

10. Report to the President-elect of the ad hoc Committee on Space, released 12 Jan. 1961, particularly p. 14.
11. My interview with Dryden in Washington, D.C., 23 Mar. 1963.
12. *Man's Role in the National Space Program* (National Academy of Sciences Space Sciences Board, Washington, D.C., 31 Mar. 1961).
13. *Hearings before the U.S. House Committee on Sciences and Astronautics*, 87th Congress, 1st Session, regarding H.R. 6874, p. 375.

14. My interview with Welsh in Washington, D.C., 14 Apr. 1964.
15. *Report of Committee on Science and Astronautics*, No. 391 to accompany H.R. 6874, 87th Congress, 1st Session (Government Printing Office, Washington, D.C.), p. 89.
16. *Congressional Record*, 28 June 1961, p. 10803.
17. While military experts saw some potential benefit from manned space flight capability (for inspection and repair of satellites, and so forth), most saw no military application

- for extended space flight to the moon and planets.
18. R. C. Snyder, in *Approaches to the Study of Politics*, R. Young, Ed. (Northwestern Univ. Press, Evanston, Ill., 1958).
19. A. Weinberg, "Scientific choice, basic science and applied missions" in *Basic Research and National Goals, 1967, A Report to the Committee on Science and Astronautics of the U.S. House of Representatives by the National Academy of Sciences* (Washington, D.C., March 1965), p. 279.

NEWS AND COMMENT

Senate: New Leaders For Health and Education

Personalities shape political action and the work of two Democratic senators—Lister Hill of Alabama and Wayne Morse of Oregon—was important in increasing federal support for health and education during recent years.

When Hill and Morse left the Senate last month—Hill through retirement, Morse because of defeat at the polls—people in the fields of health, education, and science understandably wondered what their successors would be like. Hill exerted his influence in these areas primarily through his chairmanship of a major Senate committee. Although

this group is called the Senate Labor and Public Welfare Committee, much of its work lies in supervising health, education, and, now, the National Science Foundation. Hill took a special interest in health matters and was regarded as the "patron saint" of the nation's medical research. Morse served as a member of the committee and as chairman of one of its important constituent parts—the education subcommittee.

Hill's successor as committee chairman is a fighting 65-year-old Texas liberal, Ralph Yarborough. Morse's successor as chairman of the education

subcommittee is Rhode Island's Claiborne Pell, 50, a Newport patrician with a liberal voting history. Those who favor generous federal support to health, education, and science were relieved that men with the views and records of Yarborough and Pell assumed these important posts. It remains to be seen, however, whether Yarborough and Pell have all the personal qualities that made Hill and Morse so effective.

Yarborough, who has been in the Senate for 12 years, assumed his first Senate committee chairmanship when he took over Labor and Public Welfare last month. Comparisons with Hill are inevitable. One long-term committee observer describes chairman Hill as "a foxy old grampa, the smoothest ever." Another observer termed Hill "a fine old Southern gentleman, who was not excitable and did not rattle around; Yarborough on the other hand is a different kind of guy, a partisan who gets into tiffs with his colleagues." (Senate veterans still remember Yarborough's not-so-friendly wrestling match a few years ago with Senator Strom Thurmond of South Carolina.)

Most of those who have watched Yarborough point out the difficulty of being a successful liberal politician representing Texas. "If you're a Texas liberal, you've got to be a little paranoid," one observer comments; "you expect a knife in your back at any moment and have a tendency to look for machinations when there are none."

Yarborough does, nonetheless, have many positive qualities. He is likeable, articulate, quick, and a diligent, though sometimes unfocused, worker. Perhaps what is most striking about him is his ability to speak with a moral passion which is rare among politicians. When this reporter interviewed Yarborough recently, the Senator was looking through an article in *Science* which mentioned the cutbacks in federal funds available to poor college students. "Folly!" Yarborough exploded. "This cutting back on education, this tokenism on education is an economic folly! This

Senate Labor and Public Welfare Committee Members

The members are listed in order of seniority on the committee. Seniority determines access to the coveted subcommittee and committee chairmanships. Committee members on the health subcommittee are indicated by (H); those on the education subcommittee by (E). Senators who entered the Senate and the Labor and Public Welfare Committee this year are indicated by an asterisk.

Democrats

Ralph Yarborough, Texas (H, E)
Jennings Randolph, W.Va. (E)
Harrison A. Williams, Jr., N.J. (H, E)
Claiborne Pell, R.I. (E)
Edward M. Kennedy, Mass. (H, E)
Gaylord Nelson, Wis. (H)
Walter F. Mondale, Minn. (E)
*Thomas F. Eagleton, Mo. (E)
*Alan Cranston, Calif. (H)
*Harold E. Hughes, Iowa (H)

Republicans

Jacob K. Javits, N.Y. (H, E)
Winston L. Prouty, Vt. (H, E)
Peter H. Dominick, Colo. (H, E)
George Murphy, Calif. (H, E)
*Richard S. Schweiker, Pa. (E)
*Henry Bellmon, Okla.
*William B. Saxbe, Ohio (H)

terrific cutback is robbing this generation." Yarborough lambasted the Vietnam war as the cause of these cutbacks and exclaimed, "The quicker the country settles this war, the better off it will be in every way—morally, spiritually, intellectually."

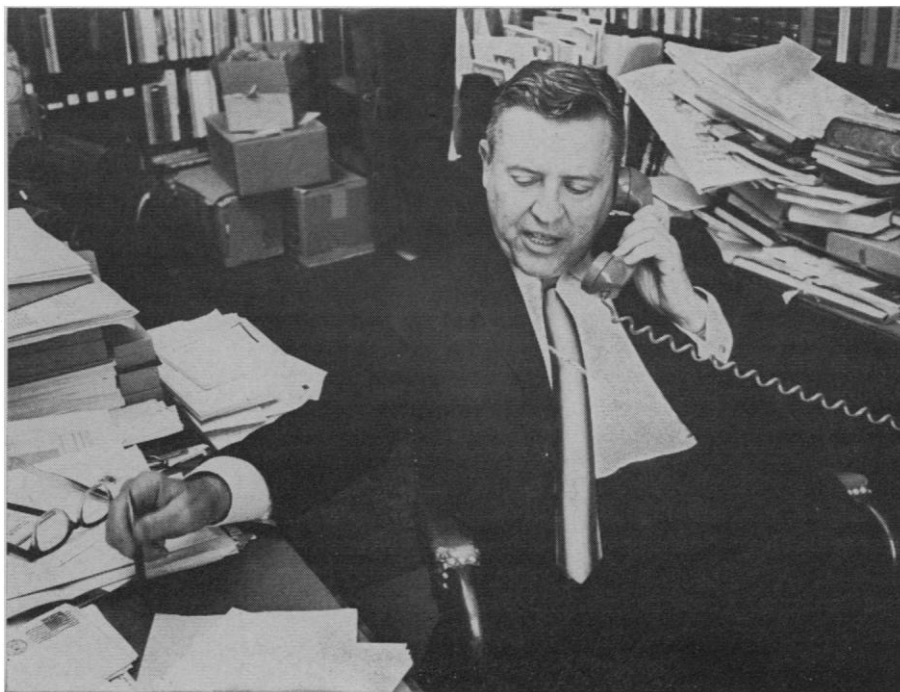
Yarborough has been a long-time supporter of education measures to facilitate learning for Spanish-speaking Americans. Never one to mince words, Yarborough spoke last year for funding for his Bilingual Education Act as follows: "A few million dollars spent to educate the three million children from non-English speaking families is far better than the millions for napalm. I think education is more important than the cremation of the living."

Of the major permanent subcommittees of the Senate Labor and Public Welfare Committee, those on health and education seem to be somewhat more sought after than those on labor or on employment, manpower, and poverty. Perhaps because Hill kept the health subcommittee chairmanship to himself and because of the popularity of the health area, there was a lot of jockeying in the past few months over who would assume this subcommittee chairmanship. Both Senators Pell and Edward M. Kennedy (D-Mass.) wanted the health chairmanship, but were thwarted when Yarborough exerted his seniority and claimed the position.

Yarborough had been under some pressure from Texas educators to assume the education subcommittee chairmanship. When asked why he chose health instead, Yarborough replied, "Because there's more to be done in the health field. Our infant mortality rate is a disgrace to this country. We're short, short, short, when it comes to health. We have to be activists; we're not getting enough accomplished in health."

DeBakey Praises Yarborough

Noted heart surgeon Michael E. DeBakey, president of the Baylor College of Medicine in Houston, has been in contact with Yarborough on a number of health matters. In a telephone interview, DeBakey commented that Yarborough had always been a supporter of medical facilities. "I'm a great admirer of Senator Yarborough," DeBakey said; "he's a compassionate man, a very great Senator. I'm delighted he's assumed the chairmanship. He is the type of man who recognizes the importance of health and education."



Senator Ralph Yarborough (D-Texas) has replaced Lister Hill as chairman of the Labor and Public Welfare Committee. The committee has authority in the Senate over health, education, and the National Science Foundation, among other areas. "The greatest thing this Government is doing is the basic research that the Federal government is supporting. That is the thing that has put us ahead in the world, undoubtedly," Yarborough said at Lee A. DuBridge's confirmation hearing before Yarborough's committee on 6 February.

When Lee A. DuBridge, President Nixon's science adviser, appeared before the Senate Labor and Public Welfare Committee last week, Yarborough complained that he had recently visited the Texas Medical Research Center in Houston and that 35 percent of the facilities had been closed because of lack of research funds. He urged DuBridge to use his influence to increase funding in the medical area.

Most recently, Yarborough has served as chairman of the labor subcommittee but emphasizes that, through the years, he has put in most of his effort on the health and education subcommittees. Yarborough was the sponsor of the Cold War G.I. Bill and takes great pride in his co-sponsorship of the National Defense Education Act and in serving on every education conference with the House of Representatives during the past 10 years.

While acknowledging Yarborough's many good qualities, some Senate observers question whether Yarborough can swing the weight in the Senate of either Hill or Morse. Both men had served in the Senate for many more years than has Yarborough. As chairman, Hill had a great deal of rapport with Democratic liberals, Republicans, and with his more conservative Demo-

cratic colleagues from the South.

A more serious question about whether Yarborough can be as effective as Hill as chairman lies in the differing nature of their constituencies. Texas is a much larger state than Hill's Alabama, and Yarborough has to scramble around the Lone Star State in an attempt to win reelection in 1970. Yarborough is expected to have severe challenges both from the Republicans and from within the conservative section of his own party. Yarborough has always been very receptive to constituent demands on his time and energies, and his forthcoming reelection bid will make him even more receptive. Some observers question whether he will be able to devote the time necessary to be a truly effective chairman, especially during the next two hectic preelection years.

The grief in the health field over Hill's retirement was matched in the academic groves and in Washington by the defeat of Wayne Morse—"the Tiger of the Senate." "The defeat of Wayne Morse was a great loss to the committee," comments Senator Jacob K. Javits (N.Y.), the committee's senior Republican. Another Republican regrettably reminisces that Morse was "the best subcommittee chairman I've ever seen."

NEWS IN BRIEF

● **LAIRD HALTS ABM:** Defense Secretary Melvin R. Laird has directed the Army to halt temporarily plans for ABM land acquisition and construction. Laird's order, which calls for a 1-month review of all major military weapons systems, will give the Nixon Administration time to make its views on the controversial defensive missile system known. Last week, the House Armed Services Committee also moved to stop action temporarily on ABM by announcing that it would not act on the Army's request for site acquisitions in the Chicago and Seattle areas until hearings or investigations have been held. The Senate Armed Services Committee has also indicated that it may hold hearings this spring to allow an opportunity for ABM opponents, including scientists, to express their views.

● **FCC SEEKS BAN ON CIGARETTE ADS:** The Federal Communications Commission (FCC) has proposed, for public health reasons, to prevent broadcasters from carrying cigarette advertisements on the air. The FCC's action was an unprecedented move toward an eventual ban on radio and television cigarette advertising, on which tobacco companies spend about \$240 million per year. The Commission's action was generated primarily from recent federal agency reports, which have said that cigarette smoking causes deaths and disabilities. In June a 4-year federal law limiting state and federal action on radio and television advertising expires.

● **HARVARD REMOVES ROTC CREDIT:** The Harvard faculty voted 207 to 145 to withdraw the academic standing of its Reserve Officer Training Corps (ROTC) program, one of the oldest in the nation. The faculty recommendation would relegate ROTC to an extracurricular activity and terminate faculty appointments.

● **PENTAGON DROPS DEFOLIANT CONTRACT:** The Department of Defense has canceled a \$14-million contract to reactivate an old chemical plant near St. Louis for herbicides production. Defense sources say that the plant, being renovated to produce 8 million gallons of defoliant yearly, was cut because of "reduced estimates for defoliants," and because civilian industry

is expanding to meet the needs. Officials say, however, that the Pentagon's present program of crop and jungle defoliation, which has drawn criticism from some scientists, will continue. In fiscal 1969, the Pentagon allocated \$70 million for herbicides.

● **MORE COLLEGE GRADUATES DRAFTED:** The percentage of draftees who are college graduates with at least one degree has risen substantially. The Department of Defense told *Science* that in June of last year 4.5 percent, or 1100 of the 24,600 draftees were college graduates. By October about 20.4 percent, or 2800 of 13,700 draftees were college graduates. The Scientific Manpower Commission attributes the increase to the change in graduate deferment regulations, which has had the effect of making students with one degree prime targets for the draft; it is also due to the increased number of students who have exhausted their rights to appeals and postponements. The Defense Department has released a 79-page handbook, *Pathways to Military Service for College Men and Women*, which describes opportunities in the military service for college-educated persons. Reference copies are available at university placement offices.

● **WASHINGTON MONTHLY:** A new political magazine that will take a critical look at government operations has been established in Washington, D.C., by former Peace Corps members. *The Washington Monthly*, which will explore the problems of public institutions, including universities and colleges, private foundations, and government agencies, is edited by Charles Peters, published by Joseph Crowley, and has an editorial advisory board headed by Richard H. Rovere. It is financed by private contributors, who include West Virginia Secretary of State John D. Rockefeller IV. The monthly, which costs \$10 a year or \$1 per single issue, may be obtained from The Washington Monthly Company, 1150 Connecticut Avenue, NW, Washington, D.C.

● **YALE JOINS RESEARCH HALT:** Yale University scientists have indicated they will join M.I.T. and Cornell scientists in a 1-day research stoppage on 4 March to examine government priorities in scientific research.

Through his years as chairman of the education subcommittee, Morse, who was once dean of the University of Oregon law school, added greatly to his expertise on education matters. Morse's replacement as chairman of the education subcommittee, Claiborne Pell, is not an education expert, and has not served on the education subcommittee prior to this year. While Morse is regarded as a sort of genius, even by those who dislike his politics and egocentricity, one Senate observer describes Pell as "a very likeable man but not as much of a heavyweight mentally as Morse." Pell tends to be cautious in his public statements; one friend describes him as "not terribly decisive and something of a hand-wringer."

Pell Is Persistent

Although Pell may not seem as smart as some Senators, he has more of a legislative record than many of his more brilliant colleagues. Perhaps Pell's main political attribute is his persistence—"he keeps at something like a Chinese water torture," one associate commented. "Pell has managed some spectacular things for an unspectacular guy," another says. Although a Senator for only 8 years, he has been instrumental in the passage of the High Speed Ground Transportation Act, the Sea Grant College Act (*Science*, 21 June 1968), and the establishment of the National Foundation on the Arts and Humanities. Pell has been especially interested in developing high-speed rail transportation in the Boston to Washington "Megalopolis" and in improving the nation's capacity to utilize and explore the resources of the oceans. With uncommon success, he has persuaded the Senate Foreign Relations Committee, on which he also serves, to create a subcommittee on "Ocean-Space" under his chairmanship. He also has taken the unusual step of presenting his own international treaty on the use of the seabed for the consideration of the Congress and the Executive branch.

One of the few educational programs with which Pell is identified is one in which high school graduates would be paid up to \$1000 annually toward their fees and other expenses of their first 2 years of college or other educational training. Although Pell will probably do a good deal of thinking in forthcoming months about his educational philosophy, he seems to lean more toward providing aid to individual students than to institutional

grants, a view that seems to be widely shared on the Senate Labor and Public Welfare Committee. Pell's education subcommittee will have ample work in trying to bring order out of all the "Great Society" education legislation passed during the Johnson Administration, committee observers believe.

In the health area, the Congress will have to decide what it wishes to do about the Hill-Burton Act which provides money for hospital construction. There seems to be little sentiment on the committee for greatly increasing the money spent on medical research, instead the emphasis seems to be on improving the quality and amount of research done with existing funding levels.

Kennedy in Science

As of this writing, the committee has made no final decision about what to do about science and its newly acquired responsibility for annual authorization of the National Science Foundation (NSF). In past years, Senator Edward M. Kennedy chaired an ad hoc subcommittee on science for the committee. Kennedy expects that the NSF authorization will now come under his auspices. There has been some talk in the committee, however, of giving authority over NSF either to the whole committee, or to the health subcommittee, or to the education subcommittee. Kennedy can be expected to do battle over such an attempt to deprive his group of jurisdiction over NSF.

The scientific, medical, and educational communities have few better and more effective friends in high office than Kennedy. He combines his great political potential with hard work, a willingness to listen to expert advice, and his own influence as Democratic whip. In the past, he has, along with Senator Fred Harris (D-Okla.), helped to oppose those who wanted to cut the NSF budget. Kennedy has, of course, many leading educational and medical institutions in his own state and seems to keep in touch with their problems. Whatever Kennedy's own record of championing scientific research, there is a feeling on the committee that Congress must subject NSF to much closer scrutiny than it has in the past.

Hill, during his leadership years, was able to exert special strength not only through his committee chairmanship but also because he was chairman of the appropriations subcommittee which handled health, education, and

Lee DuBridge Passes Senate Test

Lee A. DuBridge, President Nixon's science adviser, passed his first major congressional test last week with colors flying. Congressmen did, however, pass along the word that while some scientists may aspire to the stars, congressmen and their constituents tend to be more interested in what science can do to improve their lives on earth.

The occasion for this exchange was DuBridge's confirmation hearing on 6 February for the position of director of the Office of Science and Technology (OST) before the Senate Labor and Public Welfare Committee. The committee, and then the whole Senate, quickly approved DuBridge's nomination.

A theme for the relatively brief session was set by one of the committee's senior Democrats, Jennings Randolph (W.Va.), who noted that although the United States could orbit the moon, it could not perfect an automobile panel clock which would keep time. Randolph asked DuBridge where he would place his energies as OST director. DuBridge mentioned three areas in his response: (i) the analysis of weapons systems; (ii) the environmental area and the effect of technology and pollution on the environment—DuBridge termed environmental problems "an ever more important aspect" of OST's work; and (iii) the utilization of science and technology by numerous government departments. Later, committee chairman Ralph Yarborough (D-Texas) told DuBridge that he was "glad" he was concerned about pollution.

One of the committee's new members, Henry Bellmon (R-Okla.), asked DuBridge whether his office planned to pay more attention to social problems. DuBridge replied that he did plan to concern himself with these topics and that he hoped to increase the number of social scientists on the President's Science Advisory Committee from one to two, but that OST couldn't cover the whole range of social problems. At another point, DuBridge said that he thought that some federal agencies, such as the Department of Housing and Urban Development (HUD) and the Department of Transportation, did not have adequate research funds and that he hoped they would be given increased support.

Perhaps the most substantive challenge of federal policy was offered by Yarborough when he cited figures indicating that about five-sixths of all federal R&D money was spent by the Department of Defense, the National Aeronautics and Space Administration, and the Atomic Energy Commission. Yarborough asked DuBridge to have his staff determine whether "an inordinate proportion" of R&D money was not going into these areas, instead of into agencies like NIH. DuBridge replied that President Nixon was highly interested in the research effort in other agencies such as the National Science Foundation. He also said that he was sorry that allocations for basic research were declining in agencies such as the DOD, NASA, and the AEC because such agencies "will profit by good relations with universities."

But the hearing did not dwell on substance for lengthy periods; much of the time was taken in presenting verbal bouquets to DuBridge. Peter Dominick (R-Colo.) called the former Caltech president "as qualified for this job as anybody we could find in the country." One senator who is not a member of the committee, Charles Percy (R-Ill.), who serves as a Caltech trustee, came to the hearing to deliver his "personal testimony" about DuBridge, saying that he was "one of the most respected if not the most respected over-all balanced scientist in the United States today."

DuBridge looked a little nervous when he went before the Senate committee but as the hearing progressed, it was apparent that he had nothing to be nervous about. If DuBridge can translate the respect in which he is held in Congress and elsewhere into more extensive federal support for worthwhile programs, scientists will be able to leave the doldrums which have affected their community during the final years of the Johnson Administration.—BRYCE NELSON

labor matters. Thus, Hill played the key Senate role in both the authorization and the appropriations process, and used his position to work for larger appropriations for NIH than the Executive requested. Yarborough is on the Senate Appropriations Committee, but he is a very junior member, and cannot attain Hill's subcommittee chairmanship. As of this writing, the chairmanship and membership of that appropriations subcommittee have not been assigned but Yarborough is trying to attain a seat on the subcommittee. Warren G. Magnuson (D-Wash.) apparently wants the chairmanship of the subcommittee, a prospect viewed with some pleasure by Washington observers in the health, education, and science areas. Magnuson is certainly not the most hard-driving member of Congress (he has reportedly been on extended vacation from his duties since he won his fifth Senate term last November). Nonetheless, he had an early interest in health research, oceanography, and the NSF, and has a generous attitude toward the expenditure of federal funds for such purposes.

The Senate Labor and Public Welfare Committee assumes special im-

portance in a period when leadership in the House of Representatives, especially on health matters, leaves much to be desired. Hill used to work in tandem with the late John E. Fogarty (D-R.I.), the chairman of the HEW subcommittee of the House Appropriations Committee. The House HEW appropriations subcommittee recently was further depleted when the skillful ranking Republican, Rep. Melvin Laird, became Secretary of Defense. Particularly in the health field, many observers expect the Senate to provide most of the initiative displayed by Congress in the next couple of years.

The strength of the Senate Labor and Public Welfare Committee is enhanced by the fact that, during a Republican administration, the committee's four senior Republican members have retained their membership on the committee. Javits, the most senior Republican, said in an interview with *Science*, that he felt that the Republicans on the committee "will be more authoritative and carry some additional weight" in this Administration. Javits also said that, during the Nixon Administration, "I see a major thrust in the field of science and technology, in using re-

search ability to carry off the general policy of problem-solving." In the past the Republicans on the committee have worked with a good deal of cooperation, and, under the leadership of Javits and Winston Prouty (Vt.), have tended to act in a more liberal manner than many Republicans.

The Senate Labor and Public Welfare Committee is hardly a microcosm of the Senate as a whole. Most of its members represent urbanized, liberal states; none come from the more conservative South. Most of the six new members of the committee this year are expected to be liberal in their voting; the three Democrats—Harold E. Hughes, ex-governor of Iowa, Alan Cranston, ex-comptroller of California, and Thomas F. Eagleton, former lieutenant governor of Missouri, are considered to be sympathetic to education, welfare, and health programs.

In a sense, Senators Lister Hill and Wayne Morse cannot be replaced. Nonetheless, with a passionate new chairman and several talented members, the Senate Labor and Public Welfare Committee will make its voice heard during the 91st Congress.

—BRYCE NELSON

Un-Fair Harvard?: Faculty Report Surveys University-City Relations

In a simpler era, a university's conduct was above reproach. The university did good by adding to the growth of knowledge and the pool of "educated men." Its impact on its surroundings, its treatment of employees, the investment of its endowment funds, and the activities of its faculty members remained internal affairs—as long as the university stayed within the bounds of legality. Criticism, if sometimes heard, was customarily ignored.

That these days have passed forever is the clearest message from a Harvard faculty committee which last month released a 94-page report entitled "The University and the City." Harvard president Nathan M. Pusey appointed the committee last May, within a month of the assassination of Martin Luther King and two weeks after the beginning of the Columbia crisis. The assassina-

tion aggravated white racial guilt feelings at Harvard; the Columbia crisis, stemming from controversy over a college gymnasium to be built on the edge of Harlem, demonstrated the volatility of local issues. To many students (and numerous other people), the university no longer appeared so benign. Wasn't it acting harmfully—even evilly—on its immediate surroundings? Hadn't it failed to devote enough energy and money to solving the nation's social ills?

In a broad sense, the committee did defend the past by emphatically reaffirming the university's traditional purpose. "The university—any university—has a special competence," the committee declared. "That competence is *not* to serve as a government, or a consulting firm, or a polity, or a pressure group, or a family, or a secularized

church; it is to serve as a center of learning and free inquiry." This view automatically precluded any drastic policy departures; the committee specifically ruled out, for example, a proposal by a Boston Negro group that Harvard devote a substantial portion of its endowment to local problems.

Continuity was maintained in another way. The committee repeatedly emphasized that the fundamental fact of life of Harvard's administrative structure is decentralization. The different faculties (Law, Medicine, Business, Education, Arts and Sciences, and so on) enjoy great educational and financial autonomy; each is responsible for balancing its own budget and determining how to spread its financial and teaching resources.

Because the report responds to a general uneasy feeling that the university should be "doing something," it roams over many subjects—Harvard and Cambridge, the university and blacks, the role of "urban studies" in undergraduate and graduate training—without exhaustively studying any of them. Nor does it systematically investigate the university's economic impact