The Hornig Years: Did LBJ Neglect His Science Adviser?

After five grueling years as science abviser to President Johnson, Donald F. Hornig has returned to private life, leaving behind him the inevitable question: How good a job did he do? Unfortunately the question is much more easily posed than answered, for evaluating the contributions of a presidential adviser is a bit like trying to reconstruct a dinosaur from a handful of bones: you can see bits and pieces but you're never quite sure you can assemble the whole animal.

Most of Hornig's work was hidden from public view by the confidential, advisory nature of his relationship to the President. Moreover, his contributions were blurred by the fact that his advice was generally only one factor among the many considerations—technical, political, economic, and social—that lay behind any particular Presidential decision or program. Still, it is possible to get some idea of Hornig's record by talking to people who have worked with him or observed him in action. In the course of preparing this article, *Science* has interviewed more than two dozen such people—White House staffers, federal agency officials, Congressional sources, members of Hornig's staff, and Hornig himself.

"Good" but not "Great"

Their evaluations are somewhat mixed, but the consensus seems to be that Hornig was neither a superlative success nor a resounding failure. Most observers give him very high marks for diligence, hard work, and ability to understand the numerous complex issues that required his attention. But Hornig generally gets lower grades—"good" or "average" but not "great"—in terms of actual accomplishments. However, those who question his accomplishments are quick to point out that most of the blame for any alleged shortcomings lies less in Hornig than in forces over which he had little control—notably the Vietnam War; the growing public and Congressional skepticism toward the mammoth R&D budget; and the complicated, cantankerous personality of President Johnson.

One man who could offer a particularly valuable assessment of Hornig's contributions is former President Johnson. Unfortunately, efforts to obtain an interview with him in the hectic closing month of his administration were unsuccessful. Another measure of Hornig's accomplishments might be contained in a "history" of Hornig's office, which was prepared as part of the Johnson administration's effort to document and justify its achievements. However, the history has not been made public, and there is considerable skepticism about its objectivity. One insider says it is "blatant in its praise" and another reports that Hornig actually had an original draft rewritten so as to contain a more liberal sprinkling of his own name, a practice which is said to be common among departing office chiefs.

Hornig himself seems pleased, though not completely satisfied, with his accomplishments. "I feel happy with this stage of my life," he told *Science* in a long interview shortly before leaving government. "I feel I've contributed to important things, gotten them moving when they were stalled, or changed their shape and direction."

Frederick Seitz, president of the National Academy of Sciences, credits Hornig with "a magnificent job under quite trying circumstances." He says Hornig was "tremendously knowledgeable," had an "all-pervasive" grasp of his job, and managed to keep the White House abreast of the scientific potentials of the country at a time when President Johnson was "on edge" because of hostility from elements of the scientific and academic communities.

However, many of the most experienced officials involved in federal science policy are somewhat less enthusiastic about Hornig's accomplishments. William D. Carey, assistant director of the Bureau of the Budget in the Johnson administration, calls the Hornig years "a mix of modest successes and disappointments." James A. Shannon, recently retired director of the National Institutes of Health, says Hornig "didn't do anything wrong—but he didn't do anything that you can identify as his contribution." And Ivan L. Bennett, Jr., Hornig's chief deputy, believes Hornig was largely "forgotten" by the White House and relegated to a position of "secondary importance."

The influence of any presidential adviser depends, in large measure, on the ease with which he can gain the presidential ear, and the degree to which he is trusted and respected by the President. On this count Hornig appears to have been hampered somewhat by a lack of rapport with LBJ, a problem which seems to have bedeviled many officials in Johnsonian Washington.

Not Picked by Johnson

Hornig, who had been serving as chairman of the chemistry department at Princeton University, was not really Johnson's choice for the science adviser's job. His appointment was announced by President John F. Kennedy shortly before Kennedy's assassination in November 1963, and, while the appointment was not binding on Johnson, the new President went ahead and put Hornig in office on 24 January 1964. "I was never on easy personal terms with the President," Hornig recalls. "He invited me down to the ranch a couple of times, but we were never on a chatty basis. There's always been a certain gap in attitude and approach between a Texas rancher and an Ivy League professor. I was on much easier terms with Kennedy, who asked me to serve in the first place."

Hornig's ability to influence Johnson seems to have been impeded by a "communications gap" that sprang from the particular personality of each man. Hornig, for his part, seems to have been consistently unable to communicate clearly and succinctly in the fashion demanded by a busy, preoccupied President. "Don talked too much, and he rambled," says one White House staffer. "And his memos were terribly long and complicated. The President couldn't read through a page or two and understand what Don wanted him to do, so he'd send it out to us and ask us what it was all about. Then we'd put a short cover memo on top of it and send it back in. The President got mad as hell at long memos that didn't make any sense."

This same staffer believes that Hornig damaged his credibility in the Pres-

ident's eyes by "grossly overstating" the importance of certain issues, such as the budget squeeze at the National Science Foundation, which was viewed with considerably more alarm in the scientific community than at the White House. Moreover, Hornig's memos, on occasion, provoked the famed Johnson temper. One memo that was interpreted as critical of James E. Webb, head of the space agency and a good friend of the President, is said to have brought a blistering response from Johnson.

President Johnson, for his part, seemed lukewarm, perhaps even hostile, to the academic science community—a circumstance which is said to have soured relations between Johnson and Hornig, though opinion is decidedly split on this point. White House staffers say the President was clearly not hostile to science in general. They say he was intensely interested in the space program and was eager to apply science to the problems of society. But most observers believe Johnson was no enthusiast for pure science, and some government science officials are convinced that the President ultimately became so angry over attacks on his Vietnam policies by academics that he "took it out" on the National Science Foundation and on Hornig himself as representatives of the academic community.

LBJ's Tirades

The halls of the White House and of the Executive Office Building occasionally buzzed with tales of how Johnson cursed the "draft-dodgers" who hide in graduate school while seeking advanced science degrees, of how Johnson said he was "damned if he'd do anything to help NSF," and of how Johnson "hit the roof" when George B. Kistiakowsky, who served as science adviser to former President Eisenhower, severed his long-standing advisory ties with the Defense Department in protest over Vietman. One ranking federal official says Kistiakowsky's defection was "a particularly malignant bone in the President's throat."

The tales are numerous enough and are told by reliable enough sources so that there seems little doubt that Johnson's rage was occasionally directed at the academic scientists. But observers differ in the significance they attach to these outbursts. Carey, the Budget Bureau's top science expert, says that Hornig had "a pretty rough time" because of Johnson's battles with the intellectuals. "When a President is having a lot of trouble with the intellectual community," says Carey, "it has a way of introducing a degree of corrosion into relations between the science adviser and the President." Bennett and many other officials agree. However, White House staffers, long accustomed to Johnson's tirades, say it would be a mistake to assume that a few rounds of cursing signified anything other than a passing Johnsonian passion.

Donald F. Hornig

The lack of a close personal relationship between Hornig and Johnson is important only insofar as it affected Hornig's ability to make his voice heard and to influence policy. Hornig told *Science* he had no trouble making his views known through personal discussions with the President, memorandums, reports, and occasional attendance at cabinet meetings. He estimated that he met with the President, on the average, about once a week. "In a formal sense our relations were always good," he said. "I've always had as much access to the President as I needed or wanted on important issues."

However, Bennett, Hornig's deputy, believes access to the President became increasingly more difficult as Johnson became preoccupied with Vietnam and other problems. "Hornig's prestige at the White House went down," Bennett said in an interview just after Hornig's departure. "When I first came here 2 years ago the President would call Hornig and talk to him personally. But it's been a deteriorating relationship. Hornig hasn't seen the President for 2 months. We send memos over and the answers are sent back through some squirt on the White House staff."

The extent to which the President paid attention to Hornig is difficult to assess. On the one hand, Johnson occasionally seemed to forget or ignore his science adviser. Thus, when Johnson held two high-level meetings in 1966 and 1967 to discuss basic research with directors of the National Institutes of Health, he failed to invite Hornig, despite the fact that Hornig was supposedly his chief adviser on fundamental research. On the other hand, the President was quick to turn to Hornig when technical crises arose, such as the power blackout in the northeast in 1965, or the earthquakes that occurred in Denver in recent years in the wake of underground pumping by an Army chemical warfare installation.

Moreover, there are indications that the President did, on some occasions, listen carefully to Hornig. Lawrence E. Levinson, a White House staffer, recalls that shortly after the assassination of Senator Robert F. Kennedy, the President asked him to contact Hornig with reference to a conversation the two men had had, more than a year earlier, concerning scientific efforts to detect concealed weapons on people. Levinson, the only one of six presidential aides interviewed who was willing to let his name be used, says Hornig had trouble remembering the conversation, but it had obviously made an impression on Johnson.

Indirect Influence

To some extent, Hornig compensated for any lack of direct influence over the President by operating through other officials who were closer to Johnson. "Don's own views were often not terribly persuasive with the President," says one White House staffer, "but if Don was backed up by Joe Califano (a key aide on domestic policy) or by Charlie Zwick or Charlie Schultz (directors of the Budget Bureau), it was a different ball game."

Sources at the White House and at the Budget Bureau, for example, agree that it was primarily Zwick who persuaded the President to boost NSF's fiscal 1969 expenditure ceiling and fiscal 1970 budget request. Some observers suggest this indicates Hornig was a failure in his own persuasive ef-

forts. But others argue that Hornig was a rousing success, for he presumably played a major role in convincing Zwick that NSF was in trouble and that he (Zwick) must make that clear to the President.

The fact that Hornig was reputedly not as close to the White House as some previous science advisers occasionally leads people to conclude that he was less effective than his predecessors. But many observers caution that this is not necessarily so. Even some of those who criticize Hornig believe he may have done as good a job as some or all of his predecessors. The comparison is difficult to make. There is a paucity of published material that would shed light on the degree to which the previous three advisers (James R. Killian, Jr., Kistiakowsky, and Jerome B. Wiesner) succeeded or failed. Moreover, the various advisers were coping with different problems and different presidents, so each must be judged in his own context.

What did Hornig accomplish during his years in office? Not much, if one looks for a single grand monument that will claim attention in the pages of history as "Hornig's achievement." But quite a lot, if one looks at the cumulative impact Hornig had on scores of government programs.

There is much to praise in the Hornig record, and nothing seems more admirable than his loyalty and selflessness in sticking to an increasingly thankless job for 5 long years (Wiesner served 3 years; Killian and Kistiakowsky roughly a year and a half apiece). In one sense this was no hardship, for Hornig is said to have relished the perquisites of the job—the limousine, the opportunity to testify in Congress, the embassy receptions abroad, the chance to rub shoulders with the great and the powerful. "He enjoyed things that put him in the limelight," comments one disgruntled staffer.

But it is a little known fact that

HEW Urges Annual "Social Report"

The Department of Health, Education, and Welfare (HEW) issued a report last week which notes that the government lacks a "comprehensive set of statistics reflecting social progress" and calls for the establishment of "social indicators" to remedy this lack. Just before he left office, HEW Secretary Wilbur J. Cohen said that "an accurate assessment of our social well-being is essential" if we are to "make informed decisions about priorities and directions in this Nation's social programs." Social indicators, the report argues, would provide this needed assessment.

*Toward a Social Report** grew out of some recommendations by the Panel on Social Indicators, a group of 43 social scientists convened by HEW Secretary John W. Gardner in 1966. Their contributions were a first approximation to the present report, which was prepared under the direction of Mancur Olson, Deputy Assistant Secretary for Social Indicators.

As its title indicates, the report is intended to be, not a prototype for future reports, but rather an invitation to criticism and suggestion, leading, perhaps, to an annual social evaluation similar to the annual economic evaluation made by the Council of Economic Advisers in its *Economic Indicators*. Social indicators, the HEW report argues, would provide an objective evaluation of existing social problems, thus making possible informed judgments about national priorities, and these indicators would serve as valuable measures of the efficacy of public programs.

"We have measures of death and illness, but no measures of physical vigor or mental health," the report says. "We have measures of the level and distribution of income, but no measures of the satisfaction that income brings. We have measures of air and water pollution, but no way to tell whether our environment is, on balance, becoming uglier or more beautiful. We have some clues about the test performance of children, but no information about their creativity or attitude toward intellectual endeavor. We have often spoken of the condition of Negro Americans, but have not had the data needed to report on Hispanic Americans, American Indians, or any other ethnic minorities."

The report recognizes seven categories of social concern in which indicators might be developed: health and illness; social mobility; the physical environment; income and poverty; public order and safety; learning, science, and art; and participation and alienation. Most of the 200 pages are a review of what is known of the nation's condition in these seven areas, and of what ought to be known as a basis for public policy-making.

The social indicators called for in *Toward a Social Report* are to be numerical, rather than qualitative, and it is the reduction of social well-being to statistical form that is the heart of the problem. The report suggests two such social indicators: the expectancy of healthy life (years free of disability requiring institutional or permanent bed care) and the extent of "criminality." The report invites suggestions for other indicators.

The authors of the report anticipate that a comprehensive group of social indicators could be developed in about 2 years. They hope that it will be possible in the more distant future to determine the effect of public policy in the changes that occur in social indicators. For example, if expectancy of healthy life increases, this could be due to changes in private expenditures for medical care or to changes in living standards, quality of nutrition, or exposure to contagious diseases, as well as to changes in government programs. If the government programs are to be evaluated, their contribution to the increase in life expectancy would have to be distinguished from the contributions of the other factors.

Toward a Social Report is indicative of the increasing national interest in the social sciences and in improvement of the quality of life. If statistical indicators seem to lack humanity, they may at least provide better analysis than the seat-of-the-pants methods used so far.

—PETER THOMPSON

**Toward a Social Report* will be available by 15 February from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Hornig wanted to leave government some time ago to accept a private job offer. He only stayed on because he feared that the scientific community might suffer greatly if he departed. Several well-placed sources report that, when soundings were taken to determine whom the President would name to replace Hornig, it seemed likely that Johnson would either appoint a poorly qualified crony, or might not appoint another science adviser at all. As a result, according to well-informed sources, Hornig decided to remain in office until the end of the administration. It was not until a month ago that Hornig, now 48 years old, finally left government and accepted an executive position with the Eastman Kodak Company, of Rochester, N.Y.

One of the most significant developments during Hornig's tenure was an expansion and diversification of the White House science advisory apparatus. Under Hornig's leadership, the Office of Science and Technology (OST) doubled its budget, from $900,000 to $1.8 million, and increased the size of its full-time professional staff, from 15 to 21. The President's Science Advisory Committee (PSAC), a group of scientists who advise the government on a part-time basis, was diversified to include representatives from new disciplines, professional backgrounds, and geographic areas, in line with the President's desires. And the whole science advisory apparatus continued to expand its interests and responsibilities. Whereas the first three science advisers were primarily concerned with matters of national security or arms control (though Wiesner branched out into domestic areas), Hornig, a loyal servant of the Great Society, focused attention on such civilian problems as environmental pollution, energy policy, housing, transportation, food supplies, and law enforcement. Hornig estimates that the total time and effort devoted to national security matters by OST staffers and PSAC panels has not changed much over the years, but the addition of new civilian responsibilities has produced a "growth away from defense problems."

Foreign Affairs Role

Hornig also opened up a new international role for the science adviser, a development in which he expresses "a great deal of satisfaction." At the request of President Johnson, he undertook missions to Korea, Pakistan, India, Taiwan, Libya, Australia, South America, and various European nations. The missions are said to have been partly substantive, in that Hornig spurred technological developments in several nations, and partly ceremonial. "It got to be a joke around here," says one government official, "that when critical things were happening, Hornig was off in some other country, attending Mickey-Mouse tea ceremonies."

Not everyone believes the expanding size and role of the science advisory apparatus has been a good thing. Some observers fear that the President's Science Advisory Committee and Office of Science and Technology are losing effectiveness as their interests become more diffuse and their resources are stretched thin. Others suspect that bureaucratic rigidity is setting in, and there is some suspicion of empire-building.

Hornig and his staff were involved in so many issues that it is difficult to convey a complete picture of their activities. White House staffers say Hornig played a major role on the task forces that shaped the Johnson administration's legislative programs in areas relating to science and technology. And Budget Bureau officials say Hornig's office helped shape hundreds of budget decisions. Bennett, Hornig's deputy, believes the office "played a major part in guiding the thinking of government. You can't say we did it single-handedly, but there were dozens and dozens of issues where we had our input. Actually, more was accomplished by modifying than by initiating. A lot of it was putting out small fires before they got big."

To cite just a few examples, Hornig's operation is given major credit for sparking federal research programs in housing and transportation; for developing a new law designed to encourage medical schools to expand their production of doctors; for shaping the administration's bill (introduced but not yet passed) to ensure the reliability of

Afro-American Studies Programs

Faculty committee reports at both Harvard University and the University of California at Berkeley recommend the establishment of full degree-granting programs in American Negro studies at both institutions. At Berkeley, the Executive Committee of the College of Letters and Sciences on 17 January approved, in theory, the establishment of an Afro-American studies program leading to a B.A. degree. The administration has indicated that it will consider elevating such a program to a department level within the college of arts and sciences.

At Harvard, a faculty committee, chaired by Henry Rosovsky, professor of economics, recommended on 21 January that Harvard establish a full degree program in American Negro studies, to be integrated with other disciplines, but to be on a par with them. In a 50-page report, the eight-member committee concludes that the absence of satisfactory Afro-American courses is "the single most potent source of black students' discontent at Harvard." The committee believes that a Negro studies program constitutes an intellectually valid academic discipline at Harvard; it urges the university to offer more scholarships for Blacks, to appoint specialists in Negro studies, and to increase the number of blacks on Harvard's teaching, research, and administrative staffs. The report also calls for a vigorous recruitment of Black graduate students and the establishment of 15 to 20 fellowships to be given annually. (The committee claims that Harvard has graduated an estimated eight Black Ph.D.'s in the last 10 years.) In addition, the report also recommended that Harvard reevaluate its investment policies and community relations with an aim to improving the status and economic opportunities of Negroes. The report's academic recommendations, which have already been approved by Harvard's Committee on Educational Policy, will be considered by the full faculty on 11 February. These recommendations are not binding, but university officials indicate that the administration is prepared to act on them.—MARTI MUELLER

electric power systems; for contributing to new pollution legislation; and for conducting a landmark world food study. Hornig and his staff are also praised for defusing the politically explosive issue of the "technological gap"; and for inducing President Johnson to take a major stand, in his 1965 State of the Union message, in support of population control. "Any one thing by itself probably seems insignificant," says David Z. Robinson, vice president for academic affairs at New York University, and a former OST staffer. "But when you add it all up the cumulative weight is impressive."

Criticisms of Hornig

The most significant criticisms of Hornig generally involve things he allegedly failed to do rather than things he did. Thus several experienced government hands, including Carey and Shannon, fault Hornig for not developing plans for science and technology in the post-Vietnam period. Other observers complain that Hornig was not very creative or innovative. They note that, in an administration which prided itself on new domestic policies, it is difficult to think of any dramatic new departures in federal science programs. Moreover, those who feel technology had a role to play in Vietnam criticize the science advisory apparatus for failing to contribute much to the war, which was, after all, the major problem confronting the Johnson administration. Other observers complain that Hornig did little to cultivate the power centers of a Congress that became openly hostile to R & D funding; and that Hornig was a poor administrator who tried to do too much himself and failed to use his staff as effectively as he might have.

As was the case with his White House captain, Hornig's albatross was the budget problem caused by the Vietnam War. His greatest failure, in the eyes of much of the scientific community, was his inability to protect researchers from the impact of cutbacks in domestic spending. But if this was a failure, it was a failure in only a limited sense. Hornig acknowledges that he was "not satisfied" with the level of R & D funding, but he feels that support of science "didn't fare badly" in comparison with other federal programs. Many observers assert that Hornig did an admirable job in minimizing the impact of cutbacks which could not be avoided. They note that the science adviser is not a lobbyist for the scientific community, and they praise Hornig for his frankness in telling his money-hungry colleagues where to get off. In a speech last May, for example, Hornig criticized mathematicians who "seriously propose" that the public should support creative work "on the beaches of Rio de Janeiro or in the Aegean Islands." The public which pays the bill, Hornig said, "is not in tune with such colossal intellectual conceit." To put it mildly, this outspoken comment offended many mathematicians.

The experiences and tribulations of the past 5 years have led Hornig to conclude that the science advisory apparatus needs strengthening. Hornig has publicly suggested that a cabinet-level Department of Science be created, and that a Council of Scientific and Technical Advisors (analogous to the influential Council of Economic Advisors) be established and made responsible for submitting an annual report on the state of science and technology. Several other prominent statesmen of science, including Wiesner, have also suggested major structural changes. At this point it is not clear what changes, if any, the Nixon administration will make. But even without any structural changes, if Nixon is able to end the war, and if federal science budgets start to climb again, life may be a good deal easier for the new science adviser, Lee A. DuBridge, than it was for Hornig.

—PHILIP M. BOFFEY

A Private University: Academics Seek To Set Up Britain's First

London. While American academics hunt new routes to the federal treasury, a group of their British counterparts, joined by several Americans teaching here, are seeking to get away from government money and set up Britain's first privately financed university.

The British effort, endorsed in a declaration issued by 46 academics, mainly on economics faculties throughout the United Kingdom, has touched off one of this country's characteristically acerbic and often cranky controversies, with the left-wing *New Statesman* asserting that "the authors of this document are suffering from irrational frustration to such an extent that they are prepared to say anything." That journal's interest may possibly have been aroused by the fact that the declaration came out under the imprint of the Institute of Economic Affairs, a rightist research organization that feels the marketplace, rather than what passes here for socialism, is the correct remedy for Britain's assorted ailments. In any case, since Britain currently excels in contention-cum-inactivity, the odds are that American academe will get a blank check on Washington long before the 46 realize their goal. (The number, in fact, has already been lowered by at least one—a senior academic who dropped out with the privately offered explanation that "I discovered that the others want something that I don't want.")

Just what it is that the others want is a good way from being clear, for the details so far are somewhat sketchy. But what is clear is that, by and large, British academics are ill-tempered over the treatment that higher education is being accorded by their financially straitened government, and also by the government's growing demands that the universities bend themselves more toward doing something for their country. Last month, for example, the chief executive of Liverpool University, Vice Chancellor W. H. Barnes, indignantly resigned after issuance of a government report suggesting that student opinion might be of some value in awarding merit raises for teaching. "I cannot," he said, "in all conscience accept a situation in which the traditions and independence of British university life are slowly but inexorably being