cooperation in scientific discovery was already well established and the possibilities of military exploitation were not very inviting. The treaty—which pledged continued cooperation, banned nuclear explosions and enlargement of territorial claims, and granted inspection rights to all parties throughout the Antartic—gave the status quo a new legal framework.

One question raised by the moon treaty is whether it could play a positive role in encouraging United States–Soviet cooperation in space. On the American side, at least, leading officials of the space agency appear to be doubtful. The Soviet space program has been carried on in an atmosphere of secrecy in sharp contrast with America's rather gaudy public displays. United States space scientists report a fairly free exchange of basic scientific data with the Russians at international meetings and through other channels, and considerable freedom is also evident when the subject at hand is theoretical. In the hard matters of technology and instrumentation, however—matters very largely inseparable in this field from the substance of discoveries—the Russians evidently have not been free to talk. (There is some speculation among our researchers that the Russian effort may be compartmentalized in a way that prevents the basic researchers from becoming too familiar with the technical side.)

There are a number of specific, limited areas of Soviet-American cooperation in space, but these—in the view of some American officials—have been either relatively unsuccessful or extremely limited. An example of partial failure is a planned cooperative system of meteorological satellites meant to provide extensive advance knowledge of global weather patterns. A subsidiary part of the 1963 agreement, providing for exchange of conventional weather data by a Washington-Moscow teletype, has now been implemented, but the Russians have apparently given the satellite system itself a low priority; in any event they have not yet orbited the satellites (*Science*, 5 April 1963). An example of limited success is the planned publication of a joint volume on space biology and medicine; U.S. space officials are pleased with the plans for this work and believe it will be of some value. But, they add, it is basically a codification of existing data —not a breakthrough in cooperative discovery.

When all is said and done, the answer to the question "Why bother with a treaty that asserts no new principles and offers no more intensive scientific collaboration?" appears to be "Why not?" There is considerable speculation about the reasons for the Russians' apparent eagerness to sign a treaty. Some State Department officials believe that the Soviet display of goodwill is an effort to show that their recent overtures to De Gaulle (which included showing him some scientific and space facilities hitherto closed to Western visitors) were not meant as an implicit snub to the United States (*Science*, 1 July 1966). Others believe that their interest in a treaty is somehow related to their relations with China—in some mysterious way that no one quite understands. Beneath the efforts being expended on the moon treaty appears to be the hope that negotiations on easy questions will build up a backlog of trust and experience for negotiations on harder ones. Thus, if the moon treaty will not give the scientists any more options, it will help keep the diplomats in practice.

—ELINOR LANGER

Social Sciences: Problems Examined by Senate Panel

The intensive soul-searching among social scientists provoked by the cancellation a year ago of project Camelot not only continues but is being strongly encouraged by the U.S. Senate's new Subcommittee on Government Research. Camelot has been defended as a straightforward study of political instability in Latin America and elsewhere, but it foundered on suspicion and controversy engendered at least in part by the fact that it was sponsored by the U.S. Army (*Science*, 10 September 1965). The news in April that, in the late 1950's, a Michigan State University project in Vietnam for the training of police and public officials was used as a cover by agents of the Central Intelligence Agency has intensified consideration of what is proper and what is improper in academic-government relationships in this country and abroad.

Shortly after the disclosures about CIA and Michigan State, Senator Fred R. Harris of Oklahoma, in a speech before the Oklahoma state convention of the American Association of University Professors, assailed the CIA and said that that agency should be forbidden to use any university project as a cover for its activities. "Social and behavioral science research in foreign countries can be very helpful to this and the host country in the formation of policy, but in many instances it is already suspect and under attack in the host country because it is thought to be some part of the United States' military or espionage activities," Harris said.

The CIA has provided a fine target for many a member of Congress, and to Harris, a 35-year-old freshman senator still searching for a strong public identity, it may have seemed fair game. However, as chairman of the Government Research Subcommittee, Harris has just begun a series of hearings indicating more than a passing interest in the problems of the social and behavioral sciences, both domestically and overseas.

The Harris subcommittee, which was established only last August, conducted hearings 27 and 28 June on the problems associated with social science research abroad and what the government should do about them. It heard the testimony of several officials of social and behavioral science groups—namely, the American Political Science Association, the American Psychological Association, the American Anthropological Association, and the American Sociological Association. Among others testifying were the chairman of the Committee on Behavioral Sciences

of the National Academy of Sciences–National Research Council and the State Department's director of intelligence and research.

The association representatives gave mainly their personal views, for, with a few exceptions, their organizations had reached no formal position on the issues discussed. Indeed, on certain issues, such as the appropriate organizational structure for government support of the social sciences, there is probably no consensus within the membership.

A major purpose of the hearings is to encourage academicians, government officials, and members of Congress to search for a better policy to govern relationships between government and the social sciences. On 19 and 20 July the subcommittee will hear more witnesses from academia; then, in August, administration officials—from the State and Defense departments and from such agencies as the National Science Foundation and the National Institutes of Health—will be asked for their views and for their reaction to the suggestions made by the social scientists.

Senator Harris believes that the hearings will reveal a need for legislation, and he may introduce such legislation next year. He told *Science* that, while not yet committed to any particular organizational structure, he is inclined to favor establishing a national social science foundation—parallel to NSF.

Any decision to create an "NSSF," or to expand the social sciences division of NSF, or even to continue existing arrangements, will be made against the complex background of current problems examined in the Harris subcommittee hearings. The possibility that military-sponsored research will arouse the suspicions of foreigners and compromise the integrity of the investigators is a problem that subcommittee witnesses discussed at length.

Gabriel Almond, president of APSA and professor of political science at Stanford, cited several factors which, regardless of the kind of project sponsorship, can make it difficult for social scientists to conduct work abroad. "American dominance in the field of social science research in foreign areas runs increasingly into conflict with the nationalist sensibilities of indigenous scholars," he said. Moreover, the trend toward socialism in many of the new nations tends to create distrust of researchers from the United States, the leading capitalist power. In addition, because of the trend toward authoritarianism in these same nations there is resistance to research on the sensitive topics of politics and social stratification, Almond observed.

In view of the foregoing, he said, sponsorship of research by defense or intelligence agencies—suggesting to foreigners that the research is designed to serve U.S. foreign policy—is likely to make access for the investigators all the harder. "The Central Intelligence Agency has damaged the reputation of the academic community for impartial and objective social science research," Almond said. The Department of Defense, too, has shown itself to be "clumsy and short-sighted," he added. Furthermore, he thinks that one must at least ask whether defense or intelligence sponsorship of basic social science research will affect the social scientist's freedom of choice regarding the kinds of problems to be investigated and his freedom to draw inferences from his research.

Almond expressed the belief that, given a choice, most social scientists would seek support from universities, private foundations, or those government agencies—such as NSF—which have an "unequivocal commitment to the development of science." In his view, the defense and intelligence agencies should be allowed to support social science research overseas only when the national interest clearly requires it and when no other sources of support are available.

State Department Lags?

Henry Reining, dean of U.C.L.A.'s School of Public Administration and a past president of the American Society for Public Administration, expressed a similar view. He indicated that the military's highly bureaucratic structure and its chain-of-command procedures conflict with the requirements of good scholarship. No one discounted the difficulties inherent in military sponsorship of social science research, but witnesses ventured the opinion that defense agencies have pioneered in supporting such research in part because the State Department has been laggard about doing so.

The State Department is a "conservative institution dominated by a foreign service which is trained largely in the law, in history, in the humanistic disciplines," Almond said. "They believe in making policy through some kind of intuitive and antenna-like process." According to official estimates, of the $25.3 million spent by government agencies on social science research abroad during fiscal 1966, the State Department spent only $200,000. The Defense Department spent $12.5 million, or half of the total.

A major question discussed in the hearings concerned the performance and appropriateness of the research-project review functions assigned last fall, in the wake of the Camelot affair, to the State Department's new Foreign Affairs Research Council (*Science*, 10 December 1965). The council, chaired by Thomas L. Hughes, director of intelligence and research, and comprised entirely of State Department officers, reviews for clearance all projects involving contacts with foreign nationals that are sponsored by the military and foreign affairs agencies. Certain other categories of projects may be subject to review, but domestic grants by NSF, NIH, the Fulbright program, and the National Defense Education Act are excluded. The council does not consider the merits of a project but considers only whether it is likely to cause embarrassment to the federal government.

According to Hughes, 240 projects have been cleared (including some which were cleared informally before the council procedures were established), and in 40 percent of the cases "mild or severe conditions for clearance were imposed." In only a "very small handful" of cases have the conditions imposed led to a project's cancellation. The council itself is intended to serve as an appeal board, for all clearances thus far have been handled by Hughes, the council chairman, who acts after receiving the report and recommendations of a reviewing officer. There had been no appeals, Hughes told the subcommittee.

The reviewing officers consider such things as a project's potential for being exploited by opposition parties in propaganda campaigns against the United States and the local government; the project's vulnerability to attack because of the suspicion aroused by the fact of its sponsorship by a particular agency; its classification (will the papers be published or kept confidential?); and its research techniques (will interviews or opinion polls be used?). When a project is found to be risky, consultations are in order—within the government, with U.S. diplomatic missions abroad, sometimes with a "host" government, and with foreign scholars. In some cases, foreign institutions may be associated with the project, thus giving native scholars a part in the research.

"The irony, of course, is that no amount of risk review can guarantee that there will not be another Camelot," Hughes said. "The review tends to be a one-shot affair, while the risk potential runs the length of the project and does not end with the project's completion." Hughes said that a group representing all social science disciplines, invited to sit in judgment on the review procedures, recently gave them a "general bill of good health."

Project Simpatico, Army-sponsored research related to the military "civic action" program in Colombia, has survived criticism in the Colombian legislature and is cited as a pleasing contrast to Camelot. This project, which was cleared by the Hughes council, was defended by the Colombian foreign minister. Simpatico was approved by the Colombian government before the research was begun. "The net effect of the furore was a reaffirmation of the value of the research and of the bilateral cooperation between the two governments," Hughes said.

Nonetheless, the new risk review procedures have by no means received a unanimous endorsement from the academic community. "They certainly have eroded confidence in the government's understanding of how science goes about its business," observed Arthur H. Brayfield, executive officer of the American Psychological Association. Brayfield questioned whether the review procedures are necessary. He indicated that they might never have been put into effect had better lines of communication existed between the administration and social scientists.

"It is a real handicap that the President's Office of Science and Technology does not have a high level position for behavioral scientists," he said. The APA secretariat has gotten no reaction as yet from its members about specific actions taken under the review procedures. "You would prefer that your peers look at your work," Brayfield said, however. "This is the way science is advanced, by having your critical colleagues look over your shoulder." Donald R. Young, a visiting professor of sociology at the Rockefeller University and chairman of the NAS-NRC committee on behavioral sciences, expressed concern that the review procedures might lead agencies to consider proposed projects with excessive caution.

On the other hand, Almond gave a qualified and somewhat tentative endorsement to the review procedures. The review council, he said, has tended to be permissive. "I know of only one complaint which has aroused any kind of emotional reaction," he remarked.

Although he favors the review procedures, Senator Harris has observed that they offer no assurance that the research projects undertaken will be of high quality. He feels, moreover, that much research now being conducted under military auspices should be "civilianized." Harris believes that a national social science foundation may be needed to bring the highest levels of professional competence to bear on the government's use of social science research both at home and abroad.

Almond, though not committing himself to the foundation idea, said it should be seriously considered. But Stephen T. Boggs, executive secretary of the American Anthropological Association, thought that, instead of creating a "NSSF," it would be better to expand the social science division of NSF. "We would be faced, if we had a social science foundation, with splitting out a portion of the field of anthropology because we have very close ties with many of the biological and physical sciences," Boggs said.

Young, speaking from his experience as a sociologist at Rockefeller, also saw major disadvantages in separating the social sciences from the "hard" sciences. "We have one man who is studying the problem of gross obesity," he said. "This is obviously both a problem of metabolism and a problem of values, habits, and patterns of life. For cooperation you have got to be there; you have got to work together on it. Now I am quite convinced that integration in the operating of grant-making sources is essential."

At this point, one cannot predict that the work of the Harris subcommittee will lead to concrete legislative achievements. However, Senator Harris, who seems in a fair way to become a serious, well-informed critic of government-science relationships, already may be serving a useful function by stepping up the tempo of discussions within the government and the scientific community about some major issues that are still unresolved. — LUTHER J. CARTER

REPORT FROM EUROPE

East-West Exchanges of Technology Increase Rapidly

London. Trade between Communist and non-Communist countries is expanding rapidly. A good deal of this trade involves the transfer of technology, much of it from West to East but some the other way, and thus it will influence the future standing of nations in international competition.

But the influence may not be exactly that feared by people who oppose any significant sale of technological advances to Communist countries.

The rapidly expanding exchanges of technology, most notable in the field of chemicals, indicate a considerable deficiency in applied technology in the Soviet Union. As a consequence of this deficiency, some targets for economic growth in the Soviet Union cannot be met without massive imports of processes and machines—even entire factories.

This is a further spur to independent behavior by East European countries, which have realized for some years that they could not achieve the economic growth required by their own populations if they kept their economic ties with the Soviet Union as close as their political and military dependence.

Hence, Western countries face large opportunities to earn still more from their industrially useful research and development.

At the same time, the increase in East-West technological trade shows that Eastern industrial managers have acquired both the understanding and