

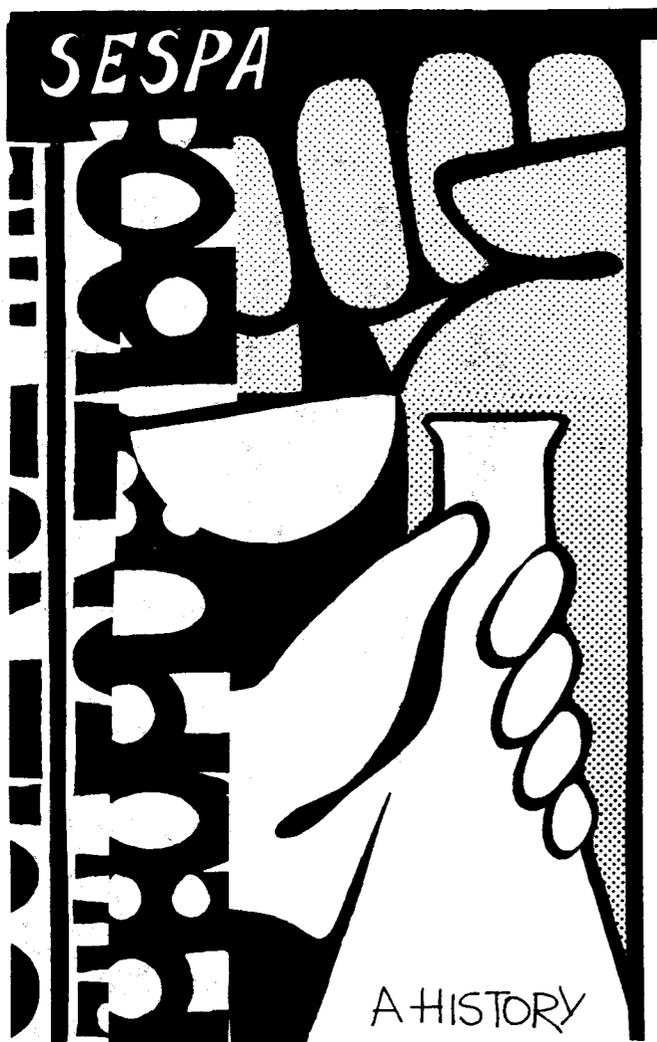
SCIENCE FOR THE PEOPLE

VOL. II NO. 4 50 cents

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**BI-MONTHLY PUBLICATION OF SCIENTISTS AND ENGINEERS
FOR SOCIAL AND POLITICAL ACTION · SESPA · DEC. 1970**



SSPA is a crazy abbreviation for an organization. Try it. Try and pronounce it. But January 1969, when Scientists for Social and Political Action came aborning, we weren't thinking much about the pronounciability of our name. Mike Goldhaber, Marty Perl, Marc Ross, and Charlie Schwartz, after a year of struggle had come to recognize that something was needed; the name wasn't important. The response they found at that January meeting of the American Physical Society (APS) surely showed that they had correctly sensed the political needs of a significant number of scientists.

With historical perspective we can see now that the movement among scientists had been germinating for several years. There was the history of Einstein, Pauling, Oppenheimer and others who had given individual moral testimony to the misuse of science. But that the scientists' organizations themselves were part and parcel of the whole institutionalized distortion of the social function of science was dramatically emphasized

ABOUT THIS ISSUE

Vol. II, No. 4 of *Science for the People* is the largest, and we think best, issue so far. In keeping with our desire to serve political action needs there are articles on some of the problems that will be (and some that won't be) raised at the AAAS meetings in Chicago, December 26-30, 1970, such as the history of AAAS, unemployment, birth control.

We have received many letters of comment or inquiry from people all over the country, especially from smaller cities, from industrially employed scientists and engineers and from people in the universities. Some representative letters are reprinted in this issue.

We would like the magazine to be responsive to the needs of our readers and members. Make *Science for the People* your magazine by sending articles, reports of activities and critical commentary to:
Science for the People, Box 59, Arlington Heights, Mass. 02175

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by the reaction to the "Schwartz Amendment" introduced to the APS by Charlie in 1967 and voted down in 1968. The amendment, which simply would have authorized the APS to take a stand on the war, clearly demonstrated that there was a *physics establishment* - and the rest of us. Many other professional societies had radical caucuses. Why not the APS.¹

By the time the organizing meeting of January 1969 was called, more was afoot. ABM was becoming an issue. Many physicists at the meeting were wearing *STOP ABM* buttons. March 4th, a research stoppage at MIT and elsewhere, was being planned. In Boston, many scientists and engineers in industry were being contacted in connection with the planned March 4th activities by a committee of industrially employed scientists working with the students. So the founding of SSPA was simply the expression of organizational need of wide-spread political activity among scientists.

The principles of the new organization were that it was to be a *nonorganization*- a group with no officers and no constraints on membership. Voluntary dues were to finance a newsletter that would keep everybody informed of other activities by means of *signed* articles. All signed articles were to be published. Local action was emphasized and volunteer organizers left the New York APS meeting to pull groups together on their home turf.

March 4th came and stimulated the movement. In Boston an industrially based group was formed. It conducted a series of shopping-center meet-the-people leaflet and petition activities that obtained coverage on all three major TV channels. There was an Anti-ABM march on the White House, and a poll at the Washington meeting of the APS realized a vote of 4:1 against the ABM. More nonphysicist scientists and engineers joined and the name was changed to Scientists and *Engineers* for Social and Political Action, SESPA. In New York a campaign at Riverside Research Institute, RRI, (still going on) sought to denude RRI of its technical staff; in Berkeley a series of activities against Livermore (still going on) ; at Stanford employees of RCA (and other contractors) formed a chapter, *Scientific Employees* for Social and Political Action. The pledge (see August issue) started in the fall of 1969 at Berkeley and was very effective at the APS meeting in Chicago in February 1970 where two radical counter sessions were run. In Boston in December 1969, students, faculty SESPA and other groups conducted *effective* actions at the meeting of the American Association for the Advancement of Science (AAAS). Out of these came a newly vitalized and enlarged Boston SESPA with the alternate name *Science for the People*.

By the Spring of 1970, no scientific professional society could have a meeting without some radical activity - American Microbiological Society, Association for Computer Machinery, etc. In the early spring the ecological issue came to the fore and SESPA people carried out many activities and appeared on several panels, radio interviews and TV programs. In the late spring, Cambodia. In the summer, the 25th anniversary of Hiroshima was marked by activities throughout the country.

But political and social action was not the only dimension. Learning through their struggles SESPA people were beginning to develop analyses of contemporary American Society and of the role of Science and Scientists. The *Sorry State of Science* symposium at the AAAS had analytical papers by Al Weinrub, Larry Beeferman and David Jhirad, as well as more topical papers by others. Various study groups had been meeting since the fall of 1968. Many expressed the need for a more thoughtful journal to supplement the topical SESPA newsletter. In the summer of this year the newsletter became *Science for the People* with the potential of serving the need for a topical organizational newsletter and also the need for a journal of analytical articles.

Today SESPA has local groups (of widely different sizes and levels of activity) in 10 cities and many other active people throughout the country (and in Europe). But we're just beginning. About 5,000 copies of the August issue of *Science for the People* were distributed and the December issue is better (and bigger). New contacts at the rate of about 15/week are coming through the mail and many local people are promising to organize where they're at And that's SESPA. Organize where you're at. We already live in a top-down society and belong to top-down professional organizations and work in top-down companies and go to top-down schools. But SESPA is bottom-up, and growing.

HF

American Physical Society meeting - New York, February 1 - 4. Participate in political actions, contact Charlie Schwartz, box 4161, Berkeley, Calif. 94704.

National Science Teachers Association meets in Washington D.C., March 28 . Bring up relevant issues such as women in science, the use of science, and the classroom as a humane place. People interested in action at this meeting contact:

George Hein (617) 969-6527
Stan Wachs (617) 527-1377

LETTERS TO THE EDITORS

Dear Herb,

"Science for the People" seems like a good job and I am sending a contribution herewith. Do you want to call it a membership while we are at it?

Read your comments on the "Pledge". To me they sounded like three good arguments (taken by themselves) that do not add up to one convincing argument. Maybe I am simple-minded, but to me this pledge speaks for itself as necessary and wise. Whatever arguments you can find against it, those in its favor are self-evident and overwhelming. Opposition to such a measure as this can only be justified by arguments of such subtlety that they distract from the real issue.

Armand Siegel
Boston, Mass.

Thanks for the issue of *SCIENCE FOR THE PEOPLE* and the button. You don't know how uplifting it is to know there are others who care. Here in mid-America it is easy to lose contact with the outside world. Send me one more button in case I find someone else out here who shares our concern. Again thanks for raising my spirits.

David Weisleder
Peoria, Ill.

Dear Fellow Scientists:

I've been trained as a theoretical chemist (quantum chemistry and all that shit) but there must be *something* useful I can do -- I want to help. Please let me know what you are doing in the Washington, D.C. area. I'll be glad to contribute some of my time to TAP.

Mike Marchetti
Arlington, Va.

Dear SESPA People ,

I have just received a lovely copy of *SCIENCE FOR THE PEOPLE* , with the cover that made waves at the AAAS in Boston last December. I am encouraged by the list of regional addresses and will try to organize scientists at Cornell.

Al Ferrari
Ithaca, NY.

Dear SESPA,

Would you please remove my name from your mailing list.

I feel sorry for people -- they are only human beings. I don't agree with any policy that tries to terrorize them with clenched fists and foul language. For a group wishing to save humanity, you have chosen a strange symbol.

Joy Lee
Athens, Ga.

Dear Brothers and Sisters,

I have just finished reading through your *Science for the People* newsletter. Right on! Please enroll me in SESPA and send me subsequent issues. As a former scientist who gave up a research career for political reasons, it is extremely gratifying to see an attempt being made to organize the scientific community around a radical analysis of their work. As long as the government and the corporations are in control of the resources which determine the applications of scientific research, scientific work can never be politically neutral. The myth of "pure" research and the slogan of truth for truth's sake have become historically outmoded conceptions. We must help scientists and engineers to understand the necessity for ceasing conventional scientific research and transforming science into an overtly political instrument for furthering radical objectives. Short of this, they ultimately will serve the ruling class, regardless of which side of the political struggle they support outside of their laboratories.

Bill Zimmerman
Chicago, Illinois

SESPA:

Here is ten dollars. It's going to break us but we have a personal interest because we were there during the AAAS performance last winter. The paper is very good. Please holler if there is anything we can do for you, like being a midwest representative. Plenty of people here to work. Environmental Response is a sort of beefed-up TAP; in fact our Environmental Response Squad takes all callers.

Stuart M. Leiderman
Box 1124, Washington University
St. Louis, Mo. 63130

Dear Sirs,

I read the reprint in *Science* (9 October, 1970) of your article entitled "Boston Museum of Science", and could not agree more. I visited the museum last Monday (Oct. 12) before reading the article and my conclusions were exactly the same.

I had not visited the museum for 10 years or so, and except for the crap in the NASA exhibit, nothing had been changed or added. At one time (late 50's) there was an excellent Saturday youth program called "junior explorers", but I was told this type of activity was no longer free.

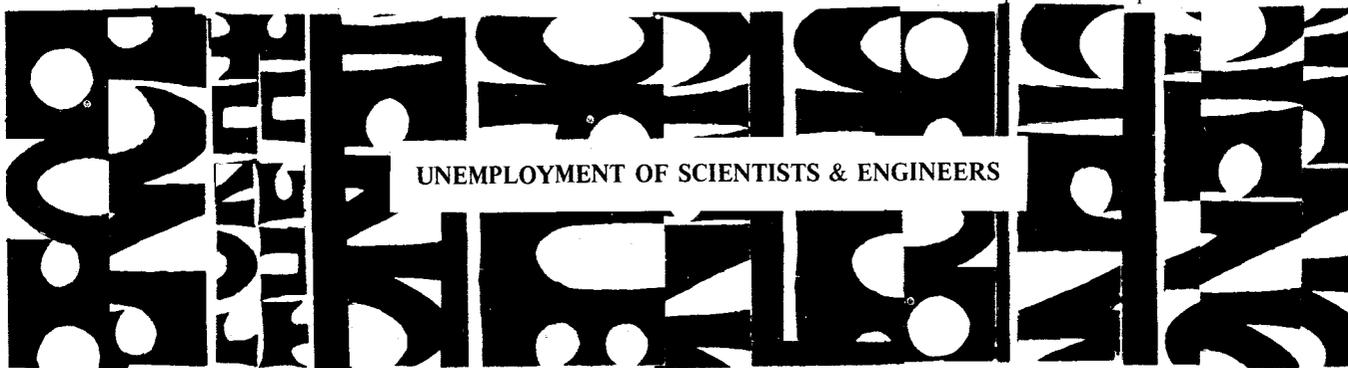
I used to think that Washburn was more or less aware of what was going on, but I doubt it now. Sorry to bore you, but if you are still publishing *Science for the People*, send me a copy of it.

Joel Davis
DeKalb, Illinois

Unemployment in the United States rose to 5.5% in September of this year and there is every indication that it will increase further. The last time a similar level of unemployment prevailed was in the early sixties before the escalation of the Vietnam War. However, in today's situation a new dimension has been added. It is no longer only the unskilled who find themselves out of a job, but also more privileged workers such as technicians, scientists and engineers, and other skilled workers. Dean Bisplinhoff of MIT recently stated that of America's one million engineers, 60,000 are out of work, 6%. Official projections for the Massachusetts electronics belt, Route 128, estimate 25,000 lay-offs in the next two years in addition to unemployment that has already tripled in the last year. On the West Coast unemployment in the aerospace industry is also high among more privileged workers. The daily newspapers abound with accounts of large-scale layoffs and of individual cases illustrating the general problem.

uates to these alternatives. Just consider the following quotes, "The AIP (American Institute of Physics) reported that 'it is not unusual today for a young man to apply to over 100 universities and industrial research laboratories and receive only one -- or in some cases no -- job offer' " 1

Also "Ph.D. watching" became a favorite past-time to substantiate the random nature of incipient unemployment. On May 22, *Science* 2 reported on a study showing that only around 1% of the 1968 and 1969 science Ph.D.'s were unemployed. However, the study did not adequately account for the fact that the percentage of people holding post-doctoral fellowships doubled during that time. Likewise the criteria for "suitable" employment that most of the graduates were supposedly engaged in were not spelled out. (What about the physics Ph.D.s who are now teaching high school?) The 1% figure creates the illusion that all is well as long as departments can somehow place their "products." But it



UNEMPLOYMENT OF SCIENTISTS & ENGINEERS

How are these developments explained in the press and by the scientific establishment and how valid are the explanations given?

Generally they now acknowledge that the crisis in scientific employment stems from space and defence cutbacks and cuts in academic funding by government. Since these structural causes were apparent from the beginning of the year, it is surprising how slow the scientific establishment has been to acknowledge their consequence, namely unemployment.

Treatment of the problem in the scientific journals went through two levels of awareness. At first, instances of unemployment among scientists were minimized. They were referred to by anecdotes as isolated events. Some department chairmen explained their graduates' absence from the job market in terms of people taking a year off to travel, as having identity problems with respect to the choice of their careers, and, in the case of women, as having babies. Indeed people were doing all these things, but what prompted them? It is very likely that the increasing tightness of the market led recent grad-

sheds little light on the actual employment situation of Ph.D.s. For example, of eight hundred NASA employees laid off in Cambridge, Mass. earlier this year, 130 including 30 Ph.D.s have not found employment. Since poverty is blamed on the poor themselves and ecology problems on automobile owners and leafburners it is obviously in the American tradition to blame unemployment on the unemployed and not relate it to its true economic and political causes. It is also understandable that the scientific establishment, threatened with reduction in funds and personnel, is worried about the loss of power and prestige and would therefore like to explain such unpleasant facts away, but it is myopic in the long run and irresponsible towards those affected.

It may be argued that the trends were not apparent and the above types of explanations are therefore justified. Let us then see what happened in stage two, i.e., when unemployment became statistically significant and not so easily dismissed. Individualistic answers were by no means abandoned, only carried to a different level. As late as June 1970 Gruner dealt with the unemployment question in a lengthy article in *Physics Today*³. He failed completely to mention any causes for the problem and

recommended that the physicists out of work “adjust” to the situation, much like psychiatrists recommend that their patients adjust rather than encouraging them to change the intolerable conditions that create many psychological problems.

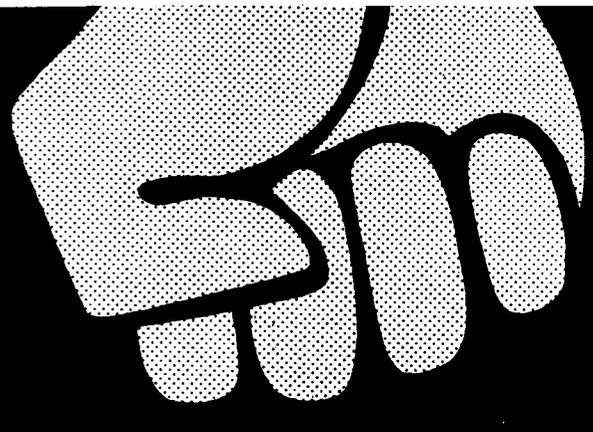
Other explanations say that there has been an unfortunate overselection by individuals of certain fields notably as a result of the Sputnik panic. Now people are seen as having the wrong skills, so next time we’ll do better and the call goes out for better manpower planning. Still the blame is placed with the individual. He picked the wrong job, so he better retrain. He has been pampered by a seller’s market, so he better learn how to market himself more aggressively. If there are no jobs to retrain for, he can take work that requires fewer skills (as *Time*, Oct. 5, 1970, p. 84 well describes.) so go the arguments when in fact scientists and engineers under age fifty were educated at a time when war and armament spending was riding high, when they were automatically channelled into contributing to essentially destructive activities. Now that he is no longer needed by that system and the money not spent on war is not being allocated to other projects or to projects that cannot absorb his skills he is on his own and told to adjust.

This cynical liberal interpretation of the plight of unemployed scientists and engineers denies the scope of the problem. It is much beyond that which selfadaptive forces of the market will solve. To retrain, to acquire new skills in addition to the “overspecialized” ones they already have, to learn how to market themselves will be of help for only a few. And even for those who will be able to adapt individually, there are still the subjective costs of lost income, lost economic security, and lost self-esteem - all having consequences for their lives and the lives of their family.

The only hope for the great majority of unemployed scientists and engineers is not in individual adaptation, but in structural change of the conditions which determine their employment perspectives. The better this fact is understood, the more political will be the way in which scientists and engineers react to the new situation of unemployment. Unfortunately, some of the scientists and engineers whose employment is threatened or who are unemployed are likely to find “hope for change” in resumption of undiminished levels of defense and space spending and in continuing the arms race. They may agree that this alternative is irrational from a political point of view, but it promises at least to take care of their present problems. Those who are unable to conceive of any other option can be expected to put the pressure on. Already there are officials of some unions of war-

dependent workers who have turned into fervent supporters of the war machine. Will there be another faction in the war lobby?: scientists and engineers whose employment opportunities depend on war related industries? As we learn from many historical examples; depressed and economically threatened segments of the middle class show a strong inclination to resort to reactionary and militarist attitudes. These people need an alternate vision. What is being offered them?

One perspective on structural change that we hear much about is *conversion* of defense resources to *useful* civilian production (“useful” meaning more than just shifting from arms race to space race.) Everyone talks about conversion and the “peace dividend” and all the things that can be done (and all the jobs that can be created) once the defense budget is down. Even the Nixon administration pretends that this is exactly what it is going to do. Without speculation about the intentions of the administration, let us consider the prospects for conversion and the structural obstacles which stand in its way.



About 9% of the labor force are today absorbed by the military machine of the Pentagon. Of these, 3.5 million are military personnel, 1.2 million are civilian employees of the military forces and 3 million are war production workers (working in 15,000 to 20,000 prime contractor firms.) One author “would guess that if the DOD simply shut down tomorrow and nothing took its place, unemployment would rise to over 15%, roughly as in 1931.” (R. Heilbroner.) A shutdown of the DOD would be first of all *economically* suicidal. Although neither administration officials nor any other established political forces are favoring anything which comes close to such an “irresponsible” policy, the problem of overall size makes even very moderate steps of *partial* reduction of the defense budget difficult. For even simple linear arithmetic indicates that a 10 percent reduction in military spending leads to an increase in the overall jobless rate of at least 1 percent.

Since the economic system of the United States is unable to reduce the chronic unemployment (that which is *not* caused by cutbacks in defense spending,) since it maintains civilian unemployment somewhere between 5 and 6 percent (according to the highly euphemistic labor statistics) is there any reason to believe that unemployment caused by defense cutbacks will be absorbed easier than plain unemployment? To fail to produce an analytical reason on which to base a positive answer to this question, and *still* expect the militaristic economy to convert simply as a response to popular demand for "conversion" is sheer self-deception. To spout the liberal conversion peace dividend rhetoric without an analytical base is utopian. What *institutions* and what *political forces* do supporters of this rhetoric expect to do the job? To be taken seriously they must carry this burden of proof. An attitude of simplistic confidence is not enough. Those who want to defend the prospect for conversion as being realistic must consider the facts of life in a highly militarized capitalist economy, particularly those that we discuss in the following three points.

I.

As we know, under capitalism, employment of manpower is a byproduct of investment of capital; investment of capital in turn is a consequence of expected profits. No profit expectations mean no investment means no employment. Consequently, non-defense alternatives will be open for employees if and only if profit expectations for civilian investment are provided for defense corporations. In order to make sure that expected profits will be as high and as secure as they are in the highly monopolistic defense business itself, the federal government will have to subsidize profits to the same extent it subsidizes the profits of defense industries today.⁴ Civilian investment of capital and employment of labor will happen only to the extent that government is willing and able to do exactly this.

But the same imperative of rising inflation which forced the lowering of the ceiling in defense spending will also enforce a reduction in the budgets of other government departments. Moreover, the reduced overall funds are essentially channelled through the same monopolistic corporations that used to do the defense-industry-dependent states like California,) farsighted as their management usually is, prepared themselves for the emergency of cutbacks in defense spending. To a large degree they have *already* exhausted the nondefense alternatives to which the physical and intellectual capital⁵ can successfully be applied.

SCIENCE FOR THE PROGRESS

This type of corporate emergency planning, called *diversification* not *conversion* because the corporations do not have a direct intrinsic interest in either war or civilian production but in profitable government contracts has already been going on for some years. At the present time, for example, Boeing is engaged in SST, McDonnell-Douglas in something called "campus design" (??), Lockheed in "educational technology" and "international development" Litton Industries in a project on "regional development," and Philco Ford in "systems analysis of poverty" and the development of a zip-code reader. All of this is under contracts awarded by government agencies other than the DOD (at monopolistic prices.) The almost exclusive allocation of reduced government funds to monopolistic defense corporations results because the government has to take into account that whole regions of the country and many primary and secondary subcontractors are dependent on them. Hence preservation of the big defense corporations and their business has highest priority. The common denominators of the "diversified" projects are (a) they allow for the application of techniques and experiences which are developed in the defense-oriented corporation, and therefore (b) make possible the maintenance of monopolistic structure based on high capital intensity and a high degree of technological sophistication. Together, these prevent competitors from entering this type of "market".

Many economists describe defense contractors, although conventionally considered "private industry", as being simply some kind of subordinate administrative agencies of the government—a unique type of agency insofar as it obtains monopolistic profits at little or no risk, and thereby causes inflation.⁶ Since it is inflation that made necessary the cutback in defense and space spending, there is little reason to expect that a shift to the civilian departments of the same "agencies" will be considerably less inflationary, and therefore allow for higher employment.

The government created this sector of the economy through the defense spending of the post-World War II period (1,100 billion dollars) and has put it into the position of an indispensable pillar of the economy. How can the government now get rid of its obligations? It can't. Therefore, parts of the reduced funds of government will be used for the purpose of averting any serious losses in the profits of this central part of the economy. No attempt at conversion can be undertaken which would threaten the monopolistic structure itself. Consequently, *conversion* happens exactly to the extent that the monopolistic corporations feel *diversification* is *profitable* to them, given the decreased government budgets.

II.

Most urgent *public needs* are those which are most unlikely to be satisfied by monopolies. Among others, these needs are in the areas of urban reconstruction, health, environmental protection, education, housing, and transportation. By their very nature, these collective needs call for their fulfillment by enterprises which have different characteristics than defense enterprises.

(1) *Capital intensity* is low relative to defense-type enterprises; that is, the proportion of salaries and wages in proportion to fixed-capital outlays per year is higher. Or,

(2) *total investment required* and the level of *technological sophistication* of the investment is relatively low; that is, effective barriers against entry of competitors are absent, and there is little prospect for long-term and continuous-investment outlets.

(3) *Effective demand* (as opposed to *need*) is so low that not even competitive firms with their lower profit expectations are attracted, much less monopolized ones. The combination of attributes of "collective-need" industries explain why private industry is simply not motivated to do the job.

The simple, rational conclusion seems to be: let *public* enterprises do the job. But although this suggestion is rational and common sensical, it contradicts the logic of a capitalist system. Government in a capitalist system may *not* engage in economic activities which are not, directly or indirectly, beneficial or at least neutral to private enterprise. What *may* government do, what is it supposed to do? First, *socialize losses*: pay for deficits incurred by Penn Central, Lockheed and many others. Second, *subsidize profits*: put a ceiling on the prices of some very significant cost-items for industry (electric power, transportation, etc.) or put a floor under the prices of over-producing industries (agriculture). That is done by regulatory agencies. Third: *open up new markets* which are too costly or otherwise impossible for private industry to develop on its own. This may happen up to (but no step beyond) the point where industry itself finds it profitable to become active. The most important market provided by government is, of course, the government's own demand for defense items. What government may *not* do, then, is (1) engage in *competition* with private business *directly* (e.g., build publicly financed and publicly owned homes through public enterprises *for the market*) and (2) make competitive bids for the *resources* of private industry (labor or capital) to the effect that prices for these resources, and consequently costs for industry, rise. This *indirect* type of competition (on the markets for resources) is permitted only to the extent needed for the three functions government is *supposed* to fulfill.



This unelaborated analysis is adequate to draw some important conclusions. The nature of collective-needs industries provides inadequate investment incentives. But government is structurally prevented from filling the investment gap, and from thereby creating employment and meeting social needs. Why? Because by doing so, government would violate the basic imperative of noncompetition with private business. A not-for-profit government enterprise would necessarily increase demand for productive resources, thereby causing private industry to release some of its resources, *thereby causing unemployment*. A government enterprise would also supply goods and services (for example rapid-transit systems), thereby cutting the markets of private industry (for example, Detroit), *thereby causing private industry to release workers, thereby causing unemployment*. Therefore regardless of how much unemployment exists and how many collective needs are unmet, direct not-for-profit government employment (outside areas which, like defense, are beneficial to the private sector) creates disproportionately more unemployment in the private sector, and is thus, disruptive for the entire economic system. Defense employment and useful civilian employment, like guns and butter, are structurally asymmetric, and one cannot be substituted for the other, that is, without a basic change of the system.

This contradiction is all the more paradoxical since *government is the only sector of the economy* (except, to a much lesser degree, trade) which was able to *expand* substantially its long term share *in the total number of people employed*. Mining absorbed 2.2% of the total labor force in 1929 and 0.9% in 1963. The figures for construction are 5.0% vs 6.2% for the service industries 14.0% vs 15.1%. But government (all levels) went from 6.9% up to 16.3%. The simple explanation, of course, is war and war production, which seems to be the only sector in which, under capitalist conditions, substantial new employment opportunities can be created in the long run. It is hard to see how conversion will work, unless it is a conversion of the institutional framework itself which is fettered by these paradoxical constraints.

III.

Professional and technical personnel account for the single largest component of all government employees and the long-term growth rate in this occupational category is higher than that of other government employees. In the defense sector, employment of scientists and engineers apparently does not depend as much on the overall *level* of the defense budget, as on its *growth rate*, or more precisely, rate of military innovations. In 1969, 63% of all scientists and engineers employed in the United States were employed either directly or indirectly by the military. This enormous impact of the defense sector on science not only affects employment opportunities, but also the structure of scientific personnel - their specialization, the distribution of scientific growth according to field, institution, and level. To a large extent, science becomes the superstructure of the defense sector which, as we have seen, seems to be the only sector where it is possible to offset the forces of stagnation and depression inherent in a highly monopolized system. Both the economy and scientific progress hinge to a large extent on the level and growth rate of the defense sector.

Scientists and engineers who have lost or will lose their jobs are suffering the consequences of this basic misallocation. Perspectives for the conversion of the labor power and skills of these workers into some kind of civilian use are even bleaker than those for a rational conversion of the defense economy as a whole. For the very technical and scientific substance of their skills is affected by the fact of their being part of the superstructure of the defense economy. "Many military-industry engineers now have a trained incapacity for civilian work," as Melman observes. It is indeed difficult to imagine how a civilian economy could absorb large numbers of engineers whose training prepared them for studying and experimenting with phenomena like extreme temperatures, extreme altitudes, extremely costly materials, extremely high safety margins and other peculiar elements of a technology which is designed for the purpose of extreme destruction.



In principle these scientists and engineers could work as "generalists" by being retrained, and doing useful jobs as, for example, high school teachers in physics. But at what costs? Many of them will be unemployable in anything similar to their previous jobs and professional tasks, and for many of the others the hardships of individual adaptation to a system that remains basically unchange in its mode of operation will destroy their professional and private lives. Those who will be willing and able to apply the principle of scientific rationality to science itself and to the institutional forms science takes on in this society will organize themselves, not in order to demand more defense spending, but to work politically for a society in which production does not structurally depend on destruction, scientific progress is not progress in irrationality, and in which the individual is not held responsible to adapt himself to a system which is basically unresponsive to human needs. B.F. & C.O.

FOOTNOTES

- (1) "Recession in Science: Ex-Advisors Warn of Long-Term Effects," *Science*, May 1, 1970.
- (2) "Employment Status of Recent Recipients of the Doctorate."
- (3) "Why There is a Job Shortage," p. 21-26.
- (4) "Many of the largest defense contractors not only owe their sales volume to the DOD, but a considerable fraction of their capital: as of 1967, defense contractors used 2 billion dollars worth of government owned furniture and office machines, 4.7 billion dollars worth of materials, and over 5 billion dollars worth of plant and equipment, on all of which, of course, they were allowed to make profits just as if they were using their own property." (Heilbroner, NYR, July 23, 1970).
- (5) *Intellectual capital* here is the knowledge and technical experience accumulated in connection with defense contracts for which the government paid. Like all knowledge, it is not used up in the process of production and therefore can be privately exploited by the defense corporations. Hence, accumulated intellectual capital, is just another example of capitalization by "profit subsidizing," which is usual in the defense industry.
- (6) For arguments along these lines, cf. the books by Ginzberg *et al.*, R. Barnett, S. Melman, B. Nossiter and, most interesting and revealing, M. Weidenbaum, *The Modern Public Sector*, 1969

POLITICAL ACTION - SESPAP

UNEMPLOYMENT IN AMERICA

- THE PEOPLE PAY FOR INFLATION

That rampant inflation can be eliminated only by increasing the level of unemployment, with all the trauma so implied, has now become a commonplace, accepted but often not understood. The present accelerated inflation in the USA derives from two sources which appear to reinforce and strengthen one another. The first is a heavy military outlay, necessary to protect American interests against socialist and nationalist liberation movements. Military spending means that the government pays out dollars for goods and services which are not sold in the marketplace but instead are dumped in Vietnam, buried in desert silos or sunk in the ocean. Dollars so spent do not find their equivalent in marketable goods. Thus military spending increases total demand (as measured in available dollars) while failing to increase supply (as measured by the totality of marketed goods and services). The result is that there are more dollars for fewer goods and prices are bid up. In a word, inflation. Any sudden and drastic increase in military expenditure as for example in Vietnam, only exacerbates and accelerates this sort of built-in or structural inflation.¹

Footnote

¹To the degree that deficit defense spending generates increased government income in the form of taxes, the tendency to inflation is reduced. However in a full-employment situation, this is not the case, for any shift from non-defense to defense spending only increases inflationary trends. In a situation where there is not full-employment (eg., the U. S. at the present time) taxes generated by defense expenditures must meet those expenditures to eliminate the tendency to inflation. We take the position here that such conditions have not been met in the U.S.A. in the 1960's (or anywhere ever, for that matter).

If, however, we grant that the "multiplier" effects eliminate the tendency to inflation inherent in deficit spending on goods of destruction, inflationary tendencies still exist if the major defense firms are monopolized or oligopolized (as they are). In this case any increase in military demand causes the military producers to further increase their monopoly prices, and their suppliers (also monopolies for the most part) react by increasing prices to get a share of the new and larger profits so generated. A price-price spiral is thus set in motion resulting in accelerated inflation.

SCIENTISTS AND FOR SOCIAL

FOR THE PEOPLE

Secondly the major industrial sectors of the U.S. economy are dominated by a handful of firms (oligopolies, or what amounts to the same thing, monopolies) who long ago recognized that price competition is of no benefit to them (eg. steel, autos, electrical appliances, etc.). Essentially these firms command almost the entirety of their respective markets, are subject to no competitive pressures and are therefore never compelled to lower their prices. (Establishment economists like Gardiner Means acknowledge this phenomenon and employ euphemisms like 'price administration' or 'imperfect competition' to describe it). So whenever a general level of increased demand affects the prices of goods and services in either non-monopolized or monopolized areas, the monopolies react by increasing their own prices and later do not move them back when demand slackens. Hence the war in Vietnam by increasing total demand has spurred the monopolies to up their prices - what one might consider a price-price spiral. The unions and laborers in general are thus placed in a position of reacting to inescapable price increases. Not only can they do no more than react but, with the exception of a few building-trade unions, their reactions never catch up to the monopoly increases. Any small gains are wiped out by further monopoly price moves. Thus in the period 1963-1970, according to Fortune magazine, price per manufactured item increased twice-as-much as wages per item in percentage of the original 1963 levels. The term 'wage-price' spiral is at the very least misleading and should cause us to question the motives of 'experts' who so faithfully and unrelentingly employ it.

Given that monopoly pricing and a war-economy are the basic causes of the present inflation, the first question to be asked is whether inflation is actually undesirable. Of course from the viewpoint of those living on fixed incomes the elderly and the retired, it is intolerable. (Let us note that if the 'powers that be' were really interested in helping out these people, they could legislate a compulsory cost-of-living escalator for all retirement benefits. Not surprisingly no such legislation is forthcoming). But a high level of inflation is also unacceptable to the powerful men who control corporate America. Inflation means that American goods are priced out of the world market. Inflation means that in terms of real dollars banks now collect less than they originally loaned. Inflation means that other nations are less willing to accept dollars because these dollars are growing less valuable. Their lack of dollars in turn means they cannot buy U.S. exports as before, most of which are produced by the large corporations. To the wealthy in the USA, inflation is unacceptable.

How then does the government - be it Republican or Democrat - go about stemming the inflationary tide? In theory, monopoly pricing practices could be controlled. However, the very executives who preside over the monopolies have easy access to high governmental places. If they are not residing there transiently themselves, their cronies and friends are certain to be found there. (Eg. Who heads the President's Productivity Commission which makes determinations about questions of inflation and price and wage controls? Who else but James M. Roche, Chairman of GM. Who is chief of the Justice Department which oversees the monopolies? A former Wall Street lawyer of course.) Realistically monopoly prices will not be regulated effectively, given the structure of power which ultimately is based on wealth.

Another strategy is to decrease the war expenditures in Vietnam and elsewhere in a drastic way. However such action demands total and immediate withdrawal of American troops from Vietnam with the accompanying admission that the U.S. has suffered defeat at the hands of a popular war of liberation. In the minds of architects of foreign policy like Dean Rusk or Henry Kissinger, such an admission would topple all the dominoes in the American sphere of influence. Already the cry in Latin America is; "We are all Vietnamese. We can toss the Yankees out." Clearly a precipitous withdrawal from Vietnam is unacceptable to those with far-flung international investments.

The only way to end inflation, then, is to decrease the level of total demand by causing more unemployment. With fewer dollars on the market (since fewer people are drawing wages), prices in the non-monopoly sectors will be bid down. This means that the monopolies pay less for the goods which they purchase from the competitive sector. And with so much extra manpower available, the corporations in all sectors can bid down the wages of labor. When the cost of labor and goods is thus decreased, the monopolies can maintain or increase their profits without further raising their prices and so they can protect their international competitive position. In this way unemployment and the resultant labor surplus benefit the large monopolistic corporations - at the expense of the people.

How is this unemployment to be effected? One way is by tightening credit thus decreasing total investment and consequently the number of jobs available. Of course such policy does not affect most large corporations since they are not dependent on borrowing for their investments but instead have substantial capital resources. And even when these resources are not sufficient, the large corporations are given preference by the banks. (A dramatic example of this was the massive credit extended to the Chrysler Corporation which developed a cash shortage when the Penn Central collapsed and panicked investors rushed to sell their Chrysler stock.) Moreover the tight credit policy pursued for some time by the Federal Reserve aggravates already high unemployment levels in many segments of the populace. For example unemployment among young blacks just out of high school has approached the 40% level. As Clyde Farnsworth reported in the NYT (Nov. 18, 1969) from a meeting of international bankers in Switzerland:

The most effective way to eliminate the payments deficit (a necessary concomitant of war-caused inflation) is by prescribing a recession, but the Americans argue that the first to be laid off, according to traditional employment patterns, would be unskilled black workers. This, they say, would provoke an intolerable aggravation of racial disquiet... The argument is not a new one, but it is unusual for it to be raised in international monetary discussions.

In sum monetary strictures by themselves do not seem to be sufficient to brake the inflation, and the unemployment patterns which they generate are increasing social tensions which now threaten to tear the society apart. For both these reasons (although undoubtedly primarily for the first since riots and militants can be suppressed) the government must decrease employment by directly cutting its own expenditures. Of course the first costs to be trimmed are the negligibly small social welfare programs (eg. the veto of the education appropriations, the veto of the hospital appropriations, etc.). However, these miserly sums are not enough to produce the desired anti-inflationary effects. And so albeit reluctantly Nixon has been forced to turn to the aerospace and military industries. (Note that this has been a last resort and there is no reason to believe any President would behave in a drastically different fashion. As we have shown above the system applies constraints to other courses of action).

The only spigot of the economy which produces substantial flow and which the government is allowed to turn on and off at will is the defense industry since all the rest has been left to the wisdom of private enterprise. By cutting back on domestic defense research and development and the space program, the government can effect the mass layoffs necessary to eliminate a large chunk of demand. (Meanwhile Vietnam defense expenditures are maintained at the necessary level to protect American interests in Southeast Asia and the world.) Thus, in the past year cutbacks by the Department of Defense have resulted in the loss of 900,000 jobs; and 750,000 more are expected in the coming year (*Business Week*: Sept. 5, 1970). As the Pentagon Comptroller, Robert Moot, reluctantly admitted: "I would hesitate to say that all the people leaving the Defense Department have gone on unemployment rolls. But there is a reasonable assumption that there is a direct correlation between the two." (*Business Week*: Sept. 12, 1970). The Defense establishment is the means by which the American economy is regulated; with the resources it commands booms and recessions are created or regulated. When the international interests of the large corporations "prescribe" a recession, working people everywhere suffer. Of course blacks and poor whites feel the sting of unemployment first and most sharply. But when it is necessary, engineers and scientists are also promptly consigned to the unemployment heap and their crumbs of professional privilege mean nothing.

NEWS REEL	FILMS	Local 1199
		Off The Pig
		Abortion
		R O T C
		Vietnam, Land Of Fire
		May Day
		People's Park
		Columbia
		Paris In May
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The above should make it clear that the layoffs in the aerospace and defense industries are not a prelude to conversion of resources and manpower for peaceful and socially necessary purposes. Even *Business Week*, a leading business magazine, acknowledged this fact in a recent article entitled "The Peace Bonanza That Went Bust" (Sept. 5, 1970). *Conversion is impossible because conversion means employment which aggravates the inflation problem.* The pattern of the past is clear. The only time the system gets close to full employment is when heavy defense expenditures are needed for the protection of American interests abroad or, even more often, when the defense industry can frighten the public into useless expenditures on "super-weapons" which generate super-profits (eg. the ABM). Socially useful expenditure is left to the realm of rhetoric. The monopolies are the principle beneficiaries of all these defense expenditures, for it is their foreign interests which are protected and their sub-divisions which get some of the juiciest defense contracts (eg. GE, GM, etc.). So the full-employment policies like those of the Kennedy administration redound to big business and not the people. And when inflation generated by such policies begins to threaten the world position of the U. S. corporations, it is the people who suffer the terrible burden of unemployment.

So much for the past and present. Does the future look better? *If* the substantial unemployment eventually slows inflation down somewhat and *if* therefore a portion of the unemployed can be allowed to return to work, what are the chances of using this manpower in a socially rational way? Let us examine the means routinely recommended for getting people back to work in non-defense industries. The accepted Keynesian way of doing this is through tax reductions (used by Kennedy in the early 1960's). Such tax reductions give people more to spend and this eventually creates more jobs. But note well that such reductions mean more spending in the private sector. There is no reason to believe that under our "free-enterprise" system this spending will be done in a socially beneficial way. Rather, money will flow into areas where profits are highest, and profits nowhere necessarily coincide with socially desirable expenditure. As John Maynard Keynes himself admitted:

The world is *not* so governed from above that private and social interest coincide. It is *not* a correct deduction from the Principles of Economics that enlightened self-interest always operates in the public interest. (*Essays in Persuasion*)

In short a society motivated by private gain will only *accidentally* act in a way that is to the general benefit of all its members. So it is with any realistic estimates of future non-defense expenditures. The administration, anticipating the future, is already concocting models that estimate how such expenditures will be divided up. *Business Week*, reporting on these projections, states that the following sectors of the economy will make gains: hotels, amusements, apparel, construction, service industry machines, beverages, automobiles, household appliances. (Sept. 5, 1970) In other words more of the same and presumably with the same "equality" of distribution. Not mentioned in the projections are education, medicine, parks, city planning, public transportation, pollution control, better communications, recreation, the arts, etc.

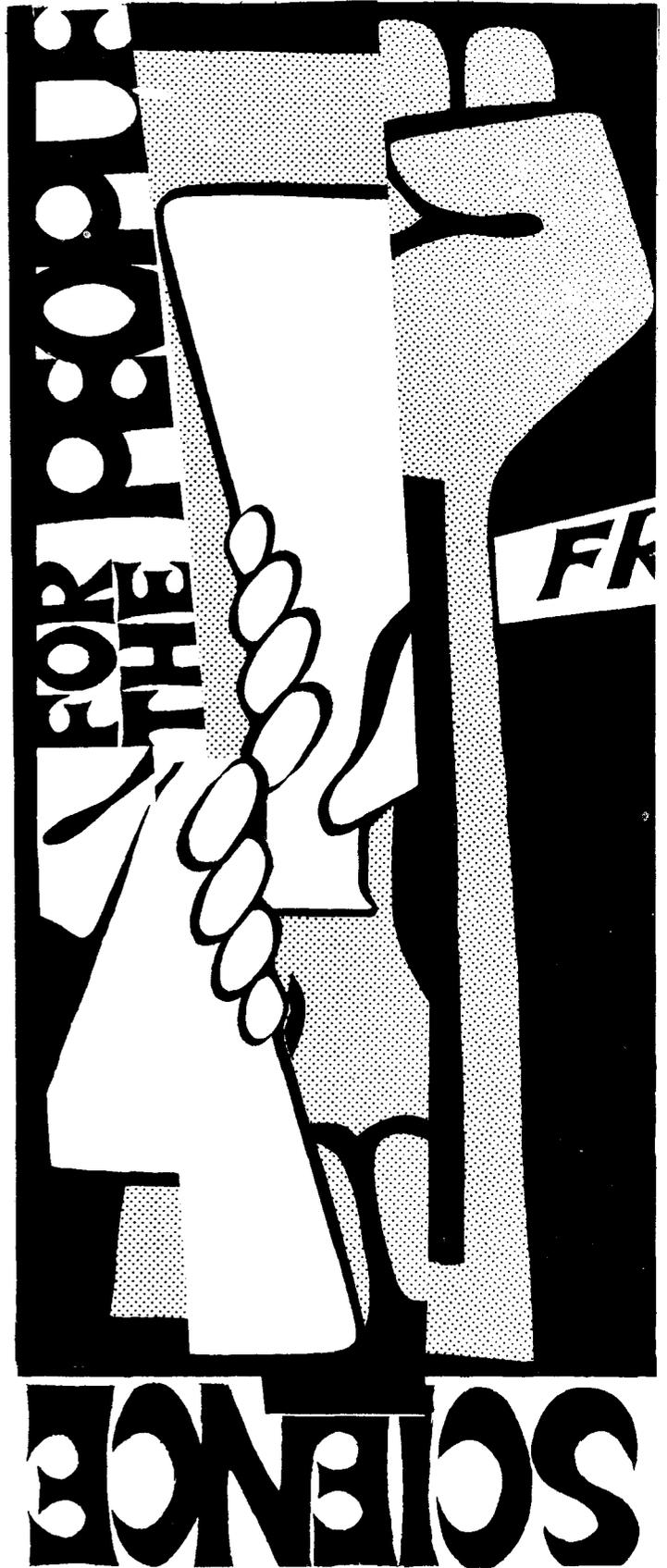
So necessary social expenditures are not likely to be made by the private sector because they are not inherently the most profitable (especially in the short-run) given the existing stock of plant and equipment. The other alternative, government-owned industry, represents an intolerable encroachment on the universally acknowledged terrain of "free-enterprise." (For example, GM and Ford cannot accept a rapid, efficient safe network of public transport because it would render unprofitable an enormous portion of the productive apparatus they own. Moreover, in the long run producing a few railroad cars is not nearly as profitable as foisting off thousands of automobiles on the public.) In addition, since the example of an adequately founded and efficiently run state-owned enterprise represents by its very existence a threat to the corporate elite, it must be resisted by any means necessary. (For example, TVA and its success are a constant thorn in the side of the utilities.) In sum there are no realistic prospects of substantial and meaningful conversion of resources in a sensible way.



At the same time there are powerful obstacles to any real shift away from continued expenditure on the defense industries. First and most important, there is the necessity of protecting American investment and markets throughout the world. But there are also other reasons. The U. S. Arms Control and Disarmament Agency conducted a study on new expenditure patterns and concluded that there was little problem in utilizing the talents of most workers, including scientists and engineers, presently employed by the aerospace industry for peaceful purposes. However, such is not the case for defense-oriented corporations. As *Business Week* sums up the findings of the study in this regard: "Some major defense companies will have serious problems shifting to civilian markets. Two major problems appear to be a lack of management motivation (they prefer the lower risks of military production) and a lack of capability. The major defense concerns often have low capitalization, little marketing capacity, and limited experience in producing high-volume output at low unit cost." (Sept. 5, 1970)

The lessons for those in the scientific and technical community are clear. It is not they who are incapable of functioning in a socially useful and productive way but our economic system which is unable to so employ them. The system may accord scientists and technicians the status of "professionals", but when the chips are down, it treats them like any other group of workers. The need for solidarity with other workers to eliminate a system of this sort is imperative. The economic system under which we live at present is designed for short-term profit and nothing else. It serves to increase the wealth and power of a few at the expense of the American people and of people throughout the world. For this reason the right of private investment of social wealth for the sake of profit must be abolished. Only a system which places the prerogative of investment in the hands of the people and their democratically chosen representatives is compatible with a humane use of resources and with a decent and secure life for people everywhere. Democratic socialism has become a necessity.

J. W.



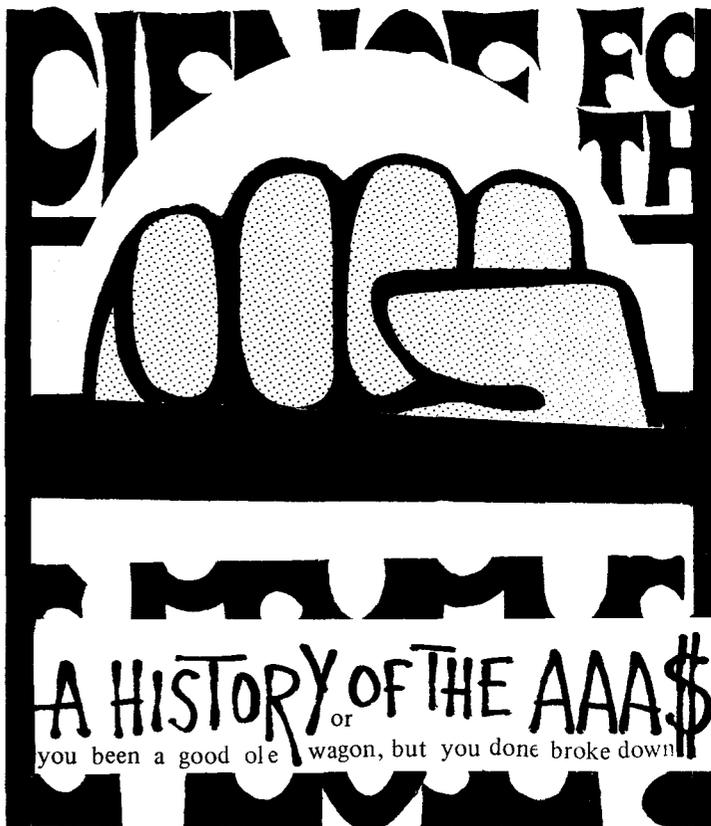
■ Philadelphia was the site, in September 1848, of the first meeting of the American Association for the Promotion of Science - or so it was called in the notice appearing in the *American Journal of Science*. The organization, an outgrowth of the more limited Association of American Geologists and Naturalists, was intended by its founders to be a broad, national society of scientists which would encompass all fields of scientific endeavor. For at that time the scientific community was highly fragmented and dispersed, consisting of a few small elite societies on the one hand, and many independent researchers on the other. Moreover, the great interest in Geology during the first half of the 19th century, as indicated by the many state geological expeditions and studies then being conducted, resulted in an awareness of the advantage to be gained by bringing together experts in geology, chemistry, paleontology, physics, biology, and the like. Thus the interdisciplinary character of geological questions served as one stimulus for such an organization.

But of considerably more importance to scientists at that time was the need they felt to establish the social legitimacy of science, to win public recognition and support for their work (see opening quotation.) The day of the gentleman science to prosper it became paramount that its practitioners establish themselves on a firm professional level. That task required the formation of an organization of national scope, one which could speak not only in the name of science, but also on behalf of science. Thus the objects of the new Association as formulated in 1848 were:

... to promote intercourse between those who are cultivating science in different parts of the United States; to give a stronger and more general impulse, and a more systematic direction to scientific research in our country, and to procure for the labours of scientific men, increased facilities and a wider usefulness.

Except when interrupted by cholera or war, the Association met annually in different cities throughout the United States, predominantly in the East. The gatherings were held during the summer, when travel required the least hardship and when many outings and recreational activities could add to the pleasure and attraction of the meeting. After all, the membership of the AAAS was small enough (originally 460, climbing to 2000 by 1900) so that the meeting could be quite enjoyable.

Herman Fairchild, writing in *Science* in 1924, observed that during the AAAS's first half century, "the function of the Association as watchman and spokesman for American science was properly exercised, and the young society assumed its authority as representing organized science..." Its concerns were also directed inwardly, toward establishing standards of research and conduct. For example, Joseph Henry, the famous American physicist, was appointed in 1851 as a special committee of one (!) on "scientific ethics."



A HISTORY OF THE AAAS
or
you been a good ole wagon, but you done broke down

But the Association was not without difficult problems. Scientific specialization, which began to develop in the latter part of the 19th century, resulted in the formation of increasing numbers of small technical societies, independent of the AAAS. These threatened to undermine the dominant position and hence the very existence of the Association. In response to these developments, the AAAS invited these societies to participate in its annual meetings, whose date was changed to December for the convenience of these newly affiliated societies. In addition, the affiliates were given representation in the AAAS Council (the policy making body of the AAAS.) As specialization has continued to become more specialized, these technical societies have continued to proliferate, until at present the number of AAAS affiliates is close to 295, their representatives comprising 80% of the approximately 560 council members.

With the successful assimilation of the technical societies, begun at the turn of the century, the AAAS established itself as the uncontested spokesman for the American scientific community. In this capacity, it has expended much energy in creating and cultivating a favorable public image for science. It has struggled hard to attract increasing numbers of young people into research and to develop better educational programs for students. It has unceasingly proclaimed the great value of scientific research to society and stressed the necessity of long term financial support for continued technical advance. In short it has been, with unflinching zeal, the great champion of American science!

SCIENCE FOR THE PEOPLE

These activities are the trademarks not of a scientific organization, but of a political self-interest organization for science. The Association's purpose has been to attain for the scientific community a maximum of growth and institutional stability. Its fervor in this regard has led (in 1957) to its taking the indiscriminate position, for example, of favoring any "revisions of Federal and state income tax laws as will provide greater incentives to contribute to education and science" (e.g. higher taxes,) and to its opposition (in 1965) to the Viet-Nam war on the basis that "science cannot fully flourish, and may be badly damaged, in a society which gives an increasing share of its resources to military purposes." The resolutions of the AAAS Council are political positions taken by its members on the basis of the limited consideration of what will do most for science.

This quality of the Association's policy statements has led to some rather remarkable transformations in policy over the years. In 1934 the Council, reacting to events in Western Europe, voted a resolution which reads, in part:

The American Association for the Advancement of Science feels grave concern over persistent and threatening inroads upon intellectual freedom which have been made in recent times in many parts of the world.

Our liberties have been won through ages of struggle and enormous cost. If these are lost or seriously impaired there can be no hope of continued progress in science, or justice in government, of international or domestic peace or even of lasting material well-being.

We regard the suppression of independent thought and of its free expression as a major crime against civilization itself. Yet oppression of this sort has been inflicted upon investigators, scholars, teachers and professional men in many ways, whether by government action, administrative coercion, or extra-legal violence. We feel it our duty to denounce all such actions as intolerable forms of tyranny ...

However, twenty years later, when the Federal government had become the patron of science, it was not to the Association's advantage to be so critical. In 1954, during the McCarthy era, the Council went on record as endorsing and recommending to all funding agencies the adoption of the National Science Foundation policy, according to which the NSF

... will not knowingly make or continue a grant to a person who is an avowed Communist or who has been established through judicial proceedings as being a Communist ... Except in cases of persons thus excluded, appraisals as to the worthiness of applicants ... are made ... exclusively upon positive criteria of experience, scientific competence, and integrity of the applicant.

Apparently the intolerable had become more than tolerable. Thus the AAAS has stooped to the lowest levels of political opportunism.

Of course, there is nothing new in the scientists' use of most any expedient for obtaining research funds, and therefore it is not surprising that the AAAS has bent over backwards to maintain congenial ties with the federal government. Surprise comes in comparing such unprincipled behavior to the high-flown declarations of the Association. In 1952, for example, the AAAS drew up a new set of purposes - the ones which appear in every issue of *Science* magazine. The new objects of the Association are:

to further the work of scientists, to facilitate cooperation among them, to improve the effectiveness of science in the promotion of human welfare, and to increase public understanding and appreciation of the importance and promise of the methods of science in human progress.

In addition to its traditional commitment to the promotion of science, the AAAS now appears to show great concern also for human welfare and human progress.

SCIENCE FOR THE PEOPLE



The change in the objects of the AAA\$ reflected changes which had taken place during the century of the Association's existence. Scientists by 1952 had won public recognition and support, largely due to their contributions to industry, government and war. As a result, many scientists occupied high ranking positions and enjoyed considerable prestige and respect. The National Science Foundation was soon to cater directly to scientists' research needs. However, the development of the atomic bomb had introduced an element of doubt about the blessing of scientific advance, and adverse reaction was developing to the unchecked growth of technology. It was to counter these currents and project the name of science that the AAA\$ formulated new objectives. New times required new tactics, and the Association was prepared to enter the arena of social action. How successful has it been?



The record stands for itself. In 1955 an Interim Committee on the Social Aspects of Science was formed. In 1956 it gave its report, which stated in part, that "in marked contrast to other associations, scientific societies seldom consider the social and economic positions of their group." The committee stressed "the pressing need that scientists concern themselves with social action," and concluded that, "in this situation the AAA\$ carries special responsibility." Action. The committee was converted from an interim committee to an ad hoc one. In 1957 it reported again. In 1958 it was dissolved in favor of two new committees: Committee on Science in the Promotion of Human Welfare (CSPHW), and the Committee on Public Understanding of Science (CPUS). The first of these, CSPHW, issued its first report in 1960, stressing again the urgency expressed in the 1956 report. Five years later in 1965 it issued its second report - "The Integrity of Science" on the erosion of scientific objectivity. In 1966 the CSPHW reported to Council. In 1967 the council accepted another report. In 1968 the CSPHW reported again, and in 1969 it presented another report. Action. The second Committee, CPUS, lay dormant until 1962 when it announced a planned series of educational TV programs which were shown in 1963. In 1965 CPUS reported to Council that it had been "relatively inactive" the past year. In 1966 the Council heard its report. CPUS reported again in 1967, and again in 1968. In 1969, there was no report at all. Action.

The 1969 council report of the CSPHW, given at last year's Boston meeting, is illustrative of the Committee's work. The report deals mainly with the two questions of non-classified Department of War supported research (on which it held a symposium) and reductions in federal support of scientific research. Both of these topics are surely of major importance to scientific researchers. But their relevance to the crucial questions concerning the threat posed to mankind by the misuse of science and technology is rivaled only by the relevance of Richard Nixon's preoccupation with smut to the acute economic problems of American Capitalism. In fairness, it must be mentioned that the CSPHW report also proposed the setting up of five more new committees.

Further evidence of the effort being devoted to social action is furnished by the annual financial statement of the AAA\$. In 1970, of a total expenditure of 5 million dollars, 15 thousand (0.03%) is reported for Public Understanding of Science and none (0.00%) is reported for Promotion of Human Welfare (or anything resembling that.) It should be kept in mind, too, that over the past decade, the membership has doubled, and the budget has increased by a factor of 5. Thus there have been ample resources available for these projects.

During the same ten years, the cost of the annual meeting increased by an order of magnitude. While the AAA\$ advertises "a desire to grapple with the great questions of our time," what happens at the meeting is more like one of those phony wrestling matches on television. Scientists emphasize the need for more science and technology to solve the social problems created by the misuse of existing technology. They discuss how society must adjust to technological advance, without considering how and in what direction that advance takes place. They proclaim the neutrality of science at the very time it is being funded and used by the military to attain political ends. Yet who is in the ring to wrestle these men of great understanding? No one! The image which comes through that smoke-filled auditorium is one of a concerned scientist, working hard to solve the problems of his times.

The record thus shows the failure of the AAA\$ to develop any substantial program of social action. Rather, its energy has been consumed in enlarging the Association, in attempting to stimulate the growth of science, and in creating an image of social concern favorable to the public. Thus its self-serving pronouncements must be carefully weighed against its long history of promotional activity. In 1969 for example, the AAA\$ Board of Directors (the administrative body) announced bold "new" plans for the next decade. These included an expansion of the Association's membership and "a major increase in the scale and effectiveness of its work on the chief contemporary problems concerning the mutual relations of science, technology, and social change, including the uses of science and technology in the promotion of human welfare." There seems to be no end to empty rhetoric.

It is important to realize at this point that the failure of the AAA\$ to develop any meaningful program of social action lies in the direct conflict of such an undertaking with the basic interests and purposes of the Association, as presently constituted. The leadership of the 120,000 member organization, the Council and Board of Directors, consists of scientists whose important positions in industry, the university and government bind them to the dominant institutions in our society. They are the scientific elite - the consultants, the administrators, and the research directors. Their prestige and financial security depends upon the maintenance of present institutional forms. Moreover, the ability of the AAA\$ to obtain recognition and support for research depends on the usefulness of science in rationalizing and strengthening the government and corporate enterprise. Thus, in every respect, from the composition of its leadership to the attainment of its promotional objectives, the AAA\$ maintains a tremendous vested interest in the status quo.

But the essence of meaningful social action is the alteration of that status quo. For only by fundamental change in the social and economic structure of society can the misuse of science and technology be prevented. So long as control over technology rests in the hands of corporate enterprise, and a government which functions on its behalf, scientific





advance will be used to further corporate interests at the expense of the people. The technology of death, destruction, despoilation, waste, and mass manipulation will continue, for these are the devices by which the domination of the oppressive social institutions of society are maintained. Such institutions must be replaced by democratic ones in which science is applied to meeting the collective needs of the people, instead of being used for their subjugation. However, the material and political ties of the AAAS leadership to the established social order and economic order insures that meaningful social action would undermine the Association's stance. Under these circumstances, it is extremely unlikely that significant action can be forthcoming.

In 1848 the AAAS was formed to respond to definite needs felt by the scientific community. In 1970, however, the AAAS is incapable of responding to the new needs of scientists living in a very different society. The Association's Board of Directors is chosen by the Council, which, in turn, represents the affiliated societies. Thus the leadership does not represent the working scientist, and in fact has self-interests, as described, which are very different from those of the scientific community at large. Thus the AAAS does not address the important questions of job security or retraining for technically obsolete scientific workers. It can do nothing to alleviate the growing malaise of many scientists over the inevitable misuse of their work. At a time when technical personnel are in tremendous surplus, the AAAS continues to encourage more people into science. Moreover, the activities of the Association are altogether irrelevant to the special problems of young scientists: overspecialized education, their subordination to research directors, the rat race of publish or perish, stultifying teaching experiences, and political impotence in the scientific hierarchy.

Thus, in addition to its failure to serve any valuable function to society, the AAAS also fails to be of any significant value to its own constituency, the scientific community. Nor can it be looked to as the source of progressive programs for social action - adopting the expedients of the present is hardly the way to a brighter future. The social action of scientists must be aimed rather at resisting the authoritarian, technocratic, elitist, and manipulative designs of the ruling classes in this country. It must be aimed at the demystification of science and scientific expertise and at providing an understanding of the social liabilities of a technology under domination of anti-social forces. It must be aimed at forging new instruments for the collective control of technology. It must be aimed at creating new forms of social organizations within which people can determine and respond to their common social needs. It must be aimed at forming the alliances which will transform a fragmented, competitive, stratified, undemocratic order into a cooperative, egalitarian society. It must be aimed at creating a social and economic system which will set free the productive and creative capacities of all men and women, so they may join together to build a new world.

SCIENCE FOR THE PEOPLE!

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from pollution creates conflicting interests

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intellectual challenge of the first magnitude
to be extracted from them, we expect to record
the origin and evolution of the moon, which
will provide important information about the early history of
the solar system.

Harvard Genetics Research Quits Science For Politics

• AMA ABORTION STAND: The American Medical Association (AMA) has voted for the first time in its 123-year history to consider abortion a "medical procedure" and to allow doctors to perform abortions for so-called "other than performance" reasons as well as for performance.

Women in Science

"We're appointing you chair of the department—even though you're a woman." Try that out substituting a woman the name of a minority group and see how it sounds.

South Africa

Booming Nation's Research and Industry

Benefit from Close Ties with the United States

Example, of grievous hurt to many whites in this sports-loving country, Britain—South Africa's leading trading partner—recently invoked opposition to apartheid as grounds for refusing to receive a South African cricket tour.

PROFITABLE
READING...

Effect of B-52 Bombing

Although it has not attracted the concern of American scientists, the damage caused by raids with B-52 bombers is of considerable ecological significance. The 500- and 750-pound bombs dropped by these aircraft leave craters as much as 30 feet deep and 45 feet across. Most of these are filled with water even late in the dry season. The army does not disclose the total number of bombs dropped, and the total area affected is calculated accordingly.

WE OFFER THE MOON AS
NEVER BEFORE POSSIBLE

Following facts. A B-52 is 108 500-pound bombs, 30 tons of explosives. Normally, "mission" consists of 3 to 12 aircraft. In 1967, 982 missions were flown over the Republic of Vietnam. In 1968, 3022 missions were flown (Table 3). If one assumes an average of eight planes per mission, then one can estimate that about 848,000 craters were formed in 1967 and 2,600,000 craters in 1968. As one Vietnamese put it, we are making the country look like the surface of the moon (Fig. 6). Unless heavy earth-

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ance of unlimited growth
urvival on a finite planet.

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Funding Remains Tight
Nixon Budget: Science

Population Control, Sterilization, and Ignorance
Will the World Come to a Horrible End?

Doomsday predictions have been popular since
sources of doom are changing. Famine
been the old-time favorites
to live with the impact

WHY DO ANYTHING?

How Should We Treat Environment?

University organization presently permits only

piecemeal Hazards to Health and Welfare. Environmental problem
from Technological Success facturing plants also eats away at the skin of workers'
The technology that has provided hands and sensitizes their lungs, producing an allergic
with the good life spews on with hayfever- or asthma-like symptoms.
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Cult of Growth

Detergents: Side Effects of the Washday Miracles
The technology that has provided hands and sensitizes their lungs, producing an allergic reaction with hayfever- or asthma-like symptoms.

POLLUTION
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THE
LUNAR ROCKS
are not a recent
of the industrial revolution. In
arly 1800's, water was still ob-
from individual wells or springs;
borne diseases were scattered
relatively rare. With the advent
of pumps adequate to supply whole
cities from ce, disastrous
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It's a
question
of integrity

DDT Residues in Marine Phytoplankton:
Increase from 1955 to 1969

Abstract. Phytoplankton samples collected in
1955 to 1969 contained compounds identified
P,p'-DDE. Total concentrations of these compou-
times greater in the later samples. Lower
were associated with higher densi-



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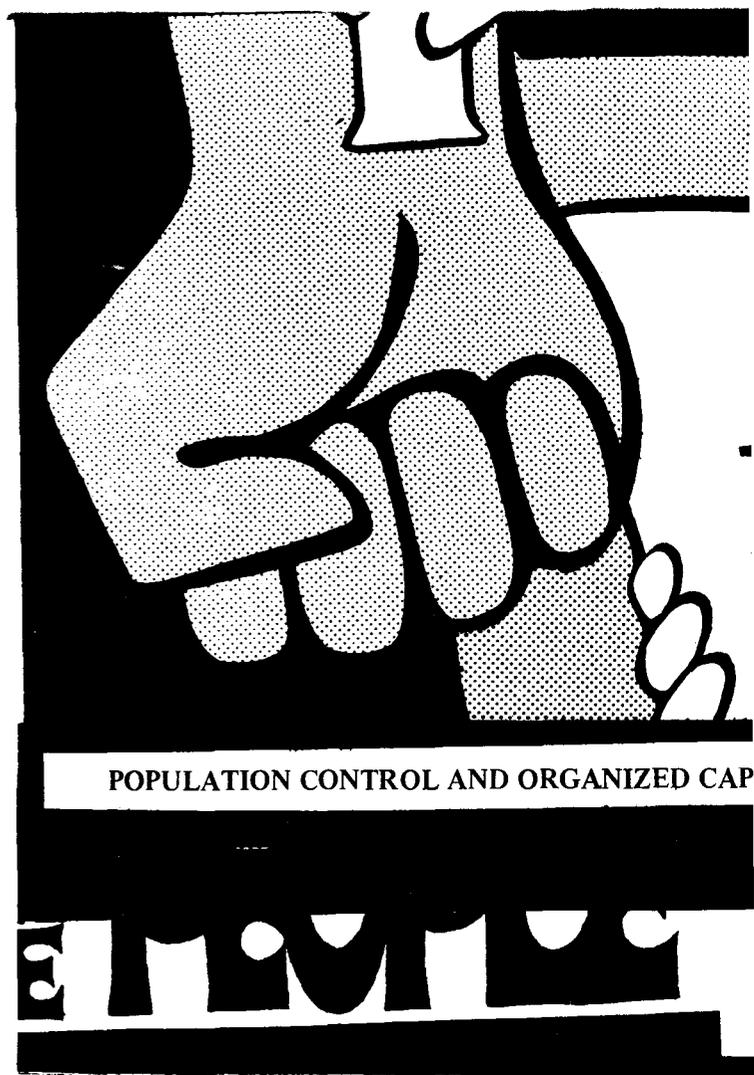
Budget Bureau: Do Advisory Panels
Have an Industry Bias?

Lateral Hypothalamic Control of Killing:
Evidence for a Cholinergic Mechanism
Abstract. In rats that would not ordinarily kill mice, lateral hypothalamic injec-
tion of crystalline carbachol, a cholinomimetic, elicited killing. Norepinephrine,
serotonin, and sodium salts were ineffective at the same site. Carba-
chol was ineffective when injected into the medial, dorsal, or ventral hypothalamus.
As additional evidence for a cholinergic mechanism, methyl atropine blocked it. The results indicate
that the lateral hypothalamus contains a cholinergic component that can be used as a means
of suppressing killing.

The following is a commentary on a feature appearing in the magazine Science and dealing with the population policy of Japan.¹ Since World War II Japan has made extensive use of abortions which have been promoted and encouraged by the national Eugenic Protection Law passed in 1948. In this way Japan has curbed its population more dramatically than any other industrial nation. However in the summer of 1969, Prime Minister Eisaku Sato announced to a meeting of Japanese newspaper editors that the government would reverse its policy and henceforth strive to increase the rate of population growth. In the words of the Science article: "Sato's statement was no irrational, off-the-cuff remark by an uninformed politician. It was based on some cautiously worded recommendations made by the Problems Inquiry Council, a cabinet-level group which includes some of Japan's leading demographers."

The crucial importance of a substantial level of unemployment to the advanced "free-enterprise" states is perhaps nowhere better illustrated than in the Science article by Philip Boffey: "Japan: A Crowded Nation Wants to Boost its Birthrate."² The apparent contradiction of the new Japanese policy finds its explanation in the conflict between the economic interests of a small, powerful class and the well-being of the Japanese people, a conflict which liberals euphemistically subsume under the heading of priorities. Not surprisingly, then, our liberal Science writer states the problem this way: "At the bottom the disagreement is one of priorities. Those who regard economic expansion as the greatest good want bodies to man the assembly lines. Those who are worried about overcrowding are willing to sacrifice some economic growth in return for more living space."

Japan today is already one of the most overcrowded nations on the earth. Made up of four small islands with a total land mass of 141 thousand square miles, only 1/6 of which is arable, Japan in the 1960's was the fifth most densely populated country in the world. Even more strikingly, the overpopulation is demonstrated by the ugly realities of daily life. For example, author Boffey, although valiantly refraining from judgements of "value", concedes that "the congestion seems unbelievable to many Westerners" and that he personally is "appalled at the overcrowding." He goes on to quote one of Japan's leading public health authorities who says: "In terms of space, Japan already has too many people. If you live in Tokyo all you can find is a place to eat and a place to earn money. There is no green, no trees. I don't feel that people are living a vary human life." However all this is not enough for Boffey who, perhaps in an attempt to be impartial, suggests the Japanese have grown accustomed to overcrowded conditions and may even enjoy them. Basically the logic here is that the Japanese will not miss what they have never known. (By so refraining from

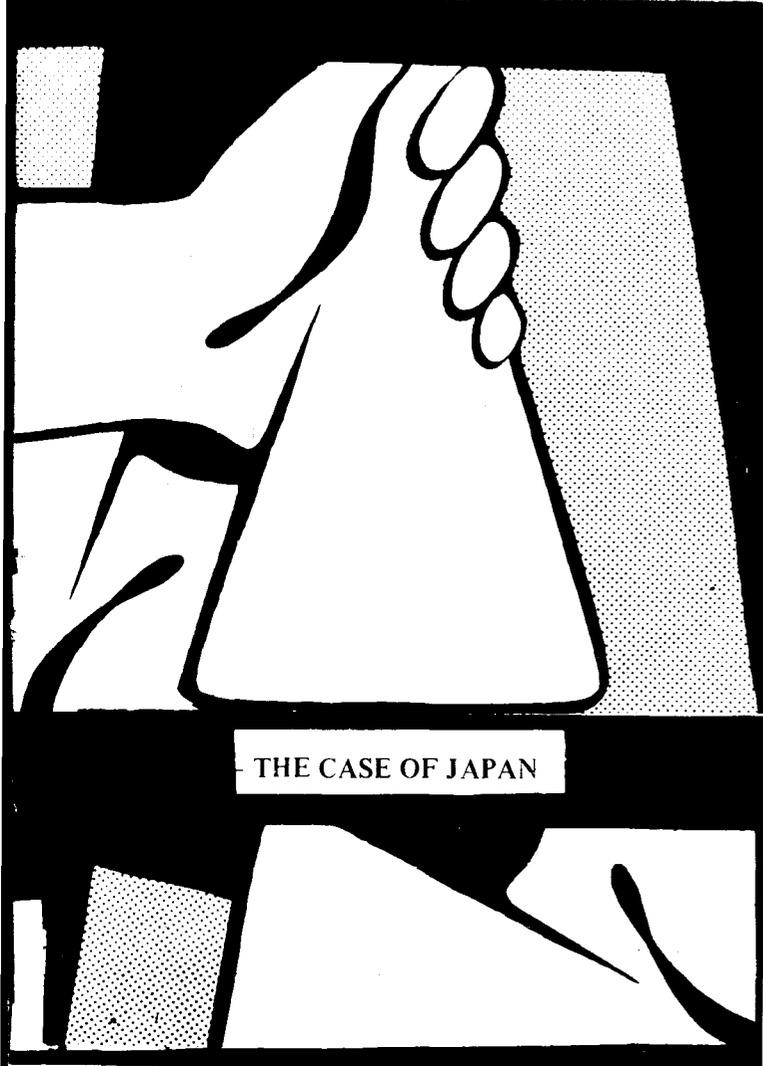


POPULATION CONTROL AND ORGANIZED CAP

value judgements, one can similarly conclude that the malnourished should not be fed or the enslaved freed or the diseased cured, because they are accustomed to their present state.) Concluding in this hollow vein the author even ventures that: "Perhaps future generations will enjoy living shoulder to shoulder." And this in all seriousness!

To understand the new Japanese policy, it is necessary to grasp the pivotal role of labor in Japan's postwar economic "miracle". A precise and prophetic statement of that role is the following, written in 1965:

One of the most important reasons for the rapid growth of Japanese industries during the last decade has been the transference of a large underemployed labor group from relatively unproductive tasks on farms to more productive occupations in industry. Furthermore the existence of underemployed labor in agriculture made it possible for the growing large-scale industries to recruit labor without raising wages. Now that the transition has been made, Japan may have a manpower shortage in the near future due to the decline in the birth rate and to the changes in the age composition of the population.



THE CASE OF JAPAN

Eventually agriculture will be unable to furnish surplus workers for industry as it previously has done... If the supply of surplus workers diminishes, rapid industrial growth may be accompanied by high wages and the gap may be reduced between the growth in productivity and the rise in wages.³

That gap has now been closed and wages are threatening to cut into profits. The problem has not escaped the anxious attention of Japan's corporate elite. In the monthly reports of the Bank of Japan⁴ and in various Establishment periodicals, statements of concern like the following now appear routinely.

I may point out that there exists in all advanced countries a cycle of wage rise and price rise caused by labor shortage... Japanese managements have a serious anxiety as to how long the wage rise of over 10% can be absorbed in the years ahead... Japan is facing one of the most difficult problems in the period ahead, i.e., how can we manage to maintain international competitive power burdened as we are with an exceptionally steep wage rise.⁵

Now that the supply of labor is more limited than it was when the agricultural sector provided a youthful inexpensive surplus, demand is outrunning supply and wages are on the rise.⁶ This development is potentially disastrous for Japan's further expansion in the world market. Confronted with the choice between cutting into corporate profits and thus losing some ground on export trade versus increasing the labor force to lower costs, the Japanese government has opted for the latter. And in doing so, it obviously serves the interests of the industrialists rather than the people.

In fact an argument can easily be made that the Japanese government originally curbed population growth only because "a sizable portion of the nation's capital resources would have been used to support new additions to the population and would not have been available for economic recovery and industrial investment." In this way what appears at first as an about-face emerges as a very consistent policy: When population growth absorbs national income and threatens investment and industrial expansion, the birth rate is to be decreased, and when population decline increases the cost of labor, cuts into profits and prevents industrial expansion, the birth rate is to be increased. In neither case is government's highest priority the welfare of the people. Profits and expansion are of primary importance and are so considered in determining national policy.

However, it is not only the inhumanity of the Japanese policy at which criticism is to be directed; it is the tone of the entire Science article which under the guise of objectivity glosses over the underlying meaning of this policy and frequently ends in the type of absurdity which lauds "shoulder-to-shoulder" living conditions. This sort of "objectivity" is well-known and accepted unquestioningly among liberal American intellectuals. In fact a good example appears in Boffey's article in the person of an "expert in this country" who is dutifully trotted out to justify a policy of population increase. According to "expert" Ansley Coale, "a stationary population is not likely to be receptive to change and would have a strong tendency towards nostalgia and conservatism." In this statement there is a strong tendency towards nonsense. Professor Coale goes on to say that a society of this sort would not offer "a reasonable expectation of advancement of authority with age" since there would be essentially the same number of 50-year-olds as 20-year-olds. However for most workers in industrial society this consideration is totally extraneous since they in no meaningful way advance their position between the ages of 20 and 50. Moreover, Coale's argument carried to its logical conclusion means that we must continue ad infinitum to increase the population so that elders will always retain a strong sense of self importance! That such madness should receive a serious hearing is shocking; that it should be quoted

on the pages of a journal entitled Science is an hypocrisy. It is even sadder that most scientists who read the technical pages of Science with a fiendishly critical eye are totally blind when confronted with arguments such as Coale's. Such imperceptiveness borders on brutality, for the issue here is not trivial. It involves the welfare of over 100 million people in the second wealthiest capitalist state on earth.

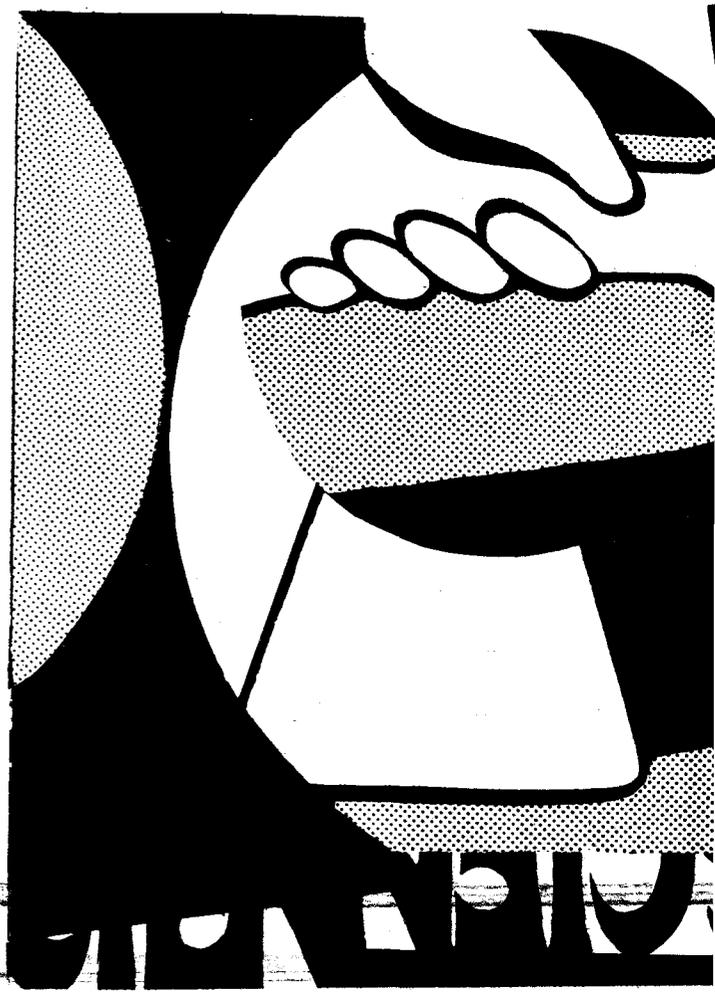
Professor Coale is, however, not the only social scientist to offer an opinion on the matter. A postscript appeared in Science several months after the Boffey article in the form of a technical comment by Alan Sweezy, a devoted Keynesian from Cal. Tech. He begins by pointing out that it is consummately rational "in the interest of combatting inflation... (to use) ... fiscal and monetary policy to create a bit more of a labor surplus."⁷ In other words when full employment undermines the growth of the economy and hence the position of a nation's industrialists on the world market, it is reasonable to "use" a labor surplus to improve that position. The sanity of an economic system that sets such standards of "reasonableness" must be called into question. For in human terms such a policy means that a certain portion of the populace is forced to forego income (and hence the decencies of food, clothing, housing and education) so that inflation will not damage the endless expansion and worldwide competitive edge so frantically sought after by the Establishment.

But despite his easy acquiescence in the face of "short-range" atrocities perpetrated by fiscal and monetary methods, even Alan Sweezy is at a loss to understand Japan's population policy which is not treated in the approved Keynesian canons. According to Sweezy "a shortage of labor is the same as an abundance of capital" in the long-run or structural sense. While labor or scarcity entails more rapidly rising wages thus imperilling overall expansion, it also means that per capita GNP and hence the welfare of the populace will be on the rise. Hence from the viewpoint of human well-being, the present Japanese policy is absurd.

Sweezy himself makes a pointed statement of the obvious contradiction in all of this: "Surely no democratic government if it understood clearly what it was doing would attempt to keep capital from becoming more abundant relative to labor." Hence the horns of a dilemma. Either the government is ignorant of the consequences of its decisions or it is not a democratic government at all. Sweezy of course accepts the former alternative. But we need only remind ourselves that the inner and upper councils of the Sato government are filled to overflowing with economists of Sweezy's ilk. Ignorance of the subtleties of the almighty GNP is certainly not attributable to them. Then, mirabile dictu, we are impaled on the dilemma's other horn. Japan's "democratic" government patterned after that

of the United States is only an illusory democracy. This of course is really no surprise. Both American and Japanese governments pander to the wealthy, the powerful, those whose sole function is to possess and increase it.

Two considerations emerge from the treatment accorded the Japanese population problem by Science. First, the precarious fault cutting across capitalist society, that between capital and labor, has up to this moment been covered over by neverending expansion and constant war. Due to the developing strength of the socialist nations, the era of internecine capitalist conflict and ever-widening markets may be at an end, and the fault must again come rumbling to the surface. For now a national capital can only preserve its world competitive position by cutting into wages through the implementation of substantial unemployment. Japan has chosen to do this in a rather blatant way. While other national capitals have resorted to other more covert ploys which have the same effect. Second, economists like Alan Sweezy and social scientists like Alan Coale all too often obfuscate broader human and social issues. They are at best technicians hired to prop up an exhausted social order with all its injustices. At worst they are mere apologists, glib men, who receive token privileges to legitimize an ugly social system. Members of the scientific community and people everywhere should not be cowed by their supposed expertise. Intelligent judgment of their inanities is needed now more than ever before.



Boffey is correct when he concludes that in all of this "there are costs involved and someone will have to pay them." And as usual it is not the wealthy elite that pays, it is the people. And it is through the instrument of government policy in this case that people will pay. Is it any wonder then that Japanese students are continually in rebellion? Is it a surprise that they and their contemporaries in other advanced capitalist nations increasingly feel that capitalist democracy as a rule is nothing but a sham and that "representative" governments represent the interests of the corporate elite and their colleagues in government?

J.W.

1. P.M. Boffey, Science, 167, 960 (1970)
2. Ibid. Unless otherwise noted, all further quotations are taken from this same source.
3. J.E. Holler, Population Trends and Economic Development in the Far East, Population Research Project, The George Washington University, Washington, D.C. 1965, pp. 7-8.
4. For Example: Bank of Japan's Monthly Economic Report for May, 1969. In Daily Summary of the Japanese Press (American Embassy, Tokyo, July 2, 1969).

5. T. Ihara, "Japan's Economic Position in the World", Pacific Community: An Asian Quarterly Review, 1, 4 (1970), p. 632. Of course Ihara tries to pin the entire price rise on the press for higher wages. Actually the effect of the wage rise is to cut into the enormous profits reaped from already excessive prices set by monopoly capital. To preserve these bloated profits, prices must then be raised even higher. cf. Michal Kalecki, Theory of Economic Dynamics (Monthly Review Press, New York, 1968).

Even more interesting are Ihara's further comments: "Also from a long term point of view, we are concerned about how we can maintain people's will to work. The contemporary generation have been brought up in a period of overemployment and are not aware of the danger of unemployment. They are gradually becoming contented with their clothing, foods and dwelling. Now the desire for material affluence has ceased to be a strong incentive for work. Then where shall we seek such an incentive?" In other words modern expansionistic capitalism needs the stick of threatened unemployment as well as the carrot of material well-being if it is to maintain its frantic pace. Alienated labor given material concessions may not be very productive in the long run. Meanwhile the pace and insecurity of the present system are producing psychological wreckage of enormous proportions.

6. Apparently the only reserves of labor left consist of older workers, many still on the farms, who are apparently less productive and/or more demanding of higher wages. Boffey quotes the economist who heads the Family Planning Federation of Japan: "The industrialists say that the labor shortage is severe. But I say what is deficient is young labor which is very cheap. So all we can say is that we lack cheap labor, only that." Regardless of the importance of the age factor in all of this, the point of the new policy is to prevent further wage increases by providing additional labor reserves.
7. A.R. Sweezy, Science, 169, 97 (1970). All further quotations attributed to Sweezy are drawn from this source.



PANTHERS SUGGEST
A "FREE SCIENCE PROGRAM"
TO SESPA — SCIENCE FOR THE PEOPLE

Two communications from Black Panthers who are presently political prisoners (Panther 21) were received in August. Ali Bey Hassan writes, "...welcome to the just struggle for liberation of all the people...we as a people who are struggling for survival, know that 'true freedom' cannot be given to anyone. We recognize (that), in order to determine our own destiny, we will have to wage a 'class struggle' ...(in which) different classes of people ...(must) use their many different skills and talents ..., instead of just seeking more money, titles and fame for...(their) own selfish good. ...(Such behavior just) gives our oppressors more money and more power to further exploit and oppress minority people in this country and other countries.

"At this time, it would be best for the scientists who are making their commitment to the people's struggle to work out a 'free science' program that will enable black people to further their knowledge of science so that this knowledge can be brought back into the black communities, so that with this scientific knowledge, we can better our chance of survival as a people.

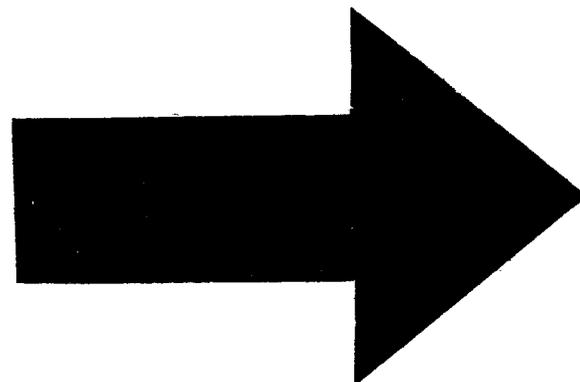
"To set up the 'free science' program contact Panther 21 through Dr. Curtis Powell and we will deal with it in a collective manner to give you assistance in setting up the program."

Another more lengthy memorandum from Kwando Mbiassi Kinshasa (also of the Panther 21) was received at the same time.

In a brief response we listed some of our activities that are already in the spirit of the suggestion and promised to circulate the suggestions for discussion among the membership.

Those who wish to contribute to this discussion and who are not familiar with the Black Panther Party and its program should find a pamphlet "The Black Panther Party, Myth and Reality" very useful. The pamphlet was written last May by a group of employees, students and faculty who were on strike in the Harvard Medical Area. Copies can be obtained from Boston Sespa.

H.F.



Three resolutions are being presented to the AAAS governing board to be voted upon at the annual meeting in Chicago on December 26th-30th. They were mailed to the committee on Council Affairs on November 23rd - one month in advance, as required to be put on their agenda.

Last year, three similar resolutions were circulated among persons attending the annual AAAS meeting, and each collected several hundred signatures. The governing board of the AAAS nevertheless refused to consider them.

Together we may conceive of amendments or additional resolutions to be proposed for inclusion in the agenda. For example, the Boston group is presently considering demands for (1) democratic representation for all scientific workers in the AAAS decision making and (2) institutional protection of scientific workers from economic reprisals resulting from their social and political action.

Consider these as working-draft resolutions. Discuss them with your fellow workers. Send or bring your suggestions to Chicago (% Larry Lambert, Dept. of Physics, Univ. of Chicago, Chicago, Ill. 60637; tel(312) NO7-4700). Circulate them where you work and help to obtain wide support in Chicago up to the last day of the AAAS meeting, when the HIGHER officers of the association sit in deliberation and pronounce their VOTE. Active support for the resolutions by a large number of scientific workers is at least as important as their endorsement by the governing board.

Action is necessary to close the gap between the pronouncements and the practices of the scientific community. These resolutions propose action in behalf of the best long-range interests of all the people including scientific workers. Because the resolutions are reasonable, practical, consistent with the frequently enunciated principles of the AAAS and with the best tradition of social responsibility in science, we expect endorsement from all who are truly committed to "the promotion of human welfare."

In the last analysis, the community of scientific workers and their organizations must be judged by their practice. The time for action is now.

AAAS Action '70 Resolutions Committee

ON POLITICAL REPRESSION

Whereas many Americans are exercising their privilege as free citizens in working together to change the oppressive social and economic system in which we live;

and whereas the institutional powers react to this by mobilizing public opinion through appeals to fear and prejudice by proposing yet more repressive legislation, by jailing political dissenters and by killing blacks, Chicanos and students;

and whereas the scientific community - through its leaders, administrators and spokesmen, under the banner "science is neutral" - is courted, menaced and/or bought off by the large corporations, the U.S. government and its thousand agencies into serving the cause of the privileged and the oppressors;

and whereas in particular scientific workers have been among those arrested, black-listed, fired, discriminated against in hiring and promotion and otherwise harassed for exercising their rights to the free expression of their political beliefs;

It is time for the AAAS to act to the best of its ability, in accordance with its stated goals, to promote human welfare and further the work of scientists.

Therefore be it resolved:

1) That the AAAS establish a committee of scientists and victims of repression to look into the activities of scientists in connection with the police, military, intelligence, and other repressive agencies in such areas as wiretaps, surveillance, data banks, riot control and weapons development. This committee will report to the public facts and figures concerning contracts, development and specific uses of these instruments of political and social repression.

2) That the AAAS establish a fund to help, protect and secure the liberties of the victims of such repression. In particular, the committee should consider immediately the cases of scientists and academics, such as Prof. William Davidon (Haverford College), Dr. Curtis Powell (Panther 21), Prof. Charles Schwartz (Berkeley), Prof. Angela Davis (UCLA) as well as non-scientists such as the Soledad Brothers and the many black and white victims of repression presently illegitimately incarcerated or threatened.

3) That the AAAS take a public stand condemning the pending Defense Facilities and Industrial Securities Act and similar legislation, not only because of the threat it represents to the scientific world, but because it is an integral part of the larger repression against which the AAAS commits itself to struggling in this resolution.

ON THE INDOCHINA WAR

Whereas one of the purposes of the AAAS is "to improve the effectiveness of science in the promotion of human welfare";

and whereas the government of the United States exerts great effort toward improving the effectiveness of science in the suppression of struggles for liberation at home and abroad;

and whereas the current policy of the government of the United States is a formula for the indefinite prolongation of the war and the continuing destruction of the people of Indochina,

Therefore be it resolved that the AAAS demonstrate its commitment to human welfare by communicating to the President of the United States a demand for the immediate withdrawal of all U.S. men, women, and material from Indochina.

ON WOMEN IN SCIENCE

Whereas the objectives of the AAAS cannot be realized while women in science are relegated to second-class status;

Therefore be it resolved that the AAAS demonstrate its commitment to its own objectives by endorsing the eight demands incorporated in the statement on equality for women in science. [printed in the August issue of *Science for the people*]

BIRTH CONTROL IN AMERIKA

It should be easy to limit a woman's reproduction by sterilizing her at the birth of her nth child. Is this a shocking idea?... The Women's Liberation Movement may not like it, but control must be exerted through females. Divorce and remarriage play havoc with assigning responsibility to couples or to men. Biology makes women responsible.

(Editorial in Science, 31 July 1970, by Garrett Hardin, PPP, University of California, Santa Barbara.)

How is birth control practiced in our society? It should come as no surprise that in a society where women are the lower caste, birth control is practiced by intervention on the female body. The upper caste, after all, runs the show. The power structure in our society is male. The scientists who do birth control research are male. The government agency (fda) that allegedly checks this research is male. And doctors, natch, are male. The only role females play in all this is a passive and suffering one. We are the experimental objects of these Dr. Frankensteins.

It's a familiar story to women. We go to a doctor and lowering our eyes, embarrassed at our dependency, with a mixture of fear and anger we stumble through that horrible sentence, 'What do I do not to get pregnant?'. Remember, we are asking this of a male doctor, behind whom stands the drug companies and their male researchers, behind whom stands your friendly fda, and behind whom stands the whole power-penis-potency complex (PPP). What do you think he's going to tell us? Right! 'Get high on our latest special, the PPP's Pill!' Great new wonder drug! It launches frontal attack on the pituitary gland (fondly known as the master gland of the body--which means that our entire hormonal system is assaulted) and 'saves us from pregnancy' in exchange for a two-page long list of side effects -- nausea, edema, vomiting, bleeding, cramps, mental depression, bloating, changes in menstrual period, etc., with risk of thrombophlebitis, pulmonary embolism, cerebral thrombosis, etc. etc. -- which our male pharmacist or male doctor threw in the waste basket, and which we will never see. What we do see are little booklets from the drug companies decorated with roses, tulips and peach blossoms full of reassuring babbling.

If we're lucky enough to remember some high school biology, we may not like the idea of frontal assault on our pituitary. And, trying hard not to hurt his feelings (doctors are very sensitive) we ask hesitantly if 'maybe there isn't something else, something a little less . . .?' Surprise! He even seems pleased at our inquiry! 'Ah yes,' as he pats his belly (sound familiar?), 'a little plastic treat' (his eyes are glowing reverently), 'the *I*U*D*' he sighs. What is this new

marvel, this 'intra-uterine device?' A hunk of plastic with a metal core which gets inserted in our uterus and whose mode of action in there is a total mystery. Great! Dr. Christopher Tietze of the population council says it bluntly enough: 'The virtue of the IUD is that it is in the uterus, minding its own business. Its mischief is confined to the female organs.'¹ Our misty-eyed Santa doesn't mind, but how would you like to have an artificial thing stuck in your uterus for 10 years or more?! Yet we can avoid the worst, it seems. We agree to the diaphragm -- euphoria! We feel Safe, Sound, Independent. We'll gladly grease it every night, wash it, powder it, protect it, check it, stick it in our bodies, tomorrow! tonight! anytime! So wonderful! And it's all on us. Thank you, Dr. Frankenstein.

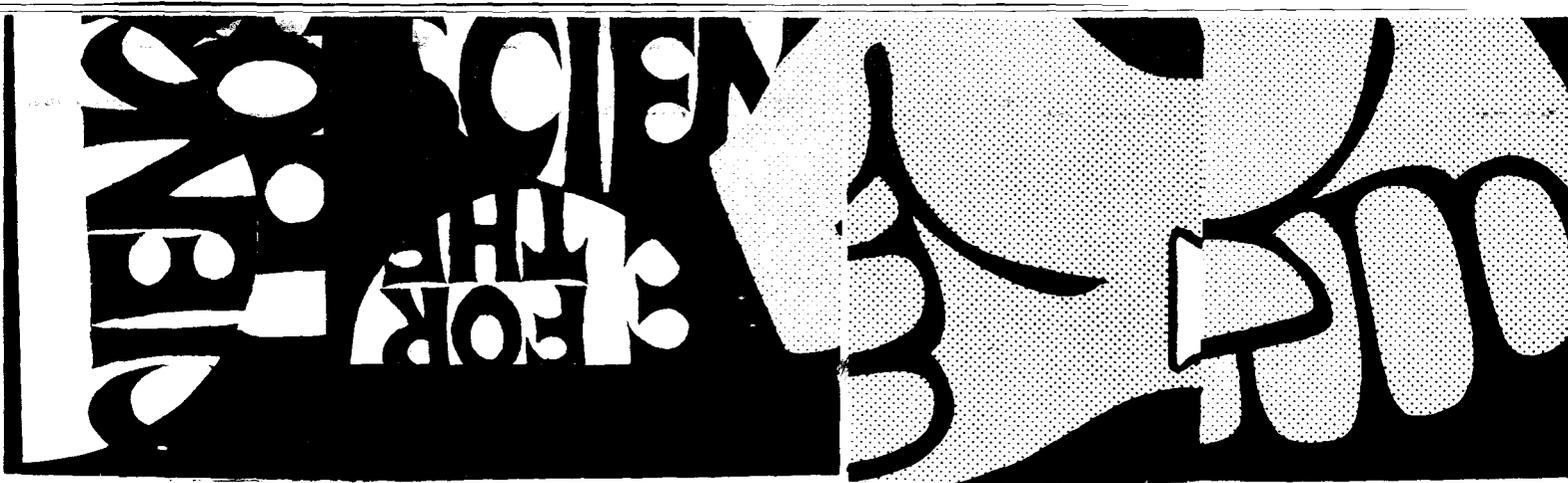
As we go along struggling with the burden of our reproductive system, we might begin thinking as we did when we were very young, 'If I could only be free of this oppression, be like a boy! Boys don't have periods, boys don't have to be afraid of getting pregnant.' The brutal answer to this ancient longing is the male scientist's public advocacy of the sterilization of women. Should we be surprised? In a death-oriented society overkill is the ultimate solution to any problem. And who's going to get sterilized? Not males -- 'no one's fooling with my sperm, baby!' Amerika wants to sterilize its females, us and our sisters, mostly poor, mostly black, mostly mothers trapped on welfare -- the undesirables, the scum of the earth. The brutality is numbing. It goes with the rest of male Amerika's destructiveness throughout the world, only now it's getting closer to home.

Why have we taken this? Because we've had to, because we've been made the underdog (think about that) in this sexist society. They taught us that we had to give up everything, interest, friends, work, and concentrate on the only really important thing for a female: getting a man and getting married. After giving up everything, we've become totally dependent for our psychological, physical and material needs on one other person. So we had better run a good show, wholly dependent but 'always ready.' We think we will be happy, everything's all settled, our man's not going to run away. . . . We've made it! We've met the one criterion by which a woman's worth is measured! And if we don't want to get pregnant because the whole burden of child-rearing is on us? Because our man might, after all, run away? Because he might beat us and insult us if we are 'stupid enough' to get pregnant? Then of course we will go to the doctors and submit to any orders the medical-pharmaceutical complex hands down.

In an article typical of the PPP², Carl Djerassi, president of Syntex Research and ticky-tacky professor of chemistry at Stanford University, lays down four conditions that must be met if the drug industry is to develop better contraceptives -- **and since he claims only private industry can do this** (some mumbo-jumbo about 'multidisciplinary scientific elements, 'creative ability to organize,' 'unique finances'), we're told we better cough up fast. Ahem. (1) 'Conditional approval.'



THANK YOU, DR. FRANKENSTEIN!



which means good-faith blessing by the fda of drugs that have scarcely been tested. Thus a drug will be put on the market, 'use-tested' on the public, stamped 'approved' if we don't die, and withdrawn if we do. Carl, Carl, isn't that what's being done now anyway? (2) 'Right of appeal' if the fda dares to slap the money-makers' wrists. (3) 'Increased patent protection,' so that profits on their brews keep rolling in, and in, and in. (4) And -- arabesque finale, the maraschino cherry at the top -- 'government-industry interaction,' or public subsidy of the private corporations. After all, Djerassi says, this risky business can't go on forever. It serves the people? The people oughta pay.

The time is long overdue to ask about male contraceptives and male sexual responsibility. Where is it? In the same article Djerassi the Bandit advances three 'reasons' for the lack of effort to develop male contraceptives. (1) He claims less is known about the reproductive biology of the male than the female. Bullshit. Study of the male reproductive system is at least as advanced as studies of the female system, and the male reproductive organs are easier to work with: a man's gonads, the testes, are placed conveniently outside the body whereas a woman's, the ovaries, are hidden deep within. There is no hormonal cycle, there is no changing period of fertility. A man's fertility is easier to assess, and the effect of drugs can be readily checked by taking a sample of his semen. It is definitely a simpler situation to control. (2) He says it is easier to experiment on women than on men, because they've got us already through the services of their medical lackeys and the Planned Parenthood Clinics. True. In other words, it's the politics of sexism that scientists serve. (3) And of course that old favorite, that classic reason -- 'the male's generally lesser interest in, and greater reservation about, procedures that are aimed at decreasing his fertility.' Tst, tst, tst. Wonderful this consideration for possible experimental subjects, but how many women have been accorded such delicate scientific concern? Might we hazard a daring hypothesis? Could it be possible that the sex of the drug executives and the researchers has something to do with this? Could it be that the whole power complex trembles at any notion of sperm-control? After all, the reluctance of the experimental subjects could easily be overcome -- just give them booklets of peach blossoms and tulips to calm their silly fears.

What is to be done?

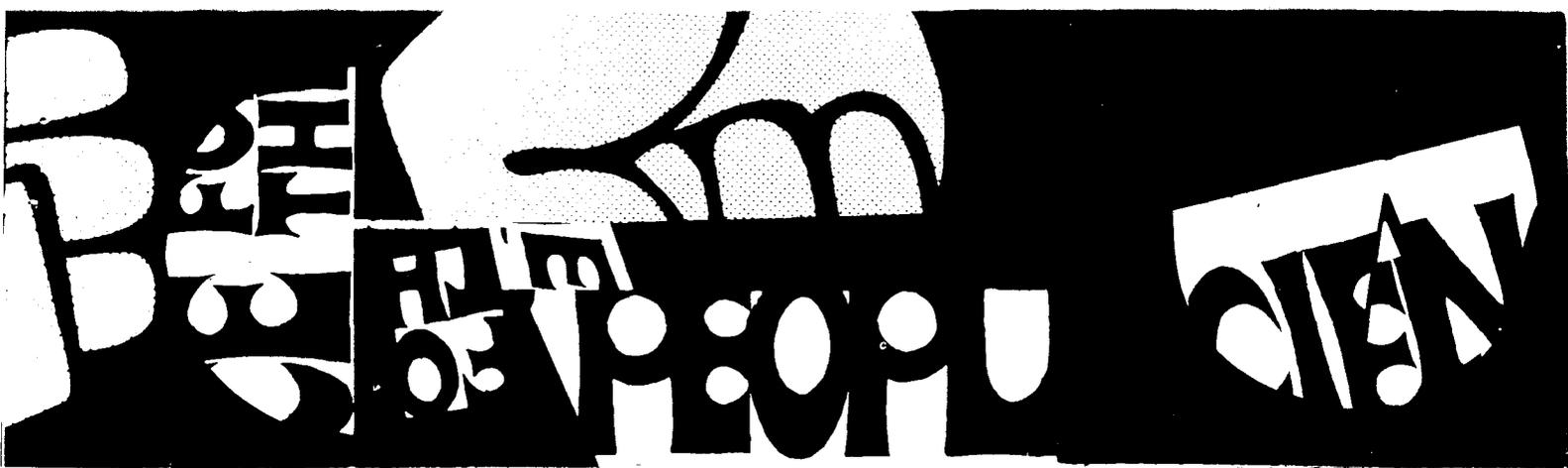
Women must stop using methods of contraception that endanger our physical and mental well-being. Doctors cannot be trusted. Contraceptives that have to be taken under their supervision should automatically be considered Dangerous. How many women who've been prescribed the pill first had had their liver functioning tested, or were thoroughly checked for mastitis, kidney disease, thrombo-embolism, mental depression, diabetes, family history of cancer, etc.? How many of the pill-pushers, even if they are aware of counter-indications, have prescribed their little dynamite anyway? How many of us have even been informed of the possible complications, or had other reasonable alternatives presented to us? And the IUD is not a reasonable alternative, since doctors cannot be relied on to test for pelvic infection or even to inform us of the possibility their devices will puncture our uterine wall, etc. The right of women to our physical and mental well-being must be reclaimed. These contraceptives should be withdrawn from the market.

Where does this leave us? The responsibility for birth control has to be shared by the reproductive unit: female and male. *There is at present only one method available which shares the responsibility, doesn't have dangerous side effects, and doesn't require reliance on the medical establishment. This is the use of a condom by the male and a spermicidal foam by the female.* Research into other methods that meet these three requirements must be begun at once.

Those of us who have been harmed while being used as human guinea pigs must be compensated. This includes the women in Puerto Rico, Haiti, Yugoslavia, Thailand and other countries, and all women in prisons and ghettos. The experimentation that is currently being conducted on all of us must stop.

Centers for women must be established to help us regain our dignity, vitality and sense of personhood. Programs to teach us about our bodies and basic health care should be carried on. Clearly, these centers must be staffed and controlled by women.

Clinics must be established for the mass rehabilitation of adolescent and adult men. Programs should be devised to help them repair their personalities and to overcome fears about their penises, their potency and their semen. These programs would greatly benefit from counselling by women.



These centers and clinics should help us destroy the power relationships that cripple us and that, through us, suffocate our children.

Free legal abortion must be made available to any women desiring it. Women who wish to carry their pregnancies to completion must be granted free child-care facilities for their children. This means that food, clothing, medical care, all the basic needs must be provided. These must be open 24 hours a day, 7 days a week. The fact that abortion is considered criminal is criminal itself. It is this and the lack of social responsibility for children that drives women to dangerous devices and drugs advertised as 100% 'effective.'

A massive effort to develop safe contraceptives for women and men must be launched. Priority must be given to the development of male contraceptives. WE MUST REFUSE TO TAKE TOTAL RESPONSIBILITY FOR BIRTH CONTROL.

Women who wish to begin helping themselves should watch for the course Women and Their Bodies, taught and published by a collective of Boston-area women and soon to be available at the New England Free Press, 791 Tremont Street, Boston, Massachusetts, for about 50 cents. Also available from the New England Free Press is the Birth Control Handbook, an informational pamphlet published by the Arts and Science Undergraduate Society of McGill University, Montreal, for 10 cents.

R.A., C.H., C.K.

¹Barbara Seaman, The Doctor's Case Against the Pill, Avon Publishing, New York, p. 214.

²'Birth Control After 1984,' Science, 4 September 1970.

³Its efficiency, as with all other methods, depends on how seriously it is followed. Even 'the infallible pill' is subject to this simple rule. Forget it once and the failure rate goes from the theoretical 0.0 to 9.2. (Failure rate = number of pregnancies in 100 women using x method for 1 year.) The literature on birth control gives wildly different estimates about the efficiency of different methods. But one thing is

ELI LILLY & CO.

October 22, 1970

Dear Doctor,

In 1966 Eli Lilly and Company introduced the oral contraceptive product C-Quens. The Food and Drug Administration and Lilly concurred that the product was safe and effective in women on the basis of animal studies and human clinical trials. However . . . in continuing studies in laboratory test animals . . . mammary nodules have been observed in some beagles that had been given 10 and 25 times the human dose for C-Quens for 30 months. These nodules resemble those that often occur in old female beagles and that are generally accepted to be benign mixed mammary tumors. In the test animals the nodules appeared at a much younger age and were more numerous than in the control group of beagles.

These observations in dogs cannot be transposed directly to human beings . . . Nevertheless, the company believes it prudent to recommend that women using C-Quens be transferred in an orderly manner to other means of fertility control. This change need not be earlier than the end of the current cycle of therapy. Although we suggest that the present cycle not be interrupted, the transfer should be done as soon as possible.

Eli Lilly and Company has decided to discontinue the manufacture of C-Quens . . .

Sincerely,

Eli Lilly & Company

clear, the most important variable is 'individual failure.' Almost all contraceptives are 100% effective theoretically -- what makes them different is the consistency or care with which they are used. The use of condom and foam gives **double protection**. The failure rate of the condom is about 10-15 (which reflects the number of times the man will 'forget' to use it or the condom will break) and that of foam is 2-7. The foam thus acts as a second contraceptive agent in case of condom failure. The failure rate here should thus be 0.01-0.08.

The document printed below is a translation of a speech a young French theoretical physicist, Jean-Marc Levy-Leblond, gave in January, 1970 when he accepted an academic prize for his research. In a letter he writes,

“...I do not claim any originality for the ideas advanced. In fact they result from many discussions and are shared more or less by many of the most radical scientists here. Perhaps this point should be made clear, especially in the States; I do not want these ideas to appear as far-fetched personal thoughts, but only as a personal expression of a collective thinking, deeply rooted in the new French radicalism, especially since May 1968.”

On June 7, 1970 Levy-Leblond was arrested, accused by the Dean of the Faculty of Sciences of the Sorbonne (where he holds a teaching position) of the crime of “desecrating public monuments”. He was charged with having spraypainted slogans on the walls of the science faculty: “RESISTANCE!”, “DOWN WITH THE STATE!”, “FLICS OFF CAMPUS!”

Many of the points in his speech are merely sketched out by Levy-Leblond. Part of our task is to deepen our analysis and understanding of the functions of science and scientists.

■ It is with much satisfaction that I receive, today, the Thibaud Prize awarded by your academy. And I experience a special pleasure, whose nature I hope to make you understand, in being able to thank you in person. In fact this prize is useful and valuable to me for several reasons; in particular it has given me the chance to think more deeply about my situation as a research scientist, as well as the possibility of giving some of my conclusions today.

It is impossible, in fact, to receive such a prize without asking oneself several questions: why this reward; what meritorious thing have I done; in whose eyes? And more generally, what and whom does my scientific activity serve? Why do I do research, what are my personal motivations? Why does society organize scientific research, what is the role of science in our society? These questions have more and more often been asked in scientific circles as well as outside of them, especially since the great movement of May 1968 which placed everything in question.

ADDRESS TO THE ACADEMIE DES SCIENCES

There exist a series of “natural” responses to all of these questions. Isn't it, in fact, absolutely evident that science plays a fundamental role in the evolution of society today and is the essential motor of its progress? That the scientific researcher has thus become the necessary agent for the happiness of humanity and takes in this thought his primary motivations and his greatest satisfactions? One recognizes here the themes of an incessant lecture (sometimes in more subtle forms although it is really there), heard from grade school to the university, pushed as much by the most conservative as well as by some revolutionary voices.

There are, however, good reasons to entertain the most serious doubts as to the validity of these responses. Consider first of all the relationship between fundamental research and the progress of society. Two of the most expensive and prestigious branches of modern science are, without doubt, high energy particle physics and space physics. But where are their contributions to general progress? High energy physicists, almost unanimously, have no difficulty in admitting that no application is expected from their domain. As to the much extolled spinoffs of space research I only know of heat-proof ovenware and other similar gadgets. Of course it is easier for me to talk of these things than my own work, for which you are rewarding me today, which furnishes a brilliant example of “pure” research, that is to say gratuitous and without much other interest than to excite the curiosity of some twenty specialists in the whole world.

Of course there are some fields where one glimpses some enormous possibilities for application: medicine or agronomy, for examples, in which there seem to be some technical solutions for the problems of sickness and hunger which are the problems of the great majority of humanity. But the social structures are exactly such that these technical solutions can't be put to work. When one thinks only of the scandal of crowded hospitals, of the lack of mass health care, of the superprofits of the drug industry and of the lack of support for medical research in France - to say nothing of the problems of the countries which have just escaped from colonial domination. And if, in fact, technical progress does lead to an increase in industrial productivity there is no known case where this has led directly to the amelioration of the living conditions of the masses. It takes a hard, never-ending, social struggle to force the ruling class not to use for their own exclusive profit the new possibilities created by modern science. Thus the modernisation of industry is most often translated into lay-offs for the workers. So between 1958 and 1968 techniques and industrial productivity increased prodigiously - but it took the great strike of May - June 1968 to enable all workers to obtain some improvement in their working conditions - improvements which immediately began to be trimmed down, little by little, by the bosses.

These doubts about the progressive function of science lead to some others about the motivations of the scientists. Certainly a greater and greater number of them are becoming aware of this situation and some come to these conclusions, but too often they take refuge in an ethic of knowledge for knowledge's sake, where science becomes its own goal (for example look at the inaugural lecture of J. Monod at the College de France.) Here, without doubt, is the last resort of those who refuse to look at the facts in their face.

However, in fact, far from advancing the idea that science and research have no value I am convinced that they are very useful. Only they don't, at all, serve the purposes and groups they pretend to serve. Scientific activity cannot, anymore than any other activity, be separated from the totality of the social system in which it is practised. As with the others it is principally oriented so as to insure the perpetuation or, at least, the survival of this system. The mechanisms by which it assumes this role are complex but one can, nevertheless, distinguish several types of relations.

First, on the *political* level, it is evident that the imperialist powers use the resources of modern technology to the utmost in order to obtain weapons destined to guarantee their power. Undoubtedly the most numerous and coherent applications of scientific research in the last few years have been in this military domain. But, despite the blackmail of atomic terror, the use and effectiveness of these applications remain limited. One need only look at the victorious resistance of the Vietnamese People to American aggression in order to persuade oneself that technology and science are not sufficient to guarantee military and political power. Furthermore, these military applications principally use some relatively old discoveries and not the fundamental scientific research of today which, above all, interests me here.

Next, on the *economic* level one knows the increasingly important role played by fundamental research in the budgets of the developed capitalist countries. Can one seriously believe that such important investments would be made if they had not some use? Since, as I have already indicated, these investments are not, in general, meant to lead to more or less technical applications it must be that they are, in themselves, a necessity of the system. In fact, one sees here yet another means which modern capitalism uses to try to cure its old crises of cyclical overproduction. Scientific production, not leading to mass consumption, can thus play a role as an economic regulator (equally true for the arms race, as well.) The proof is given by the sudden budget restrictions on research in periods of recession: the faucet is closed after the bowl has overflowed and the level sinks! On the other hand, in a period of economic prosperity scientific research is a fabulous source of superprofits for certain industries, for example electronics. Thus these monopolies find a particularly discreet way to pocket public funds, that is to say funds which the state extorts from the mass of workers. But I pass rapidly over these economic aspects which it would be worthwhile to study more closely.



I now want to mention the crucial *ideological* role of science. One can advance the idea that after religion, followed by the classical humanities, it is today science which increasingly underlies and structures the forms of ideology imposed by the social class in power - that is, the bourgeoisie. Then is science used to give a mask of objectivity and technical expertise to the domination of this class; to capitalism; to exploitation? Oh no, we are only speaking to you about operations research, management, etc. The so-called scientific eminents take for themselves a mission of public relations for the system: Leprince-Ringuet comes on television full of worldly platitudes (but in his own laboratory he ferociously crushes the technician's strike,) the Nobel Lauriate Kaslet and Monod spread warnings of left intellectuals, never mentioning the technocratic agents of capitalism such as Louis Armand. Science serves to justify the whole apparatus of the social hierarchy by giving it its "objective" criteria. This hierarchy supposedly no longer reflects the class divisions of society but only the aptitudes and competencies of individuals. And indeed it is clever to replace Latin by modern mathematics as an instrument of social selection in secondary schools: the results are the same but the mechanism is, temporarily, a little less evident.

*RADICAL SCIENCE
INFORMATION SERVICE*

is a project to coordinate short articles dealing with science and technology. RSIS articles will be submitted to LNS (Liberation News Service) which supplies 100 underground newspapers and radical projects. Anyone interested in contributing to this service please contact:

*Alan Steinbach
6522 Dana
Oakland, Calif.*

*Dept of Physiology
U. of California
Berkeley, Calif. 94720*

Finally, the last service rendered to this society by science is to direct the new circus games with which they attempt to amuse the crowd and to divert them from serious questions. How else can the race to the moon be explained; the robots which scoop up its dust, at a price of billions of dollars, which represent, in fact, the sweat and blood of billions of people to whom one throws this spectacle as fodder?

In the light of these remarks on the true role played by science, the scientist, the "scholar," appears as the agent of these mechanisms of enslavement. Whether or not he is conscious of the forces in whose service he works he is, in any event, necessarily complicit. In fact, all of the motivations referring to external use that I cited above: whether it's a matter of technical progress; or of the happiness of mankind; or even of the ethic of science for the sake of science, are all mere hypocrisy in the face of these facts. Actually, in research as in everything else it is the race for power which inspires scientists. Whether it's inside the scientific community itself, or on the scale of society in general, one always finds the ideology of elitism at work. Today a university scientific career is a very good starting place for certain government positions. And why not speak very vulgarly about the many material advantages that scientists derive from their profession: in addition to stable employments and a comfortable salary they add, in proportion to their position in the hierarchy, free trips to foreign countries (and even remuneration for them since the expenses of these trips are always overvalued,) and sometimes considerable additional benefits such as contracts with industry, positions as scientific consultants and ... non-negligible scientific prizes such as the one you gave me today. For what other reason did I put myself forward as a candidate for this prize?

And so I find the answers to the questions that I asked at the beginning. Why scientific prizes other than to reward those who have best carried out the role assigned to them by this society: to propagate and publicize the idea of a politically neutral and socially progressive science; to accept and amplify the ideology of elitism and expertise, and thus to aid the ruling class to mask the mechanisms of exploitation and oppression on which this society is founded. And naturally, the more the researcher is "pure" and unconscious of this role, the better he plays it, whether the reward is in money, in individual prestige, in crumbs of power. But, as with every selection system, there are failures in the selection mechanism, and for once the money from a scientific prize will aid those who would construct a society without exploitation, without hierarchy, and without prizes.



SCIENZA PER IL POPOLO

Regional Science is the name used to describe the practice and abstract musings of those scientists and technologists who are concerned with the technical problems of regional development and the interrelationship between regions. Of course many who work in the field recognize that the problems are not really all technical. But even those who do realize the social and institutional dimensions of the problems tend to deal with them in technical terms. Examples of the work of regional scientists are: 1) locational problems-- where to locate industries, schools, homes relative to resources; 2) transportation problems--where to place transportation routes, what type, expected use with respect to quality and quantity; 3) resource allocation problems--optimum allocation of limited resources for development of underdeveloped regions or redistribution in unevenly developed areas; 4) city design; etc.

In the first week in September, the Italian Section of the Regional Science Association met. About seventy Italian regional scientists and five North Americans attended; some presented papers reporting on the results of a variety of projects, on various theories and on methodology. Most of the people were well-motivated--really believing they were doing things for people--but since most were paid by governments, private funds or universities and since most had the usual failings of technologists--the unsupported belief in the potential of technology alone to solve human problems--a great deal of the presentations were either empty or accepting of the institutional *status quo* or in outright service to the ruling class.

This group of conscientious, socially concerned people whose practice was in contradiction to their own understanding were curious about the slogan "Science for the People". Seeing the button on the lapel of a visiting SESPA member was enough to invite questions. On the day prior to the meetings some contact was made with a few persons who were to attend the four sessions that were to ensue in the following two days. Among these one was very responsive, liked the Science for the People program, and took a button to wear. Consequently, on the morning of the first session two persons were wearing Science for the People buttons.

By the beginning of the afternoon session about ten were wearing buttons, and there had been many worthwhile private discussions. By the end of the meeting on the second day almost half were wearing Science for the People buttons, speakers were referring to the slogan *Scienza per il Popolo* and quotations from Mao and Che Guevara had become part of the discussions. The very meaning of the technical pursuit of regional science without a substantial change in the social and economic structure of society was being questioned from the speaker's platform. Reaction was already evident, for example, in one speaker saying that he had never been to a meeting like this before, and he hoped in the future the attendees would turn to the technical problem and leave out the politics.

How did this come about? There was no guerilla theater, no protest action, no leafletting. Was it the work of an outside agitator? No, it seems to this author that it was the result of inside agitation--agitation in the minds and spirit of the people at the meeting. Scientific and technological workers live a contradiction that is peculiar to certain segments of the working class. A part of their motivation and education is the concept that their work is for the good of humanity. A welder or machinist is not taught, along with the teaching of his skills, that by being a welder or machinist he can make the world a better place in which to live. But so often a scientist is led to believe he is pursuing knowledge and learning skills that he can use for humanity. Therefore, when he finds after a short while in the practice of his trade that he is just being used as a well-trained servant of the ruling class, he is confronted by a contradiction he must resolve. Some willingly serve the ruling class--they are pig scientists. Some drop out of the technical field either to become revolutionaries or to lose themselves in some other occupation (or non-occupation). But most vacillate, are troubled, try to work from within the system and are frustrated, or just live a horrible schizophrenic existence. The inner agitation of these people is the source of their rising when they are given some hope, some opportunity.



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STATISTICS FOR THE PEOPLE

Did you know that:

.....It is estimated that one million illegal abortions are performed in the U.S. each year, as compared with 10,000 hospital abortions?

(R.E. Hall, M.D., President of the Association for the Study of Abortion and Professor at Columbia's College of Physicians and Surgeons)

.....in New York City, no less than 43% of deaths counted as 'maternal mortality' are due to complications of criminal abortion?

(same source as above)

.....according to the U.S. Department of Disease Brain-washing and Charity (H.E.W.) and the 1966 population yearbook of the U.N., this country ranks 16th in the world for infant mortality, 12th for female life expectancy and 21st for male life expectancy?

.....in 1968 the A.M.A. political action committee (A.M.P.A. C.) doled out an estimated 2.6 million dollars in political contributions to candidates who mirrored its conservative views?

(Time, Feb. 21, 1969)

Either M.D.s are stingy, or congressmen are cheap and sick old men.

.....in 1968, drug companies spent over $\frac{1}{4}$ of a billion dollars exclusively for the nation's 200,000 prescribing M.D.s. That means that \$4,500 per physician per year were spent in promoting and advertising drugs.

(Prescription Task Force of H.E.W.)

SCIENZA *cont'd*

Of course once the inner contradiction of the scientist is brought to light, there is still a long way to go. He must conquer life-long habits of accepting privileges and of exercising minor power. He must relearn the language, avoid mystification of his work, end his belief in the cure-all possibilities of technology. He must learn how to learn from the people—all people—how to serve them, respect their culture, their collective understanding of their own needs. He must learn that the way to serve the people is by joining their struggle for liberation, their struggle against bureaucracy, against imperialism. This is a long process involving much struggle, and in their struggle scientific and technological workers must help one another by continual criticism, exchange of experience, and exemplary actions.

Following the meeting a few of those attending arranged a small meeting between some local radicals and a member of Science for the People. Arrangements for further communications were made and experiences exchanged. It is a small beginning but the rulers of the world are organized on an international level and so must we be. Scientists always talk about how science is international and so it is—and so also is our movement. So in Rome
Scienza per il Popolo !

HF

The Military Industrial Scientific Complex has come to dominate many facilities of the University of California at Berkeley. The Lawrence Radiation Laboratory there has been instrumental in the development of nuclear arms as well as the ABM and MIRV. Repressive measures have been taken against Cal scientists who voice criticism, most recently against those who have expressed concern over the dangerously high levels of radiation to which the AEC is exposing America.

SESPA has been active in the heart of the beast at Berkeley. The SESPA group there has just published a pamphlet detailing the ugly history of military and nuclear "science" at Cal. Called U. C. Science At War, it can be obtained by writing: SESPA, Box 4161, Berkeley, California, 94704.

This chart is a sample of contracts for incendiary munitions awarded between July 1, 1968 and June 30, 1970. For a more complete listing of contracts, see the chart of incendiary munitions in the first edition of the NARMIC pamphlet "Local Action/Research Guide No. 1; Weapons for Counterinsurgency; Chemical/Biological; Antipersonnel; Incendiary." (Available from NARMIC, 160 N. 15th St., Philadelphia, Pa. 19102, \$1.00) There is a total of 39 companies and institutions that have at one time or another produced or developed incendiary munitions (exclusive of white phosphorous projectiles.) Contracts beginning with the letters DA are Army contracts; with AF or F, Air Force contracts; with N, Navy contracts. Special thanks to the Liberated Guardian of September 27, 1970, p. 14. JN

WHO ARE THE MAD BOMBERS?

Contractor	Product	Contract
A.M.S. MFG. INC. Melville, N.Y.	Firing pin holder for M36E1 750-lb. incendiary cluster bomb	DAAA 15-70-C-0230 \$170,660 12/23/69
AMERICAN ELECTRIC, INC. La Mirada, Calif.	BLU-32A/B Firebomb filled with napalm B 4,530,723 lbs. of napalm B loaded into BLU-27/B bomb cases	F42600-70-C-0728 \$9,234,164 10/23/69 F42600-69-C-3363 \$408,265 7/11/69
AMRON CORP. (subsidiary of Gulf & Western Industries, Inc.) Waukesha, Wisc.	M56E5 20mm. high explosive-incendiary projectile	DAAA24-70-C-0324A \$1,887,300 1/ 2/70
ATLAS FABRICATORS, INC. Long Beach, Calif.	MXU-469/B fin assembly for BLU-1/27 firebombs	F42600-69-C-2821 \$187,791 2/25/69
BARSTOCK PRODUCTS, INC. Sun Valley, Calif.	Firing pin for M36E1 750-lb. incendiary cluster bomb	DAAA 15-70-C-0168 \$61,221 11/10/69
BRUNSWICK CORP. Sugar Grove, Va.	M201A1E1 fuze for M14 thermate hand grenade and other hand grenades	DAAA13-70-C-0015 \$25,651 9/30/69
CLARKE CAN CO., INC. Philadelphia, Pa.	Container assembly for M14 thermate hand grenade and M34 white phosphorous	DAAA15-69-C-0020 \$45,530 7/31/69
COLT'S, INC. Hartford, Conn.	FMU-7B/B electric fuze for firebombs	DAAA15-70-C-0233 \$806,861 12/10/69
FOURDEE, INC. Cascalberry, Fla.	FMU-7B/B electric fuze initiator for firebombs	DAAA15-69-C-0742 \$249,951 7/14/69
GALION AMCO, INC. Galion, Ohio	M505A3 fuze for 20mm. high explosive-incendiary projectiles	DAAA25-69-C-0165 \$2,159,700 11/14/68
GRAMMERCY MACHINE CORP. Freeport, N.Y.	M39 plunger assemblies for M36 incendiary cluster bomb	\$196,350 (DMS)
HARVEY ALUMINUM, INC. Torrance, Calif.	M56A3 20mm. high explosive-incendiary projectile	DAAA25-69-C-0183 \$2,490,024 11/14/69
L.E. MASON CO. Hyde Park, Mass.	Primer holder for M36E1 750-lb. incendiary cluster bomb	DAAA14-70-C-0226 \$123,103 12/23/69
MAXSON ELECTRONICS CORP. Maxson-Macon Div., Macon, Ga.	Mk77 Mod 2 firebomb	N00104-69-C-0127 \$1,768,068 11/12/69
NUCLEAR SYSTEMS, INC. Garland, Tex.	Cable assembly for FMU-7B/B electric fuze for firebombs	DAAA15-69-C-0746 \$150,864 7/14/69
TALLEY INDUSTRIES, INC. Mest, Ariz.	AN-M14 thermate hand grenade	DAAA15-69-C-0183 \$698,522 11/ 1/68
ZELLER CORP. Fort Wayne, Ind.	M56A3 20mm. high explosive-incendiary projectile	DAAA25-69-C-0184A \$2,516,603 11/14/68

READINGS

Our educational system has the peculiar—not so peculiar—habit of training many of us to become experts in highly specialized areas without teaching us at the same time where and how this specialized area and our activity as humans (not as cogs) fits into the fabric of the society as a whole. Many things are happening at home and throughout the world that require a more thorough knowledge of the interconnections of political, economic, social and cultural events. With a mixture of common sense and access to critical analysis we can understand these processes.

Judging from the letters we receive asking for reading suggestions and from the study groups that are being formed by people who work together there is a considerable need and demand for a critical understanding of history, of social conditions, and of the role of science in society. We have put together a small reading list—a mere beginning—drawing on the materials from several disciplines, notably from the social sciences. It covers a number of overlapping areas and will be followed up by more suggestions, especially on racism, women and students.

Economic Structure and Power in the U.S.

Paul Baran and Paul Sweezy *Monopoly Capital*
G. William Domhoff *Who Rules America?*
Ferdinand Lundberg *The Rich and the Super Rich*
R. Lapp *The Weapons Culture*

U.S. Imperialism and the Third World

Harry Magdoff *The Age of Imperialism*
David Horowitz *The Free World Colossus: A Critique of American Foreign Policy in the Cold War*
Carl Oglesby and Richard Shaull *Containment and Change*

Frantz Fanon *The Wretched of the Earth*
James Petras and Maurice Zeitlin *Latin America: Reform or Revolution*

Science and Technology

J.D. Bernal *The Social Function of Science*
John McDermott "Technology, the Opiate of the Intellectuals"
Daniel Greenberg *The Politics of Pure Science*
Richard Barber *The Politics of Research*

Work, Privilege and Alienation

Andre Gorz *Strategy for Labor*
Karl Marx *The Economic and Philosophical Manuscripts of 1844*
Alan Harrington *Life in the Crystal Palace*
C. Wright Mills *White Collar*

B.F.

LOCAL SESPA ADDRESSES

BERKELEY	Box 4161, Berkeley, Cal. 94704
BOSTON	Box 59, Arlington Heights, Mass. 02175
CHICAGO	c/o Larry Lambert, Dept. of Physics, Chicago University, 5801 So. Ellis St. Chicago, Ill. 60637.
ITHACA	c/o Al Ferrari @ The Glad Day Press, 308 Stewart Ave. Ithaca, N.Y. 14850.
MADISON	c/o Bob March, Dept. of Physics, Univ. of Wisconsin. Madison, Wisc. 53706.
NEW YORK	c/o Tom Benjamin, N.Y. Public Health Research Inst., Dept. of Viral Oncology, 455 First Ave. New York, N.Y. 10016
NORTHFIELD	c/o Mike Casper, Dept. of Physics, Carleton Coll. Northfield, Minn. 55057.
OSSINING	c/o Ed Walker, Spring Valley Road, Ossining, N.Y. 10562.
PHILADELPHIA	c/o Peter Sterling, Dept. of Anatomy, Univ. of Penn., Philadelphia, Pa. 19104.
ST. LOUIS	c/o S. Leiderman, Environmental Response. Box 1124, Wash. Univ. St. Louis, Mo. 63130.
WASH. D.C.	Mike Marchetti, 4004 N. Fifth St. Arlington, Virginia 22203

N A R M I C

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THINK

Consider a society S , in which two types of units exist, F and M , in equal numbers. Strong interactions between one F and one M may be fruitful under suitable conditions, that is produce new F s and M s*. Unit F can have no more than 1.4 fruitful interactions per year, whereas unit M can have in a year up to many hundred fruitful interactions. If S wished to control the production of new units, what would you suggest in order to do so? To control the productive power of F or M or both? Discuss the dependence of the answer on the frequency of the interaction, f , in these two extreme cases: 1) F and M interact totally at random, like molecules in a gas, and 2) F and M interact in exclusive fashion, forming permanent couples, so that interactions between units in different couples do not occur.

* For the sake of simplicity, we consider only 2 units—interactions and disregard ulterior complications due to multi-unit interactions.

Send the answer to *Science for the People*, Box 59, Arlington Heights, Mass. 02175. Correct or interesting answers will be eligible for our Science for the People award. Also, aware of the 'publish or perish' environment in which most of our readers have to survive, we offer an extra bonus for specially great answers: they might... yes... they can... yes, they will be published right in these pages!!!

PS

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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:

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USAF photograph

The U.S. Air Force released this picture with the following caption: "Jungle Spraying — Three U.S. Air Force UC-123 Providers spray defoliant chemicals on the dense Vietnamese jungle. Harmless to human and animal life, the chemicals are temporarily effective against the dense vegetation which may be shielding enemy troops from aerial view. The spray increases visibility by 50 percent within a few weeks." No explanation was offered for the fact that the planes appear to be spraying open fields.

BỒI THƯỜNG
BỒI THƯỜNG CHO TƯỚNG QUÂN

Chính phủ Việt Nam đã quyết định bồi thường cho nông dân, người sản xuất lúa gạo ở các vùng bị phun thuốc diệt cỏ. Việc phun thuốc diệt cỏ là cần thiết để bảo vệ an ninh lương thực quốc gia. Chính phủ sẽ bồi thường cho nông dân những thiệt hại do việc phun thuốc diệt cỏ gây ra. Thời gian bồi thường sẽ được quy định cụ thể. Mọi thắc mắc xin liên hệ Ủy ban Bồi thường.

LEAFLET published by the Vietnamese Government and sprayed with herbicides. English translation below.

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