsky regards it as dangerous, promoting the establishment of either fascist or pseudo-socialist dictatorships (*Reflections on Language*, 1975). Thus, other prominent members of the left see in radical environmentalism the very menace that the Sociobiology Study Group profess to see in my book. I suspect that Marcuse and Chomsky may be closer to the truth.

To complete the irony, no persons or groups of political persuasions other than the radical left have tried to draw political conclusions from my book. Only the Sociobiology Study Group have promoted this idea. One supposes that if they keep it up, some person or group on the right will in time unfortunately come to believe them. All I can do here is to urge other members of SESPA to do their own reading and to draw their own conclusions on the matter.

Edward O. Wilson
Harvard University
Cambridge, Massachusetts

A Response

There are two issues raised in Professor Wilson's letter we wish to respond to. The first is the issue of "genetic determinism" vs "radical environmentalism." Wilson either misunderstands or misconstrues the latter as representing our position. In fact, our position is that the complex human behavioral characteristics Wilson and the sociobiologists are trying to biologize are simply not amenable now nor in the foreseeable future to a meaningful biological or evolutionary analysis. We are not saying that genetic and environmental factors do not exist or that they do not affect human behavior in an important way. However, one simply cannot separate out the genetic, environmental and cultural factors affecting most human behaviors [1,2,3]. Furthermore, theories about those aspects of human nature which might be important in formulating social policy have no means whereby they can be tested [4,5]. This hold for genetic theories as well as for environmental ones.

A position on the constraints operating on much of human nature, then, cannot possibly be based scientifically on either a genetic or environmental hypothesis. Thus, a stance on what changes in social arrangements one can or should work for must reflect a political position and political assumptions. This is equally true for the sociobiologists as it is for us. Changes we have observed in our own social behavior, in that of people we work with, and our observations of human history and contem-

continued on p. 41

NEWS NOTES

LAB SAFETY FIGHT AT WISCONSIN

The University of Wisconsin's McArdle Laboratory, (an internationally renowned basic cancer research institute with a \$3-million budget of which 90% is obtained from federal sources), is subjecting some of its own employees to the hazards of cancer-causing chemicals, according to a group of U.W. staffers. The Specialist Organizing Committee, which is working to form a labor union to represent the 1500 University employees classified as "specialists", has petitioned the state Department of Industry, Labor and Human Relations to investigate alleged violations of safety and health regulations at McArdle's Department of Oncology (Cancer Research) and the Departments of Chemistry, Biochemistry, Physiological Chemistry and Pharmacology.

A McArdle spokesperson conceded that laboratory conditions there are "not as good as they should be" but said the department was working to correct them. A DILHR spokesperson said that the state agency was "Committed to looking at this situation" and may conduct unannounced inspections.

Among the alleged violations: laboratory hoods that fail to provide ventilation of carcinogenic (cancer-causing) chemicals; lack of a medical surveillance program for employees using hazardous chemicals; and lack of shower facilities for workers exposed to the chemicals. According to the Specialist Organizing Committee, the University's own precautionary guidelines fail to meet state safety and health regulations. The

state regulations spell out specific ventilation rates for air drawn through laboratory hoods, but the University guidelines for chemical carcinogens speak only of "properly ventilated" hoods. Some of the hoods at McArdle's discharge "potentially contaminated air directly in the face of the worker."

The Committee has uncovered a contradiction in the reality of human science research at U.W. Although the purported aim of the basic and clinical research programs is the advancement of human health care, the U.W. as an employer fails to provide an adequate occupational health and safety program for the several thousand people working in its research laboratories.

(The Capital Times, 12/10/75)

WOMEN ESPECIALLY ENDANGERED BY INDUSTRIAL CHEMICALS

According to the *N.Y. Times*, 3/13/76, there is a growing awareness among scientists, university researchers, labor leaders and industry executives "that hazards in work may damage the reproductive process of women and, apparently to a lesser degree, men." Recent studies have indicated that "chemicals and other hazards faced by women working in such places as hospitals, beauty parlors, and factories may account for an increasing number of the tens of thousands of miscarriages and birth defects occurring each year in the U.S. In addition to damage done to the fetus when the pregnant woman goes to work, conditions found in some workplaces may also cause genetic damage to men, which may also lead to more spontaneous abortions, still births, deformed children and abnormalities in future generations.

On Jan. 28, a study by five Government scientists was made public that showed that the wives of a sampling of workers who came in contact with vinyl chloride had twice as many miscarriages and still births as the wives of workers who did not handle the material. The study was

done in the Pottstown, Pa. plant of the Firestone Tire and Rubber Company.

MEDICAL EXPERIMENTS BANNED

"Emotionally disturbed" children in Michigan mental institutions may no longer be subjected to medical experiments. The Michigan State Department of Mental Health, responding to a lawsuit filed by Michigan Legal Services attorneys with the assistance of the Southern Poverty Law Center, agreed to implement regulations preventing the use of children as guinea pigs.

Previously, some children committed to state mental hospitals underwent experiments including regular doses of zinc to effect accelerated growth; administration of untested mumps and rubella vaccines; and administration of anti-epilepsy drugs to both epileptic and normal children.

*(from Southern Poverty Law Center
—Poverty Law Report)*

UNITED FARMWORKERS— The Struggle Continues

The UFW is looking for five doctors to service four clinics in California and one in Florida. These clinics are working with, and developing health care programs consistent with the farmworkers' goals of self-determination. They train farmworkers to become part of community health care teams so that preventative medicine becomes a reality in the lives of all workers. For more information, contact: United Farm Workers of America, 331 W. 84th, NY 10024.

The boycott of grapes, non-UFW lettuce, and Gallo wines (from Modesto, Ca.) is continuing until all farm workers of California are signed under contracts. Everyone is also asked to avoid buying products of Sunmaid and Sunsweet. Thanks to the "influence" of these huge corporations, union elections have been stopped. No elections means no contracts. The sooner contracts are signed in California, the sooner farm workers on the East Coast, brought over here

mostly from Puerto Rico, will be organized and receiving union benefits. The migrant camps on the East Coast are known to be under slavery conditions.

The lack of safety precautions in the use of pesticides in southern Florida's vegetable fields has taken the life of Ellis Revere, a 22 year-old Black farm worker. Without the benefit of protective measures on his hands and face, Revere was ordered to mix several buckets of Phosdrin, Taxathene and Mahab, all highly toxic. Within hours, he became ill and died. Very little can be done once the pesticide has entered the body; it begins to affect the victim within 15 minutes of ingestion. The pesticide can be ingested into the body through the skin, respiratory system or digestive system. Since the chief method of combating the pesticide poisoning is to avoid contamination, the UFW has issued a warning to all workers in the area to avoid contact with the deadly pesticide.

According to the UFW, the fault lies with the growers in not providing the necessary safety equipment for the workers nor in educating them about the dangers involved. Because of the growers' "commonplace negligence and underlying racism", there have been many incidents of pesticide poisoning in the area. Workers have been sprayed in the fields or have been sent to work in freshly sprayed fields. Living quarters have been contaminated and pesticides are often left or stored in places accessible to small children.

Akwasasne Notes/cpf



May 1976

Pesticide poisoning seriously affects over 75,000 farm workers every year in the U.S. Currently, the 20-40,000 farm workers laboring in southern Florida are unorganized.

(Guardian 4/21/76)

POLITICAL PRISONERS

Filipino nuclear physicist Roger Posadas was arrested January 22, 1976 by Philippine authorities. Posadas is a "nationalist, democratic activist, and revolutionary", who went underground in 1971 when the Philippine dictator Ferdinand Marcos suspended the writ of habeas corpus, and arrested and imprisoned hundreds of anti-imperialist Philipinos. The *Philippines Research Center* is asking all groups sympathetic to the Philippine National Liberation Struggle to write or demonstrate support for Roger Posadas and other political prisoners in the Philippines, against the Marcos fascist dictatorship, and demand their immediate release.

(Philippines Research Center, Box 71, Mansfield CT 06251)

AGHAM BAYAN

Agham Bayan (Science for the People) is an underground magazine published by the *Liga ng Agham para sa Bayan* (LAB), or League of Science for the People, a group of scientists and technologists who joined the underground upon the declaration of martial law in the Philippines in 1972. The magazine is anti-imperialist. It offers general analysis of imperialism and its ugly features in the Philippines, assessment of the state of science in the Philippines, the role of scientists and technologists in the national democratic revolution and news and analysis of the liberation struggle, particularly the armed struggle in the countryside.

Unfortunately, being an underground newspaper, it does not have an address. The recent arrests in the Philippines have disrupted its publication somewhat.

(Letter from Tambuli)

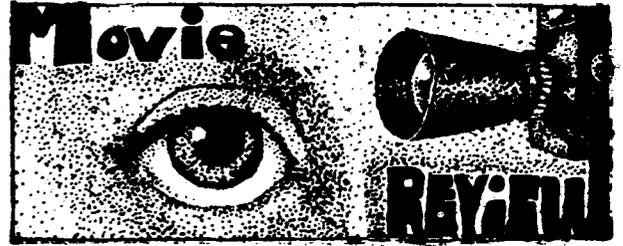


REPRESSION IN URUGUAY

Jose Luis Massera has been a leader of Uruguayan mathematics. He was Professor of Mathematics in the Faculty of Engineering of Uruguay from 1943 to 1973. He is also a long-time member of the Communist Party of Uruguay, and became a member of its Executive Committee in 1955. He was a Communist representative in Parliament 1963-66 and 1967-71.

In the 1971 elections, a united front of Communists and Christian Democrats (Frente Ampli) gained the majority in both houses of Parliament. However, in June 1973, the President of Uruguay, Juan Maria Bordaberry, with military support, disbanded Parliament and banned all political activities. A warrant was issued for Massera's arrest and he was arrested in November 1975 for "dissent" and for being "the military and political leader of the outlawed Communist Party" which was alleged to be preparing for "armed insurrection". However, Amnesty International has adopted Massera as a prisoner of conscience — a designation it never gives to prisoners it believes have been engaged in violence. Since his arrest, Massera has been held incommunicado, and he is presently in a military hospital suffering a broken leg as a result of beatings he received from his captors.

(Letter from a group of radical Mathematicians of the American Mathematical Society)



ONE FLEW OVER THE CUCKOO'S NEST: FLOWERS AT BUCHENWALD?

The movie *One Flew Over the Cuckoo's Nest* is a powerful and moving statement. It accurately communicates how psychiatric institutions are used to control people, how punishment is disguised as "therapy", and how psychiatry robs people of spontaneity and self-determination.

The ideological justification for psychiatric indoctrination and control rests on the "medical model of mental illness". Feelings of terror, anger, and despair, which are natural responses to the pain of living in an unjust social system, are treated as "diseases" which can be "cured" with medications and other "treatments". Psychiatrists today have the power to lock people up and experiment on them, similar to the ways Nazis conducted experiments on concentration camp inmates, purely on the basis of pseudo-scientific "diagnosis" and "predictions of dangerousness". Very appropriately, this pretense of objectivity was mocked in the film's staff conference scene.

But compared with Ken Kesey's novel on which it is based, or the documentaries *Hurry Tomorrow* and *Titticut Follies*, the movie is sugar-coated and joke-infested. Psychiatric institutions are not funny, and psychiatric prisoners are not Amos 'n Andy. Except for McMurphy (a working class kid) and Chief Broom (a native American), the inmates are portrayed as incompetent clowns. Kesey presents the institution as totally oppressive, but the movie shows it to be liberal, though misguided and at times cruel. Extreme injustice is limited to two sensationalistic scenes — the shock treatment and lobotomy. This distortion leaves the impression that all would be well if we only eliminated these "abuses".

The film-makers revealed their liberal bias when they allowed the premiere in many cities to be a benefit for the Mental Health Association — which is a principal lobbyist for the institutions Kesey attacks. They have reinforced the moderate reformist aspect of the movie when they have spoken with the press. For example, Milos Forman, the director, is quoted as saying, "We set the film in 1963 because so many changes have happened in hospital techniques. For instance, when shock treatments are

given, patients are filled with drugs so they don't feel anything, and lobotomies are no longer given at many hospitals."

In regard to these "improvements", John Friedberg, M.D. has this to say on shock treatment: "While an electrical storm rages unabated in the brain, these drugs suppress its outward manifestations, sparing witnesses the terrifying spectacle of the body's violent spasms. These 'improvements' are like the flowers planted at Buchenwald . . . Besides . . . the muscle paralyzer can cause prolonged failure to breathe and cardiac shock. The muscle paralyzers may also intensify the horror of the patient's experience . . . Barbiturates increase the chances of death by choking. Although they do produce sleep, they do not bring a complete loss of feeling . . . One man reported, 'All you're aware of is this jolting pain going through your mind like an electric crowbar'" (from *Psychology Today*, Aug. 1975).

Even worse, there is not one word in the film about the side-effects of psychiatric drugs and shock. An estimated 200,000 people a year are administered shock in the United States. They are seldom told that shock often causes permanent brain damage, including permanent memory loss. Nor are they told about the confusion, disorientation, severe headaches, nausea, etc. that usually result when 100 to 175 volts of electricity is passed through the brain. The film does show accurately how shock is often forced on people against their will.

The effects of psychiatric drugs can be equally devastating. They have caused widespread permanent brain damage, Tardive Dyskinesia (a Parkinsonian-like disease for which there is no cure), and death. Most people do not want to take the "heavy tranquilizers" because of their effects, but are forcibly injected if they refuse. Once the body becomes adjusted to them, they are as difficult to kick as any other addictive drug. Many of the symptoms which people think are signs of their own or other people's "mental illness" — dry mouth, swollen tongue, constipation, blurred vision, cloudy thinking, impaired speech, drooling, shuffling, inability to sit still, weight gain, increased depression, etc. — are really ef-



fects of these drugs (see *Physician's Desk Reference*). Psychiatric drugs are Big Business. More than 5 billion doses of "tranquilizers" are manufactured each year in the U.S.

Psychosurgeries — "laundered lobotomies" are still common. Though the name is different, the purpose is the same: destruction of healthy brain tissue to control feelings and change conduct. The victims are turned into mindless zombies in many cases, depending on the extremity of the procedure. And psychiatric drugs are still used in massive doses on over 90% of inmates.

The movie further weakens the political impact of Kesey's work by eliminating all mention of "The Combine", Chief Broom's vision of the corporate power behind Big Nurse that profits from violence and exploitation. As Kesey commented in a phone conversation, "They squeezed the madness out of it and turned it into a freak show . . . *Cuckoo's Nest* is about the fact that America is haywire, and the Indian is a blotter catching all this poison. But that's missing from the screenplay." Not surprising, given the fact that the film was financed by the Trans America Corporation.*



*Transamerica Corporation: the second largest "non-bank" financial corporation, which owns United Artists, American Life Insurance of NY, Budget Rent-a-car, Transinternational Airlines, Occidental Life Insurance, and about 20 other companies.

The book itself is not without flaws, however, and these flaws carry over into the movie. Written in the early sixties, the book is both sexist and racist. The most obvious villains are the white, female Big Nurse, and the black, male orderlies, while the shrinks, who in reality have much more power than nurses or orderlies — are weak, sympathetic figures. In fact, women and Third World people are the people who are most oppressed in psychiatric institutions, both as "patients" and as workers. Two-thirds of those locked up in psychiatric institutions are women, and a disproportionate number are Third World.

Both the film and the book are also incorrect in suggesting that inmates are free to leave at any time. Many inmates who are technically "voluntary" would be detained if they tried to leave. Others are coerced into remaining "voluntary" through threats of worse consequences if they refuse to "co-operate". Combined with the large numbers of inmates who are, in fact, "involuntary" patients, the vast majority of psychiatric inmates are prisoners.

The atrocities of *Cuckoo's Nest* however, were true and are true.

Network Against Psychiatric Assault—N.A.P.A.

For more information about psychiatric oppression, contact N.A.P.A., 2150 Market St., San Francisco, Ca. 94114, 415-626-6111. The N.A.P.A. newspaper *Madness Network News*, is available for \$4.00 a year.

ABOUT THIS ISSUE

The new description of the organization, magazine, and editorial policy, on page 2, is intended to introduce the magazine to a wider audience and spell out important aspects of its operation. Because readers of the magazine are urged to submit material for publication, we felt that ready availability of the guidelines and editorial policy is important. This description of the organization, as it is, will evolve in response to comments from, and changes in, the organization.

The Current Opinion feature, beginning with this issue, is conceived as presenting concrete, timely positions on issues relating to science and technology and representing some degree of informal consensus within SftP. There will be space for one or more of these short essays from the readership-membership. An effort will be made to have these positions reviewed by relevant, established activity groups or chapters prior to use. Subsequent debate through published correspondence and articles may result in new positions appearing as Current Opinion in later issues. Hopefully such discussions will stimulate ideas for new articles as well. Here are some examples of other topic-areas in which specific, proposal-related essays could be written: cancer research objectives, environmental toxicants, human experimentation, fetal research, retreat from affirmative action, technology assessment, academic freedom, medical ethics, actions of regulatory agencies, and so on. The Current Opinion in this issue, "Battling on Energy", was prepared by the Editorial Committee as the first in what we hope will be a continuing series written by members and friends of Science for the People.

The "Nuclear Power" article was originally a pamphlet, produced by the Berkeley chapter of Science for the People, to organize support in the struggle for nuclear safeguards in California, and to counter the massive media onslaught of the energy cartel. Since the pamphlet was written for broad use, strategic questions could not be fully analyzed. What follows are some questions we felt should be studied with reference to the article.

As the pamphlet shows, the struggle for nuclear safeguards in California must be part of a continuing campaign for radical social change, not a one-shot duel with the oil cartel. The *crucial question* we are continually faced with is: how should Science for the People involve itself in popular reform movements without submerging or relinquishing its goal or vision for a radically different society? In what way can we gain mass support and still

retain our basic anti-capitalist, anti-imperialist positions? Which reforms are worth fighting for and why? Should SftP direct most of its energy to such community struggles for basic reforms in the area of science and technology?

In analyzing the objectives stated in the pamphlet, with the above question in mind, we need to spell out what we mean when we say the people should take control over energy. Similarly, what is meant concretely by "democratic nationalization of the US energy industry"? Is nationalization the answer? We should examine more fully the example of AMTRAK and consider the possibilities of decentralized energy.

What sort of political movement, uniting large sectors of the population, can lead to "democratic nationalization" of energy? For example, struggles around energy reforms must deal inevitably with the question of jobs. How can we ally with workers and unions who are suspicious that such reforms mean more unemployment, as claimed by the energy industry. While a more complete analysis is necessary to counter their position, it must be emphasized that there are no economic "laws" which determine the relation between energy and jobs.

The amount of energy is certainly a factor, but it is public policy and the level of worker militancy which determines the rate of employment.

Finally, will the people significantly gain any control over the energy cartel if the safeguards are passed? Can the state's legislature be trusted? This will depend on whether the struggle ends here or continues to grow larger and challenge the basic structure and ideology of monopoly capitalism.

The review of "One Flew Over the Cuckoo's Nest" presents a now-common view, among progressive people, of the destructive treatments currently used as a last resort in mental health therapy. Some people will argue, however, that there exists a substantial number of seriously disturbed people for whom electroconvulsive shock, heavy duty chemical therapy (e.g. lithium, powerful depressants) and even psychosurgery are not only the last resort, but indeed beneficial. The question of whether or not there is any place for these treatments in a legitimate therapy cannot be answered by looking at the intractable cases produced by the contemporary mental health care system. Most therapy today avoids identifying the real problems in peoples' lives, introduces irrelevant or secondary factors as primary causes, at best promotes minimal symptomatic or functional relief, and almost never addresses the broader societal-class origins

of conflict in personal relations. In many contexts, the objectives of therapy are simply making people more manageable and less costly.

Therapy is another region of science where basic concepts and uses are direct products of the social order and its ideology. Because the conditions leading to mental "illness" are, if anything, going to get worse for most people, and pressures for technological solutions are therefore going to intensify, exploring these issues and documenting a fundamental critique of present-day therapy should become a significant focus for *Science for the People*.

In the summary of AAAS activities, we have included some excerpts from the press coverage that SftP got. While *Science for the People* has never gone far out of its way to get into the papers, it is a fact of life that the way the press presents us has a lot to do with how we're seen by the broader public. Therefore it's important to examine this coverage and evaluate our activities in that light.

This particular press coverage, moreover, is significant because it raises some troubling questions about what *Science for the People* has become. In all cases, the press presented us as a group that has given up militant tactics. In the article in *Science*, this was attributed to a 'new maturity'. In the *Washington Star*, it was explained, at least by implication, as *Science for the People* having lost its political determination and fight. We should ask ourselves: Was the lack of disruption at the AAAS due to the fact that there was nothing there worth disrupting? Had they given us everything we asked for, a free hand to question speakers and do political organizing? Or did we sell out our most effective tactic, the ability to disrupt and prevent the presentation of obviously harmful ideas and programs, merely for the sake of a respectable place on the AAAS program?

Opinions vary within SftP on the press' characterization of our actions at the AAAS, reflecting disagreements about the actions themselves and the underlying policy issues. Some members claim that SftP has fundamentally modified its approach to the AAAS. Some others (less often quoted in the press) hold that the situation has not substantially changed and that no organization-wide discussion and decisions have taken place on these matters. Thus while some people argue that past "disruption" was destructive or counter-productive, others believe that past militant action, including some disruptions, was (and still is) both appropriate and worthwhile for advancing our objectives. There is also disagreement, apparent in the two assessments, about the general operations of SftP at the AAAS. The issues include: (1) whether or not policy questions should be fully discussed and determined by all members prior to implementation; (2) whether detailed planning, review and evaluation of our activities at events like the AAAS should take place on a continuing, interactive basis, involving not only all the assembled SftP members but also friends and allies who are interested in participating

in the decisions as well as the consequent actions. There are numerous points raised in support of these various positions which cannot be described here. However the debate remains unresolved and members and/or readers are urged to contribute.

Finally, a point about future issues. The Boston chapter during the past two months has been examining sexism in our own organization. We see this sexism both in the second-class role of women within *Science for the People* and in the lack of attention we have paid in the past to issues which concern women. Most of the activity groups have discussed the interpersonal relationships within their groups, and several have decided to find ways to include women's issues in their activities. We on the editorial committee have decided to give higher priority to women's issues in the magazine. We are thus actively looking for articles written by women, articles about women in science or about how science and technology are used to keep women down, and for any other articles from a feminist perspective.

Many articles appearing in *Science for the People* have shown how political and economic power has distorted or perverted the direction of science and technology. The priorities of the capitalist ruling class in large part govern the choice of what research is done, and what form of technology will be developed. But is the *nature of science*, its conceptual structure, also determined by the requirements and interests of a society's ruling class? The article, "The Politics of Scientific Conceptualization" argues that this is the case. It claims, further, that the insight, that conceptual structure is a product of social relations, opens up an important new area of political struggle that a group like *Science for the People* should engage in; it would be a struggle about the conceptual structure of contemporary science. We would like the opinion of the reader about the force of this analysis, and the way its political potential might be realized.

Finally, a point about future issues. The Boston chapter has been spending time during the past two months examining sexism in our own organization. We see this sexism both in the second-class role of women within *Science for the People* and in the lack of concern we have shown in the past with issues which concern women. Most of the activity groups have discussed the interpersonal relationships within their groups, and several have decided to find ways to include women's issues in their activities. We on the editorial committee have also decided to give higher priority to women's issues. We are thus actively looking for articles written by women, articles about women in science or about how science and technology are used to keep women down, and for any other articles from a feminist perspective.



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society, radical scientists may begin to be able to develop alternative science concepts based on empathy with a qualitatively better society; to attempt the new possibilities for organizing data which arise out of a different world-view. The difficulties in undertaking this science/political option are formidable, for it requires identifying with a society not yet existent. We are of course fortunate in the availability of socialist societies to present us with alternative models. These can serve however, to indicate only the barest outlines, the most abstract hopes, for what we could create here. Undoubtedly it is impossible to put oneself entirely outside of one's society. To step back from it, to delegitimize it at its roots within oneself and others is immensely difficult. Yet this is a fundamental goal of radical practice and the pre-condition of radical science.

A word is necessary regarding validity in science. Concepts are not arbitrary, nor are they plastic. There is an external reality to which they must correspond. Most of the concepts in present-day science have a definite operational validity (this is not the place to explore other possible tests for validity); they are not, however, the exclusive ways to organize data. Modern science recognizes the tentativeness and incompleteness of any particular concept, the possibility that it will be transformed through further discovery. What is not readily acknowledged is that its supersession, at the level of fundamental conceptual change, is tied to social developments. In addition, scientific concepts are partial not only because they correspond to a particular social structure, as we have seen, but also because most scientists, as a relatively privileged social group, have a stake in only a partial view of their social reality. The world-view which the concepts manifest is thus that of a group barred from an over-all perspective. As partial, the concepts in present-day science have been functional both in controlling natural reality (the operational test) and in not questioning social reality.

To the extent to which it is possible to transcend the dominant world-views based on adaptation to this society, alternative science concepts may be developed now, resulting in a more creative science. This in itself, however, is not a political accomplishment. Without making explicit the political underpinnings, the alternative concepts will become simply creative reinforcements for the status quo. Radical scientists need to be self-conscious of and to show others how their concepts arise, how their ideas relate to their society and how to understand their society. Alternative concepts should be used to raise social alternatives. In science as elsewhere, the theoretical possibility and attainability of a qualitatively better society must be constantly stressed.

There has been a tendency among radicals to reject the usual posing of issues in terms of the scientist's personal or social responsibility, and rightly so. [5] Abuses of science are endemic to an oppressive social order. There is, however, a higher level of individual responsibility which comes with the awareness that concepts do not automatically derive from raw data and are socially influenced. Recognizing that there are

choices behind concepts and that these choices have political implications, radical scientists are able to take responsibility for the concepts they use. By doing so they act as precursors of a society in which consciousness is no longer subordinate to social conditions. Through their science now, they can contribute to fundamental social change.

This essay has gone nearly as far as it can. The next step would have to be a start on social analysis and restructuring of current science concepts. This should be read as a challenge to politically committed science workers to undertake that effort.[6]

Norman Diamond

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6. For the work of a contemporary natural scientist whose socialist commitment enhances his scientific formulations, see Steven Rose, *The Conscious Brain*.

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porary human societies lead us to believe that the restrictions on human social potential postulated by the sociobiologists do not exist.

We believe that our position is distinct from the biological determinists and the radical environmentalists on one additional essential point. Both schools of thought present *passive* views of humans. The biological school sees people's behavior as being shaped and restricted by their genes; the environmentalist schools sees people as vessels which are filled and shaped by "others." We oppose both approaches and believe that humans can and do *actively* and consciously create their own behaviors. They do this in interactions with each other directly and through interactions with the institutions of their culture. One cannot analyze human nature without discussing the cultural institutions which contribute to shaping it; nor can one analyze those institutions without discussing the people who create them.

The second point we would like to respond to is the statement of Wilson's that ". . . no persons or groups of political persuasions others than the radical left have tried to draw political conclusions from my book." This is simply not true. Other non-left critics, Paul Samuelson in particular (*Newsweek*), have identified the political content of Sociobiology and compared it explicitly to 19th century Social Darwinism. Furthermore, Wilson's political activities long preceded our public criticism of him. First, *any* work which purports to explain human social behavior and cultural institutions is a political work, both in its assumptions and in its impact. Second, in his own writings for the popular press, for example, in the *N.Y. Times Sunday Magazine* and *House and Garden* (Feb. 1976), Wilson has made quite explicit political statements. Through his interviews with reporters, for example, in *People* magazine and the Today Show, he has spread the message of sociobiology further still. In all cases, he has referred to the supposed implications of sociobiology for human societies.

We give just a few examples to allow *SftP* readers to decide for themselves whether sociobiology is a political issue or not:

"The perfect society, one which lacks conflict and which acts with complete altruism and cooperation, is possible only when all people are genetically identical." (*People* magazine, Nov. 1975)

"In hunter-gatherer societies men hunt and women stay at home. This strong bias persists in most agricultural and industrial societies and, *on that ground alone, appears to have a genetic origin.* No solid evidence exists as to when the division of labor appeared in man's ancestors or how resistant to change it might be during the continuing revolution for women's rights. My own guess is that the genetic bias is intense enough to cause a substantial division of labor even in the most free and egalitarian of future societies. Thus, even with identical education and equal access to all professions, men are likely to play a disproportionate role in political life, business and science. But this is only a guess, and, even if correct, could not be used to argue for anything less than sex blind admission and free personal choice." (*NY Times Magazine*, Oct. 12, 1975) (our emphasis added)

But our concern is not just an academic one about who said what, but rather that sociobiologists are making an effort to establish their theories as the basis for all sorts of disciplines with immediate social and political impact. For instance, at the recent annual convention of the American Group Psychotherapists' Association, a panel discussion was organized entitled "Termites, Apes and Man — Survival Value of Group Behavior," with Irvén DeVore (anthropologist turned sociobiologist) and E.O. Wilson as two of the three speakers. The abstract of the talks stated that "Clinicians and students of human groups will increasingly be able to base their work on foundations rooted in zoology and primatology." While Wilson was unable to participate, DeVore and the psychiatrist chairing the session ably presented this view. More recently, Wilson spoke before the Harvard Graduate School of Education Alumni College on the topic "Sociobiology: Its Implications for Science

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In addition, the theories of the sociobiologists which have been offered without scientific proof [4,5] are already filtering into the schools as fact. In the November, 1975, issue of *The American Biology Teacher*, P.R. Gastonguay argues for the establishing of sociobiology courses in high schools suggesting as one reason that ". . . several crucial dilemmas faced by our present-day human society can be quantifiably related to analogous phenomena in other animal species." Furthermore, an entire high school curriculum entitled *Exploring Human Nature* (Education Development Center, Newton, Mass.) has been written by sociobiologists and is being used in schools in 27 states. The books raise questions such as

"Why don't females compete? Why aren't males choosy?"

"How did the pair bond become a part of human nature?"

"What in our evolutionary past led to the human family?"

These questions take as given the sexist socio-political *status quo*. The structure of the book is such that students are always directed to the genetic-evolutionary explanation for social behavior.

Finally, the most recent public appearance of these theories is in a film entitled "Sociobiology: Doing What Comes Naturally." In the brochure for this film designed for high school, college and other groups, its authors, Trivers, DeVore and Wilson make the following statement:

"It's time we started viewing ourselves as having biological, genetic and natural components to our behavior. And that we should start setting up a physical and social world which matches those tendencies."

They also, in the same brochure, speak of the "male's natural physical freedom and the female's more vulnerable child-bearing nature."

Sociobiology Group

Jan. 7, 1976

Dear People,

In renewing my subscription I would like to add that I find the work being done by SESPA to be encouraging, particularly in regard to your developing political line — a rare bird in most discussions about science in North America these days.

Being involved in teaching physics (formerly in research) and in union activities in Quebec, I've come to appreciate the fundamental role that politics plays in science. Hopefully, in the future, I would like to contribute some articles to your paper based on my experiences in Canada and offer some of my thoughts on the subject. It's essential that a correct political line on science in the context of the U.S. and North America be worked out.* Unfortunately, at present, I'm totally tied up in union activities — this being a negotiating year and a strike is imminent—so I really will have to wait until I get some free time before I can get involved. In the meantime it's quite exciting reading your magazine and I hope it keeps moving in the direction it's going.

Keep up the good work.

Rick Behrman
3692 St. Andre
Montreal

*Some of your articles on science and women have been excellent.

Dear SftP,

Received free subscription of *Science for the People* and would like to extend my appreciation and thanks for making your magazine available to me.

Perhaps in the not too distant future I would like to submit input, if the same is possible. I would like to add also, some of us who are here have some lengthy discussions on your magazine, and we enjoy the same.

Thank you again.
R. Makaeku

I have been following *Science for the People* for several months now and am convinced that such a publication is desperately needed in New Mexico. My work is researching the massive energy developments planned for the Southwest for a local muckraking newspaper (Seers' Catalog). However, such research has been of little satisfaction to me since in published form it has been reaching a very limited audience and has been devoid of any consistent political analysis. The future scenario for northwestern New Mexico is grim enough — with huge coal-gasification complexes and accompanying stripmines slated for Navajo lands and a myriad of uranium mines, mills and enrichment plants for the Grants Mineral Belt. The current rush of the oil conglomerates to grab New Mexico's rich coal and uranium reserves has been excused on the basis of prospective employment which the region desperately needs. However, who shall provide the housing and social services for a population that in the Grants area is expected to swell to 100,000 over the next decade is never addressed. Environmental and liberal groups (as PIRG) in the state have only stressed the "scenic" destruction that will result from such rapid industrialization and passively hope to control Kerr-McGhee or Exxon through legal devices. No movement is being instigated to demand that the people of the state have some input regarding New Mexico's conversion into a nuclear park or Navajo lands into one stripmine. I view SESPA as an organization capable of putting forth such demands and drawing diverse segments of the populace together. Unfortunately, the Albuquerque SESPA Chapter no longer exists (its lone member, Jim Tobias, has left the area). Therefore, I would appreciate more information on SESPA's organization and its activities, particularly in the Southwest. Also, I am enclosing \$12 for a regular membership subscription. It is quite possible for me to get *Science for the People* distributed in Albuquerque and Santa Fe bookstores and after further communication this could be undertaken.

Sincerely yours,
Gabriella Uhlar
119 Park Ave., #1
Santa Fe, New Mexico

Continued from page 2

EDITORIAL PRACTICE

1. *Operations: SftP* is published through the activities of the Editorial, Production and Distribution Committees under the direction of the Magazine Coordinating Committee (whose members are drawn from the other committees). All committee members (part-time, unpaid and serving 6-12 months) and the Magazine Coordinator (part-time, paid) are from the Boston area except for some members of the Editorial Committee who are from other cities. All committees are accountable to the general membership by way of 1) the annual Northeast Regional Conference (the most regular and widely attended conference of SftP) which reviews the magazine and makes general policy, 2) the different chapters of the Northeast Region through the Northeast Regional Coordinating Committee, and 3) local chapters through selection, review and direction of their participants on the Editorial Committee. Nationwide representation on the Editorial Committee by active SftP members is encouraged.

2. *Material for Publication:* To be in accord with established guidelines, material for publication 1) should deal with issues of science and technology, from a radical perspective, 2) should raise the political awareness and involvement of the general readership, and 3) should stimulate activities of individual persons and groups and the formation of chapters, but should not generally have the character of an "organizing manual."

3. *Kinds of Contributions: Articles.* Good articles can evolve from our work and from community-based or other, political, investigation and activity. Topics may reflect research, teaching or other interests, and can take the form of book reviews, reports of events, or analytical articles. Writing done for another purpose often can be adapted for *SftP* and is welcome.

Procedure: 1) articles written for another purpose and roughly conforming to above guidelines: submit 3 copies along with a letter describing the article's origin, how it might be adapted, and whether the author(s) are willing to do so. 2) new articles: if convenient, send an outline of a proposed article so that the Editorial Committee can point out possible conflict with the guidelines and make suggestions concerning content, resource material, emphasis and magazine context. In this way, some assurance can be given that an article will be used. Writing articles collectively is encouraged. Submit articles in 3 copies. In attempting to give authors constructive criticism and support, the Editorial Committee expends considerable effort in reviewing articles and discussing them with authors. Final substantive editorial changes are cleared with authors. In discussing the magazine's content, in the "About This Issue" column, the Editorial Committee may point out unexplored questions, describe the range of opinion within SftP on a particular issue and draw some additional political interpretations of its own from the articles.

Current Opinion. Short, tightly argued positions on timely subjects are required for the Current Opinion feature. These contributions, including an occasional one from the Editorial Committee, should rely on facts and analysis generally accepted by the membership. It is the responsibility of the Editorial Committee to try to select those which best clarify the debate; this will include discussing changes with authors. Contributions should be 500 words or less, in 3 copies.

Other Contributions: Letters: contributions for continuing debate, commenting on previous magazine content, initiating new discussion, etc. News Notes: news items illustrating the social and political role of science and technology, especially reporting people's actions on these kinds of issues (300 words or less). Chapter Reports and SftP Activities: brief summaries having essentially assured publication, with editing. Graphics: all kinds, including cartoons, designs, photographs, etc., not necessarily original but with credits.

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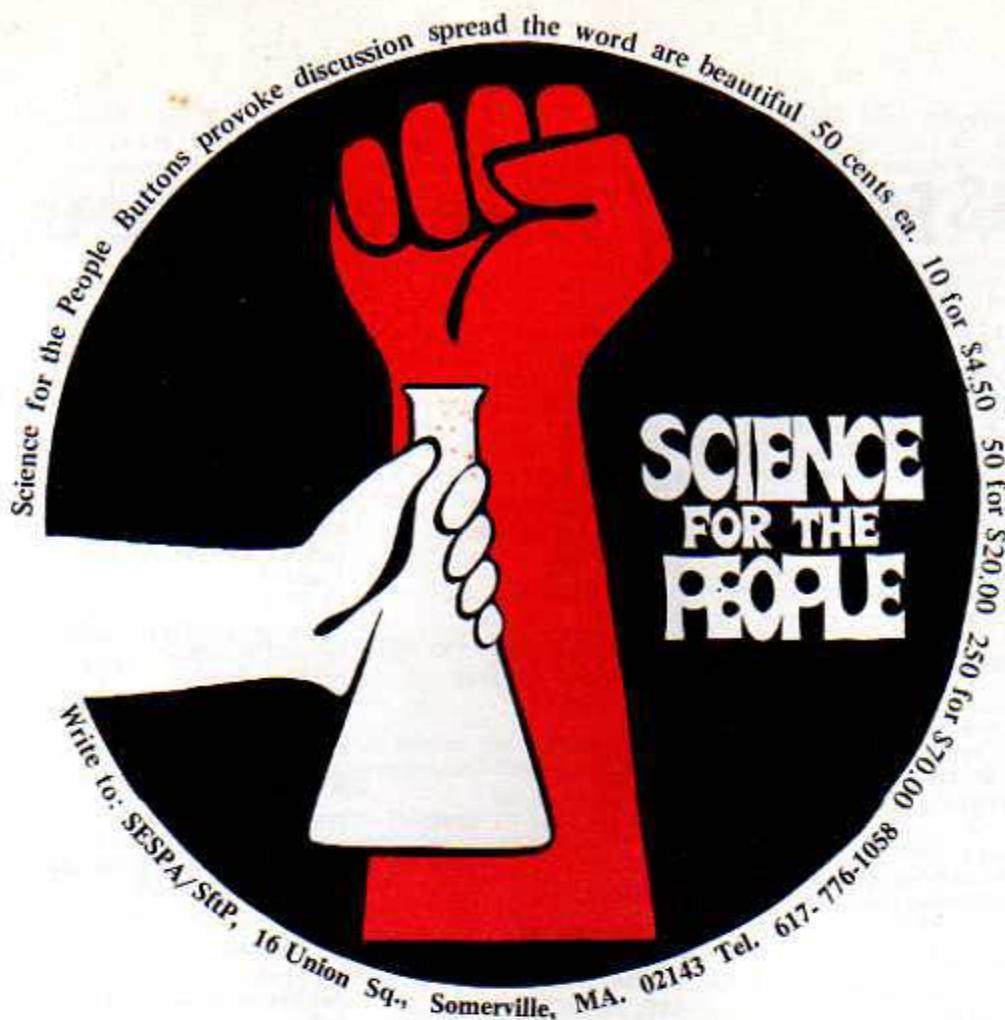
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SESPA is defined by its activities. People who participate in the (mostly local) activities consider themselves members. Of course, there are people who through a variety of circumstances are not in a position to be active but would like to maintain contact. They also consider themselves members.

The magazine keeps us all in touch. It encourages people who may be isolated, presents examples of activities that are useful to local groups, brings issues and information to the attention of the readers, presents analytical articles and offers a forum for discussion. Hence it is a vital activity of SESPA. It is also the only regular national activity.

We need to know who the members are in order to continue to send *SCIENCE FOR THE PEOPLE* to them. Please supply the following information:

1. Name:

Address:

Telephone:

Occupation:
(if student or unemployed please indicate)

2. Local SESPA chapter or other group in which I'm

active. (If none, would you like us to help you start one?)

3. I am enclosing money according to the following scheme:

- A. Institutional subscription-\$15 for libraries and others. _____
- B. Individual memberships: (1) regular memberships-\$12, (2) indigent membership-less than \$12, (3) affluent or dedicated revolutionary membership-more than \$12, (4) completely impoverished-nothing, (5) I have already paid. _____

4. I will sell _____ magazines. This can be done on consignment to bookstores and newsstands, to your co-workers, at meetings. (If you want to give some away free because you are organizing and can't pay for them, let us know)

5. I am attaching a list of names and addresses of people who I believe would be interested in the magazine. Please send them complimentary copies.

Please add any comments on the magazine or SESPA or your own circumstances. We welcome criticism, advice, and would like to get to know you.

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