Humphrey vs. Nixon: Candidates Sharpen the Science Issues

As the presidential campaign entered its final stages last week, candidates Richard M. Nixon and Hubert H. Humphrey escalated their conflict over science-related issues. Humphrey appealed strongly for the support of disaffected academics and released a long-delayed major statement on science in which he attacked many of the views expressed in Nixon's earlier statement on science and technology.

Meanwhile, the Nixon camp, which has lagged in efforts to round up support in the scientific community, issued a release claiming that "more than 100 groups" of scientists and engineers had sprung up around the country to work for Nixon's election. And the Humphrey camp retorted that its own drive to line up scientific support was bringing in so many supporters and financial contributions that "We have hardly been able to keep up with this activity."

Significant Differences

All campaign statements and claims are best taken with a large grain of salt, of course, but Humphrey's statement last week nevertheless seems significant in two respects. For one thing, Humphrey presented the statement to a group of sympathetic California scientists at a specially staged "seminar" that was taped for television. The aim of the maneuver, according to Humphrey aides, was to show academics that Humphrey cares deeply about scientific issues and to combat rumors said to be spreading through California that Humphrey plans to abandon the National Science Foundation. For another thing, although many voters seem to have bought the theory that there's "not a dime's worth of difference" between the Republican and Democratic candidates, the Humphrey statement managed to point up several differences on science-related matters.

There is seldom any way to measure the degree of commitment of a candidate when he says he will reorganize the federal science bureaucracy, foster the development of breeder reactors, or take other steps affecting science. Nevertheless, campaign statements, however imperfect, offer some hint of what a candidate might do as president, and, in this light, a comparison of Humphrey's statement of 25 October and Nixon's statement of 5 October provides some significant contrasts. Here's how the two men stand on various issues:

Priorities. Nixon's statement, entitled "The Research Gap: Crisis in American Science and Technology," particularly stressed the need for increased emphasis on defense research. Nixon said that in 1967, for the first time, the Soviet Union was estimated to be spending more on defense research and development than the United States, and he warned of "the real danger . . . from possible breakthroughs by the huge Soviet research and development establishment." In contrast, Humphrey, in his statement entitled "Science to Serve a Nation," particularly emphasizes the need for putting science to work on such social problems as crime control, slums, pollution, housing, health care, hunger, and education. "I believe science and technology must be servants of our social purpose," he says. To be sure, Nixon cites the potential of science to solve social problems and Humphrey acknowledges the importance of science to national security, and both say they believe in basic research. But, in terms of emphasis, Humphrey seems to stress the social goals while Nixon stresses the military.

Weaponry. Perhaps the most pronounced difference between the two candidates lies in the area of arms control. Nixon, in a militant radio speech last week, charged that "the present state of our defenses is too close to peril point," and pledged to restore "clear-cut" American military superiority over the Soviet Union. He rejected "the peculiar, unprecedented doctrine called 'parity' " —the theory that the United States need be no more than equal to possible adversaries—on the grounds that it would lead to superiority by potential enemies and would generate tensions that could lead to war since potential aggressors might be tempted to take risks against a "flabby" America.

In contrast, Humphrey seems willing to accept parity in arms in hopes it will increase the likelihood of a world arms-control agreement. Two top Humphrey science advisers, Hans A. Bethe, Cornell Nobelist, and Jerome B. Wiesner, former science adviser to Presidents Kennedy and Johnson, told a recent press conference that efforts to keep ahead of the Soviet Union would merely generate another spiral in the arms race and thus increase world tensions and the level of destruction if a war should occur. They said the U.S. already has enough weapons to wipe out any adversary—a theme Humphrey reiterated last week. In his science-policy statement, Humphrey also attacked Nixon's efforts to stall ratification of the nuclear nonproliferation treaty, and characterized Nixon's scientific advisers as "largely from the ranks of persons identified with the nuclear arms race and military applications of science."

Later, in an effort to defuse arms control as a campaign issue, Nixon pledged that as president he would seek "meaningful" arms control agreements and would press for ratification of the nuclear nonproliferation treaty.

Budget Prospects

Funding. Both candidates say science has faced budget problems and must be given greater financial support, but they disagree on the extent of damage caused by budget stringencies.

Nixon's statement charged the Johnson-Humphrey Administration with "effectively reducing U.S. research funds every year" and said this has produced a "crisis in American science and technology." He pledged "reasonable and responsible increases in subsidies for basic research" and a "new national commitment" to R & D.

Humphrey acknowledged that there have been bitter recriminations as funding for research and development has leveled off, but he saw no research "gap" and said America still sets "world standards" in science and technology. He pledged to seek "a growing level of funding" and said he would especially seek "substantial increases in the funding and role of the National Science Foundation well beyond that visualized heretofore—including support for behavioral sciences as well as the natural sciences and engineering." Humphrey also said he would institute new contract and grant programs in mission-oriented civilian agencies, and

NEWS IN BRIEF

• **CANADIAN PHASE-OUT**: Studies for construction and operation in Canada of an intense neutron generator (ING)—which would have been by far the largest and most expensive single scientific project ever funded by the Canadian government—have been discontinued. The Science Council of Canada has requested that Atomic Energy of Canada Limited (AECL), a government corporation, phase out its studies because federal funds cannot be provided at this time. ING's aim was to produce an extremely high intensity of neutrons for basic research and the production of radioactive isotopes for medical, industrial, and other applications. ING was first submitted for government approval in 1966; it would have cost $143 million (U.S.), with yearly operative expenses of about $14 to $19 million, and would have taken 7 to 8 years to build.

• **SALVAGING ALVIN**: The attempt to raise *Alvin*, the 23-foot-long Woods Hole research submarine which sank last week in 4500 feet of water some 120 miles south of Cape Cod, will depend on a submersible, which is even smaller than *Alvin* itself. The 16-foot-long, three-man Deep Ocean Work Boat (DOWB) has been leased from General Motors; it has a mechanical arm, a periscope system, and a depth capacity of 6500 feet. DOWB is to be used to locate *Alvin*, to assess damage, and to attach a cable. Plans then are to raise *Alvin* to a depth where divers can attach a securing system and bring it to the surface. *Alvin*, which achieved fame 2 years ago when it was used to pick up a lost nuclear bomb off the coast of Palomares, Spain, sank when a cable broke, disconnecting the submarine from its mother ship, and water poured in through an open hatch. *Alvin* is named for Allyn Vine, a Woods Hole senior scientist, who helped plan the research submarine.

• **WORLD POPULATION RISE**: The *United Nations Demographic Yearbook* shows that the world's population reached 3.4 billion in mid-1967. The study, which predicts that the world's population will double by the year 2006, says that 75 percent of the world's inhabitants live in developing countries. The yearbook is based on figures reported by national governments.

• **AUSTRALIAN-U.S. PACT**: The U.S. government has signed a formal agreement, which extends existing cooperative technical exchanges with the Australian government and provides for additional sharing of scientific and technical information, and faculty and student exchanges. The joint agreement was signed 15 October during a U.S. Science Mission to Australia by the President's Science Advisor, Donald F. Hornig, and the Australian Minister for Education and Science. The National Science Foundation will administer the initial 5-year program for the United States.

• **IRS RULING STANDS**: Before adjourning, the Senate voted down a Senate Finance Committee amendment, which would have postponed for 1 year the taxing of profits accruing from advertising revenue in publications of tax-exempt, nonprofit organizations; it would have provided time for a congressional study of the 1967 IRS ruling, which says that such revenues are a taxable business income unrelated to organizations' nonprofit purposes. Magazines affected by the ruling include *Science, The National Geographic, The Journal of the American Medical Association,* and about 700 other journals. Certain magazines in a separate category, which includes civic leagues, recreational clubs, federally created organizations, and the like, are not affected; *The American Rifleman*, the journal of the National Rifle Association, for example, is exempt from the unrelated business income tax.

• **NEW MEDICAL CENTER**: A $13,000,000 grant—the largest awarded this year by the National Institutes of Health—has been given to the University of Massachusetts to build a new school of medicine at Worcester, Mass. It is estimated that the new school, which will be completed in about 1973, eventually will have about 400 students.

• **NEW PUBLICATIONS**: *NIH Almanac 1968*, an information booklet on National Institutes of Health data, including history, organization, appropriations, staff, medical research support, field units, and lecture series, may be obtained without charge from the Office of Information, NIH, Bethesda, Maryland 20014.

that he is "committed to strengthening colleges and universities in every section of the country." "Our research and development should grow in rough proportion to our GNP," he added.

Science management. Humphrey, who is more specific on this issue than Nixon, says he would "greatly strengthen the White House advisory apparatus" by having the director of the Office of Science and Technology attend every meeting of the Cabinet and National Security Council, by giving consideration to combining the Office of Science and Technology with the Space and Marine Science Councils, by broadening the President's Science Advisory Committee so as to emphasize the increased role of technology and of the social sciences, and by having the Vice President serve as chairman of the Federal Council for Science and Technology, which is a coordinating body of agency heads.

Nixon, meanwhile, has criticized lack of coordination among federal agencies responsible for R&D and has implied that he would correct the situation, but has stressed that there must be "no Federal scientific czar"—instead "Washington should serve as a catalyst, sponsoring research and scholarship" by the private sector. Humphrey, too, cites the need for government to develop "a vital partnership with non-Federal interests," including industry and universities.

Space. Humphrey opposes a "shutdown of the space program," but he suggests a shift of emphasis from the costly development of boosters, spacecraft, and other technology to "a more general goal. We should continue with research and development in the field of propulsion, both chemical and nuclear. We must direct our efforts toward decreasing the cost of space flight." Projects he suggests be undertaken "as funds are available" include earth-orbiting stations which would detect crop diseases, assess water resources, make astronomical observations, and perform other missions; efforts to learn more about the planets; and projects in the field of communications and weather prediction.

Nixon, though he has occasionally suggested that the space budget might be judiciously cut, has also stated his intentions to make the United States first in space.

Other issues. Humphrey has recommended a doubling of our ocean-related activities over the next 4 years, and the establishment of "multi-disciplinary, technological institutes" on urban sci-

ences, transportation and environmental management. Nixon has urged development of "new methods of treating the mentally ill"; new sources of cheap energy, especially breeder reactors; and new emphasis on lasers, pollution research, and computer technology.

As noted above, Humphrey's science-policy statement was partly aimed at winning over disaffected members of the academic establishment. Last week the Humphrey camp took another step in the same direction by distributing a 69-page booklet, *"The Citizen's Choice: Humphrey or Nixon,"* written by Nelson W. Polsby, professor of political science at the University of California, Berkeley, and published by the Public Affairs Press. Polsby, who is a Humphrey supporter, credits Humphrey with "towering achievement" and concludes that Nixon, as congressman, senator, and vice president "made little or no impact on public policy. So he is as close to an unknown quantity as we are likely ever to see as the Presidential nominee of a major American national party." Significantly, Polsby devotes a good portion of his book to arguing that liberal idealists (who seem to abound in academia) will be making a mistake if they sit out the presidential election and fail to vote for Humphrey.

On the vote-seeking front, both camps claimed major strides in lining up support from members of the research and development community. The Nixon forces claimed that more than 100 "groups" of scientists and engineers have formed to support Nixon, though their press release did not indicate how large, active, or cohesive these groups might be. The press release did include a "partial list" of some 126 "new" Nixon supporters—in what appears to be an effort to counteract the initial impression that Humphrey had a larger and more prestigious group of scientific backers than Nixon (*Science*, 4 and 11 October). The Nixon camp now claims the support of three Nobelists and more than 42 members of the National Academies of Science and Enginering.

The Humphrey camp, meanwhile, by early this week had increased its list of Nobelists to 13, and its stable of Academy members to about 130, so Humphrey would still seem to be ahead in the "numbers game." The Humphreyites were particularly elated at snaring Aihud Pevsner, professor of physics at Johns Hopkins, who was chairman of the executive committee of Senator Eugene McCarthy's scientific group. They also claimed financial contributions were pouring in at a $400-a-day clip and that "well-organized, functioning local groups" were springing up around the country.—PHILIP M. BOFFEY

Birth Control: U.S. Research Advances Despite Papal Edict

"Of Human Life," the encyclical issued by Pope Paul VI on 29 July, condemning the use of contraceptives, has not checked the trend toward increasing involvement by the United States Government in programs concerned with family planning and population control at home and abroad. In fact, some observers believe that, within the United States at least, the encyclical has served chiefly to arouse greater public interest in the world population crisis. "It has given us $10 million worth of free publicity," says an official of one of the voluntary agencies in the birth-control field.

In Congress, where birth-control measures were highly controversial just a few years ago, there is now strong support for such proposals. For example, though Congress gutted this year's foreign aid budget, it insisted that $50 million of the funds it did provide be earmarked for the Agency for International Development's population programs, or $15 million more than it appropriated for that purpose last year. And Congress has, moreover, given the National Institutes of Health $2.5 million to start a program of directed contract research for the development of new contraceptives and for population research by behavioral scientists. The behavioral science studies will include investigations of such things as the effect on fertility trends of various actual or hypothetical welfare programs, family allowances, and tax policies.

This contract research program will be carried out by the new Center for Population Research, established last August in the National Institute for Child Health and Human Development (NICHD). In his health message of 4 March, President Johnson announced plans for the center, and observed: "Two vital fields long neglected by research are population and human reproduction. . . . A wide range of scientists must bring to these problems their specialized disciplines—biologists, behavioral scientists, biochemists, pharmacologists, demographers, experts in population dynamics. . . . The center will serve to give new energy and direction to the research activities of all federal departments in these fields."

Just how the center will "give direction" to the population research being done by AID, the Children's Bureau, and other agencies is not yet clear, but it seems certain that the center's contract research program is marked for rapid growth. By mid-November, the President's Committee on Population and Family Planning (set up in July under the cochairmanship of Secretary Wilbur J. Cohen of Health, Education, and Welfare and John D. Rockefeller III) is due to report, and is sure to recommend major increases in federal support of population research. Establishment of the new NICHD population center is viewed by some people in the population field as the first step toward creating a "National Institute for Population Research" in NIH.

At the moment, the center is quite small, its staff consisting of only six professionals, including the director, Philip Corfman (a Harvard-trained obstetrician-gynecologist), and the deputy director, Arthur A. Campbell (a leading demographer). Two key positions, those of chief of the contraceptive development branch and chief of the behavioral sciences branch, are as yet unfilled. The center will not wait for researchers to propose projects but will actively seek investigators to work in the areas which it and its review panels have identified as particularly promising. By means of progress reports, site visits, workshops, and the like, the center expects to oversee and direct the research.

Corfman believes that, in the field of contraceptive development, the center can play a role that no other agen-