"An Effective Instrument of Peace": Scientific Cooperation as an Instrument of U.S. Foreign Policy, 1938–1950

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ABSTRACT

The profound transformation of postwar world affairs wrought by science encompassed both *competition*—driven by the atomic bomb and the growing centrality of science and technology to military as well as economic security during the cold war—and *cooperation,* driven by the desire to use science, in the words of the 1951 Berkner report, as "an effective instrument of peace." Of the two, the former has garnered greater attention among scholars and among public audiences; the latter, however, has also significantly influenced the organization and conduct of world affairs. In the years since World War II, scientific and technological cooperation among governments has become a prominent fixture on the global stage, in programs of development, in the existence of powerful international expert institutions, and in the day-to-day business of international diplomacy. Indeed, scientific and technological cooperation has transformed the institutional apparatus of the state for foreign policy, supplementing, and on occasion displacing, diplomacy with programs of technical assistance, coordination, and harmonization. This paper explores the early phases of this transformation, globally and in the foreign policy organs of the state, in the mobilization and deployment of intergovernmental scientific cooperation as an instrument of U.S. foreign policy between 1938 and 1950.

INTRODUCTION

The years immediately following World War II brought a geopolitical and organizational transformation of world order. Geopolitically, victory in the war and monopoly over the atomic bomb left the United States temporarily dominant, militarily and industrially, until the Soviet Union exploded its own nuclear weapon in 1950. Rivalry between the two emerging superpowers consolidated the division of Europe and, as it spread to other parts of the world, dismantled Europe's colonial empires, creating a rising tide of newly independent states. Organizationally, the defeat of Germany and

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The documentary record on which this paper draws is taken primarily from the records of the U.S. Department of State and the Interdepartmental Committee on Scientific and Cultural Cooperation. These documents can be found in the U.S. National Archives and Records Administration, at their College Park, Maryland, facility. Except where specifically noted otherwise, they are found in Record Group 353, Records of Interdepartmental and Intradepartmental Committees (Department of State), Section 3, Interdepartmental Advisory Council on Technical Cooperation and Its Predecessors (hereafter cited as NARA-RG353.3). The Interdepartmental Committee on Scientific and Cultural Cooperation is hereafter cited as SCC; the Interdepartmental Committee on Cooperation with the American Republics is hereafter cited as CAR.

Japan brought a new effort to institutionalize relations among nations. Transforming the United Nations from a wartime alliance into a multilateral organization for securing a peaceful and prosperous postwar era, the United States and its allies established the General Assembly and the Security Council as its central political institutions. At the same time, between 1943 and 1950, governments created a suite of expert institutions known collectively as the United Nations specialized agencies, including, among others, the Food and Agriculture Organization; the International Monetary Fund; the World Bank; the United Nations Educational, Scientific and Cultural Organization (UNESCO); the International Civil Aviation Organization; the World Health Organization; and the World Meteorological Organization. Many of these institutions remain central in the management of world affairs today.[1] The late 1940s also saw the United States establish extensive programs of economic and technical assistance, first in Europe, with the Marshall Plan, and later in what Harry Truman would label in his 1949 inaugural address the world's "underdeveloped countries." The end of the early postwar era, and the onset of the cold war, also brought the establishment of a new set of formal alliances radiating outward from the United States and the Soviet Union, spanning much of the globe in spheres of military and industrial competition.[2]

Science and technology contributed deeply to this transformation. Part of this influence arose from the use of science and technology as instruments of national security. The atomic bomb, and later ballistic missiles, fundamentally altered the calculus of power among nations. Less well appreciated, however, is the extent to which the postwar transformation of world order also derived from the contributions of science and technology to a fundamental shift in the practice and conduct of global diplomacy and in the organization of the state for world affairs. This latter transformation was driven by the rapidly expanding presence of scientific and technical experts in diplomatic affairs. On issues ranging from arms control and the stabilization of financial markets to public health and airline navigation, they lent their expertise to the day-to-day business of foreign policy during the immediate postwar era, supplementing, and sometimes even displacing, diplomats.[3] Especially in the UN specialized agencies and in

[1] The United States initiated or actively promoted the creation of these organizations in a series of conferences beginning with the UN Conference on Food and Agriculture in 1943 and the Bretton Woods Conference in 1944. By 1947, agreements had been signed constituting the majority of these organizations, although some would not come into force until the late 1940s or early 1950s.

[2] On the institutionalization of postwar international organization, see, especially, G. John Ikenberry, *After Victory: Institutions, Strategic Restraint, and the Rebuilding of Order after Major Wars* (Princeton, 2001); and John G. Ruggie, *Multilateralism Matters: The Theory and Praxis of an Institutional Form* (New York, 1993).

[3] The precise balance among diplomatic and expert delegates often varied, across fields and at specific meetings. In meteorology, for example, U.S. legal experts were present during the negotiation of the World Meteorological Convention, although the primary negotiations took place among the heads of national weather services. Subsequent to the creation of the World Meteorological Organization, U.S. representation to the organization was housed fully within the U.S. Weather Bureau, and the chief of the U.S. Weather Bureau served as the organization's first president. See Clark A. Miller, "Scientific Internationalism in American Foreign Policy: The Case of Meteorology (1947–1958)," in *Changing the Atmosphere: Expert Knowledge and Environmental Governance* (Cambridge, 2001), ed. Clark A. Miller and P. Edwards. In postwar arms control, by contrast, diplomats retained control over most activities, even as scientists began to join in meetings. Separate technical meetings became an important part of the arms control process, but even here diplomatic representatives kept a careful eye on the proceedings. See Kai-Henrik Barth, "Science and Politics in Early Nuclear Arms Control Negotiations," *Physics Today* 51 (1998): 34–9. See also Harold K. Jacobson and Eric Stein, *Diplomats, Scientists, and Politicians: The United States and the Nuclear Test Ban Negotiations* (Ann Arbor, Mich.,

programs of economic and technical assistance, scientists, engineers, economists, agronomists, and other experts became frontline participants in the negotiation, creation, and management of new global institutions and policy programs.

This shift toward growing involvement of experts in the conduct and organization of world affairs both reflected and drove state-level changes in the organization of diplomacy. Especially in the United States, which led much of the effort to institutionalize expertise in world affairs, agencies other than the Department of State often took the lead in managing U.S. policy with respect to the expert institutions of the United Nations and the burgeoning technical assistance programs. Building on trends during the Progressive and New Deal eras that had seen a wide range of federal agencies acquire new policy responsibilities through the mobilization of science and expertise, these agencies now asserted important new roles in conducting U.S. policy abroad, ending the State Department's traditional monopoly over U.S. foreign policy.[4]

The growing presence of experts in diplomatic affairs after 1945—and their roles in transforming science and technology into instruments of multilateral cooperation and governance—was a direct result of a novel commitment to *scientific internationalism* in the ideological underpinnings of postwar U.S. foreign policy. Scientific internationalism can be understood as the idea that international cooperation in science contributes in important ways to the furtherance of broader goals of international peace and prosperity. This idea, which dates to the nineteenth century, after World War I helped to underpin certain programs of the League of Nations, such as the International Committee for Intellectual Cooperation. In the aftermath of World War II, however, U.S. foreign policy officials adopted this idea and transformed it from a well-meaning, if essentially marginal, idea within the organization and activities of the League into a central tenet of postwar international organization. At the same time, they altered the idea itself, shifting international cooperation in science from the realm of cultural cooperation among nations (understood as peoples) to the realm of geopolitical relations among states. For U.S. foreign policy officials after the war, scientific cooperation was less important as a form of cultural and intellectual exchange and friendship than as a means for identifying, analyzing, and solving global policy problems and promoting technological and economic growth as the foundation for democracy and national security.

Elsewhere, I have described the broad outlines of scientific internationalism as it was implemented in U.S. foreign policy after World War II, its contributions to shaping the postwar order, and its influence on the character and organization of the United Nations specialized agencies between 1945 and the International Geophysical Year

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1966). By the late 1990s, scientists formed a large portion of the representatives to international environmental organizations such as the Intergovernmental Panel on Climate Change (IPCC). Even at meetings of international climate negotiators, where the U.S. delegation was headed by a representative of the State Department, the other twenty-plus members of the delegation were technically trained experts from other agencies of the federal government. See Clark A. Miller, "Challenges to the Application of Science to Global Affairs: Contingency, Trust, and Moral Order," in Miller and Edwards, *Changing the Atmosphere* (cit. n. 3); and idem, "Climate Science and the Making of a Global Political Order," in *States of Knowledge: The Co-production of Science and Social Order,* ed. Sheila Jasanoff (London, 2004), for detailed discussion of the role of science in the IPCC and the climate negotiations.

[4] On the growing role of science, technology, and expertise in the transformation of early twentieth-century U.S. policy-making, see, e.g., Samuel P. Hays, *Conservation and the Gospel of Efficiency* (Oxford, 1959).

(1957–1958).[5] To date, however, the uptake and transformation of scientific internationalism among U.S. foreign policy officials remains somewhat of a mystery. When did U.S. foreign policy officials begin to adopt and adapt the idea that scientific cooperation among governments could serve as a "positive instrument for the development among nations and peoples of the soil and climate essential to the growth of peace"?[6] Who were its advocates among U.S. policy officials? What evidence did they offer on its behalf, in support of its broader utility to U.S. foreign policy objectives? How did their justifications evolve, over time, into a coherent and stable logic for supporting international scientific and technological institutions and programs? Finally, how did they coordinate the adoption and implementation of this new form of scientific internationalism across a vast array of policy domains, from health and weather to civil aviation, agriculture, and finance?

To answer these questions, this paper examines in detail the history of a relatively little known State Department organization known after the war as the Interdepartmental Committee on Scientific and Cultural Cooperation. Created by President Franklin D. Roosevelt to help secure Latin American cooperation with the war, this committee coordinated the first systematic U.S. technical assistance programs to Latin America from 1938 to 1945. As its name suggests, it drew at least part of its inspiration from the idea that intellectual exchange, like cultural exchange more broadly, could help to build mutual friendship among nations. During the war, however, the committee became a site of ideological debates between the State Department and other federal agencies, which ultimately won backing for a new idea, that scientific and technological cooperation was important less for its ability to generate international goodwill than for its ability to confront practical policy problems. Under the committee's programs, hundreds of U.S. government scientists and technical experts worked with Latin American counterparts to address such problems as fisheries management, the creation of statistical agencies, and the improvement of agricultural production.

By war's end, the program had emerged as a key exemplar of the possibilities of scientific and technological cooperation as a foundation for broader international policy coordination and problem solving. Moving quickly to secure its position in postwar foreign policy, the committee took on new responsibilities after 1945, including the coordination of U.S. policy vis-à-vis both the new United Nations specialized agencies and technical assistance programs in Europe, the Middle East, and Asia. Although the committee would ultimately be dissolved in the government reorganizations of foreign policy that took place in the late 1940s and early 1950s, its decade of work would see the emergence of key ideas underpinning the creation of the United

[5] Clark A. Miller, "The Globalization of Human Affairs: A Reconsideration of Science, Political Economy, and World Order," in *Rethinking Global Political Economy: Emerging Issues, Unfolding Odysseys,* ed. Mary Ann Tetreault, Robert Denemark, Kurt Burch, and Kenneth Thomas (New York, 2003); and Miller, "Scientific Internationalism" (cit. n. 3). See also Anne-Marie Burley, "Regulating the World: Multilateralism, International Law, and the Projection of the New Deal Regulatory State," in Ruggie, *Multilateralism Matters* (cit. n. 2), 125–56; and G. John Ikenberry, "A World Economy Restored: Expert Consensus and the Anglo-American Postwar Settlement," *International Organization* 46 (1992): 289–322.

[6] Olcott H. Deming, "In the Minds of Men: Speech Given before the Alumni and Faculty of Rollins College," Feb. 24, 1946, Folders—Speeches; Box #25; Reports; Project Reports, Quarterly; Library of Congress—Statistical Data; Entry #14; Subject Files, 1938–53; NARA-RG353.3 (hereafter cited as SCC Speeches).

Nations specialized agencies, as well as the Marshall Plan, Truman's Point Four Program, and, in subsequent years, the U.S. Agency for International Development.

Indeed, the committee's profound influence on the shape of postwar world affairs remains visible today, over a half-century later. Although frequently eclipsed in the 1950s and 1960s by the events of the cold war, the United Nations specialized agencies had reemerged by the 1990s as central sites in the management and regulation of economic and technological globalization. So powerful have many of these expert agencies become that antiglobalization protesters have labeled them a de facto world government. Experts also continue to pervade diplomatic relations. Attend a meeting of the United Nations Framework Convention on Climate Change or other treaty organization and one is likely to find the few diplomats in the room outnumbered by their technical colleagues from ministries of agriculture, energy, transportation, commerce, and the environment. Perhaps more ambivalently, science and technology remain today a key metric against which the progress of civilization is measured, despite fifty years in which the project of modernization, as described by James Scott and others, has far too frequently operated within a culture of scientific and technological hubris and given rise to tragic human consequences.[7]

ENROLLING OUR LATIN NEIGHBORS, 1938–1945

Governments had long been embarked upon limited programs of international scientific cooperation, including in colonial science policies as well as technical exchanges and missions between countries, before World War II.[8] After the war, however, United States foreign policy invested these activities with a broader meaning and significance for world order. In so doing, U.S. foreign policy officials were building on efforts to promote intellectual cooperation and exchange among the nations of the world in the late nineteenth and early twentieth centuries, many of which had led to the creation of international organizations and had been incorporated into the League of Nations. There are important differences, however, between international scientific cooperation during these two periods. First, many prewar international organizations operated as private entities, in which individuals, not governments, cooperated with one another, for professional, not geopolitical, reasons.[9] Second, much of the prewar activity was justified by a logic that connected scientific exchange to broader forms of intellectual and cultural exchange. By contrast, postwar justifications connected scientific cooperation to technological development, economic growth, and national security. Postwar programs of scientific and technological cooperation were not only professional but also geopolitical initiatives that involved direct government-to-government cooperation in an effort to secure a peaceful and prosperous world order.

[7] James Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven, 1998); Stephen Lansing, *Priests and Programmers: Technologies of Power in the Engineered Landscape of Bali* (Princeton, 1991); Vandana Shiva, *The Violence of the Green Revolution: Third World Agriculture, Ecology, and Politics* (London, 1991); James Ferguson, *The Anti-Politics Machine: "Development," Depoliticization, and Bureaucratic Power in Lesotho* (Cambridge, 1990).

[8] Merle Curti and Kendall Birr, *Prelude to Point Four: American Technical Missions Overseas, 1838–1938* (Madison, Wis., 1954); William K. Storey, *Science and Power in Colonial Mauritius* (Rochester, N.Y., 1997); idem, "Plants, Power, and Development: Founding the Imperial Department of Agriculture for the West Indies, 1880–1914," in Jasanoff, *States of Knowledge* (cit. n. 3).

[9] See, e.g., the discussion of the differences between the prewar International Meteorological Organization and the postwar World Meteorological Organization, in Miller, "Scientific Internationalism" (cit. n. 3).

These two shifts in logic were forged in the development of U.S. Latin American policy from 1938 to 1945. When Franklin D. Roosevelt came to office in 1933, his immediate concerns were on the depression that haunted the American economy. During his first hundred days, however, Roosevelt took time to put in place new foreign policy objectives for Latin America. He announced, during his inaugural address in January, that his foreign policy would make the United States into a "good neighbor" to the countries of the world, and in April, he articulated his vision for better neighborly relations with Latin America. The following summer, the president put this vision into action, refusing to use American treaty rights to intervene militarily during a series of changes in Cuban government, thereby winning popular and official admiration in many of the Latin American republics.[10]

Increasingly referred to as Roosevelt's Good Neighbor Policy, inter-American relations acquired further importance in the president's eyes with the rise of tensions in Europe. Roosevelt now upped the ante, moving to enroll Latin America in a security agreement that would prevent war from spreading to the Western Hemisphere. U.S. and Latin American leaders met in 1936 in Buenos Aires and again in 1938 in Lima to lay down ground rules for inter-American cooperation should Europe plunge into active war. Following the Lima meeting, Roosevelt indicated his desire to build upon these dramatic successes through "a concrete program designed to render closer and more effective the relationship between the Government and people of the United States and our neighbors in the twenty republics to the south." In response, Roosevelt's advisers set up a new committee, appropriately, if unimaginatively, named the Interdepartmental Committee on Cooperation with the American Republics. The committee set to work in May 1938 to identify projects and activities "in which the Government of the United States is in a position to cooperate with the other American republics for their mutual advantage." Composed of key government leaders, the committee was chaired by Sumner Welles, undersecretary of state. Its November 1938 report, detailing a proposed slate of projects, was submitted to Roosevelt under the signatures of his key cabinet officials.[11]

The program laid out in the committee's first report proposed approximately $1 million in projects to be carried out by each of the thirteen agencies involved, with the largest contributions to the Department of Agriculture ($350,000), the National Emergency Council ($176,000), and the Public Health Service ($100,080). Proposed projects ranged broadly, including soil and forest surveys, training in meteorological techniques, construction of the inter-American highway, loans of experts in fisheries, improvement of statistical services, films for distribution to both U.S. and Latin American audiences, fellowships for librarians, collections of folk music, ethnologi-

[10] See, e.g., the account of Roosevelt's prewar policies laid out by Assistant Secretary of State Sumner Welles. Welles, *The Time for Decision* (New York, 1944).

[11] Sumner Welles, Henry Morgenthau, Frank Murphy et al., "Report of the Inter-Departmental Committee on Cooperation with the American Republics Together with the Program of Cooperation Endorsed by the Committee," Nov. 10, 1938, Folder— History and Development of the Committee, Box 1, Entry #13, Records Relating to the History and Development of the Council and its Predecessors, 1938–1953, NARA-RG353.3 (hereafter cited as Council History Documents). The report was signed by the secretaries of interior, agriculture, commerce, and labor, the assistant secretary of the treasury, the librarian of Congress, the secretary of the Smithsonian Institution, the chairman of the Federal Communications Commission, the vice-chairman of the U.S. Maritime Commission, the president of the Export-Import Bank, the executive director of the National Emergency Council, and the chairman of the Civil Aeronautics Authority.

cal studies of "aborigines of the New World," establishment of a central translating office in the State Department, research on tropical diseases, and studies of means to simplify passport and landing requirements and liberalize tourist regulations.[12]

Justifying these projects, the report noted that they included "studies, investigations and enterprises to be carried out in such of the American republics as are desirous of engaging in them," as well as "projects for extending the educational, scientific and technical facilities of the several agencies." Attention was given to "intergovernmental cooperation," "expert assistance," "offer of service training for accredited foreign officials," "exchanges of students and professors," and translations of U.S. government publications, "especially those relating to public health, educational, scientific and technical matters, commerce, conservation, et cetera." The projects were assembled with an eye toward "the increasing importance of cultural relationships" and "the premise that the republics of the New World have the same aspirations, that the welfare of the community of American nations demands their increasingly close and friendly association, and that through a program of practical, reciprocal cooperation the fulfillment of our common American ideals can be brought appreciably closer to achievement."[13]

The committee took immediate advantage of Public Law 535 (1938), later amended by Public Law 63 (1939), which authorized the president to detail U.S. government employees for temporary service for periods of up to one year to the government of an American republic "if such government is desirous of obtaining the services of a person having special scientific or other technical or professional qualifications." Congressional appropriations for other kinds of projects were delayed for a year, however, until the passage of Public Law 355 (1939). This new law allowed the United States "to utilize the services of the departments, agencies, and independent establishments of the Government in carrying out . . . reciprocal undertakings and cooperative purposes" set forth in the 1936 and 1938 inter-American treaties.

Based on the committee records alone, the impact of these projects in Latin America and their reception by Latin American leaders and publics is unclear. In Washington, however, the committee's work received positive, if not stellar, reviews. Between 1940 and 1944, the committee budget grew by an order of magnitude to $4.5 million.[14] By 1944, the committee had coordinated seventy-two details of U.S. government experts to other countries, averaging six months per detail, at an additional cost of $270,000. Clearly, the committee's work satisfied its members, its supporters in the Roosevelt administration, and its congressional funders that it served a useful purpose. The war had not crossed the Atlantic into Latin America, and that alone might offer sufficient reason for continuing to support anything that looked like it had any value.

[12] CAR, "Description of the Program Endorsed by the Committee Together with Estimates of the Appropriations Required to Put the Program into Effect," Nov. 10, 1938, Council History Documents.

[13] Welles et al., "Report" (cit. n. 11). Committee records unfortunately provide no direct evidence of how Latin American governments and citizens responded to the committee's activities. However, committee records contain no materials that would indicate that either governments or individuals in Latin America took exception to the committee. Moreover, there is plenty of evidence in the committee records that Latin American governments availed themselves extensively of the committee's programs. U.S. law required that all committee projects be initiated by requests from Latin American governments.

[14] Appropriations for sixteen committee projects totaling $370,000 were legislated beginning in fiscal year 1940/41. In 1942, Congress appropriated $600,000 to the committee, and in 1943, committee appropriations grew again to $1,685,000. By 1944, congressional appropriation for the committee had risen to $4.5 million (more than $50 million in 2003 dollars).

More important for our purposes here is the evolving rationale offered by the committee in justifying its continued work. During the committee's first few years of operation, its documents highlighted the importance of "practical, reciprocal cooperation" in identifying projects. The two largest categories of details were agricultural and fisheries experts (thirteen and twelve, respectively).[15] Committee reports indicated that projects were chosen out of a common belief "in the efficiency of practical day-to-day collaboration" and that the goals of "friendship in a peaceful American world" required that they be "cooperative" and "of practical value" and convey "reciprocally mutual benefits." In this fashion, the committee sought to undermine two potential criticisms: that the projects were being undertaken for propaganda purposes, and that they were simply giveaways of U.S. money and resources to Latin America. Thus, committee selection rules insisted that both the United States and its partner benefit from potential projects. U.S. benefit was determined and ensured by the sponsoring agency, but benefit to the host country was more difficult to determine and ensure. To address this concern, Public Law 63 (1939) required that any detail of U.S. experts to a foreign government be preceded by a formal request for the project by the host country. Likewise, host governments were encouraged, and in some cases required, to share in the costs of many committee projects. In short, at least in its early years, the committee went out of its way to choose projects it could defend as having clear, tangible benefits for all countries involved and that it could argue would bring U.S. and Latin American partners together in a spirit of goodwill, with the intention of building "closer relationships with the other American republics."[16]

In late 1941 and early 1942, however, two events combined to change the committee's outlook. The bombing of Pearl Harbor in December 1941 radically altered the stakes of inter-American cooperation and quickly brought nearly all American republics into a state of war with Germany and Japan. Soon thereafter, in spring 1942, the committee's formal housing in the State Department was moved from the Division of American Republics to the Division of Cultural Relations as part of a larger departmental reorganization. Although the committee always had officially been an interdepartmental one, with twenty-seven member agencies by 1942, its chair and staff had resided within the State Department.

Given the evolving logic of the committee's work, geared as it was toward improving relations between the peoples and governments of the Americas, this move seemed, at first blush, obvious. The State Department's Division of Cultural Relations (DCR) had been created in 1938 "for the purpose of encouraging and strengthening cultural relations and intellectual cooperation between the United States and other countries." However, DCR had operated at a fairly small scale and received little notice until the outbreak of war. By 1942, the budget of the Interdepartmental Committee on Cooperation with the American Republics far outstripped that of DCR. By moving the committee to DCR, the State Department would combine under one umbrella all its

[15] CAR, "An Account of Its Organization and Present Activities," 1943, Council History Documents; "Act of May 25, 1938 as Amended by the Act of May 3, 1939 (Public Law No. 63, 76th Congress), Recapitulation of Statistical Data," Oct. 14, 1944, Council History Documents; SCC, "Program for 'Cooperation with the American Republics,'" Aug. 15, 1947, Council History Documents.

[16] SCC, "Objectives of the Program of the Interdepartmental Committee on Scientific and Cultural Cooperation (SCC) and Criteria Which Have Been Used in Selection of Projects," Nov. 30, 1948, Folder—Memos #2–45. Box #30, Records of the Full Committee, Entry #26, Interdepartmental Committee on Scientific and Cultural Cooperation, NARA-RG353.3 (hereafter cited as SCC Memos).

efforts to strengthen cultural relations between the United States and other countries of the world and also dramatically increase the DCR budget.[17]

Within the State Department, the move caused few complaints. Rhetoric in defense of the committee underwent a subtle shift, reflecting the emphasis at DCR on cultural cooperation and understanding. Sumner Welles and Assistant Secretary of State G. Howland Shaw spoke of the committee in terms that emphasized its "scientific, economic, cultural, and social endeavor" and pointed to its value in generating "better understanding of our ways, means, and methods of life" and improving "inter-nation and inter-people understanding." Consistent with DCR's mission, the new rhetoric of justification stressed the construction of a positive image of the United States and the export of that image abroad. As Welles framed the committee's mission at a meeting in August 1942, "Effective international cooperation cannot exist unless there is an appreciation and understanding in each country of those problems of other countries which arise from national customs, traditions, achievements, and philosophies of life. . . . We have the task of learning to appreciate and understand the viewpoints, traditions, and customs of our neighbors in the other American Republics and of making it possible for them to see our problems and ways of life—not by propaganda or proselyting, but rather by the joint execution of useful undertakings and through the personal associations incident thereto."[18]

For many of the other members of the committee, however, relations with their new hosts in DCR quickly soured. While the rhetoric's subtle shift toward cultural friendship was not a problem, per se, DCR leaders had a tendency to overweight cultural projects in budgetary terms, too. Committee members from other government agencies complained that too much money was being spent on films and libraries and not enough on science, and they expressed dismay that the program was straying from what it did best. In their views, the committee had derived significant early success from its emphasis on projects of practical value, especially in areas of scientific and technical expertise and competence, and that success was now in danger of evaporating. The shift to DCR also gave rise to a second set of questions about the administrative positioning of the committee. Initially, the committee had operated as an independent program in the office of the undersecretary of state. The shift to DCR lowered the committee two tiers within the State Department organization, well below not only its previous position in the department but also its organizational status with respect to most other federal agencies as well.[19]

By the end of 1943, dissatisfaction with the new arrangements led to organizational struggles within the State Department. In January 1944, the State Department returned the committee to independent status within the Office of American Republic Affairs and assigned it a permanent chairman and an executive secretary, reestablishing its former status and significantly boosting its institutional infrastructure. Two years of deliberations under DCR had honed what most members outside the State Department saw as the committee's core mission—scientific and technical cooperation—and after the 1944 reorganization, that mission was given new prominence,

[17] "Administrative Relations of the Secretariat of the Interdepartmental Committee on Cooperation with the American Republics within the Department [of State]," Council History Documents.

[18] Undersecretary of State Sumner Welles, "Meeting of the Interdepartmental Committee on Scientific and Cultural Cooperation," Aug. 12, 1942, quoted in SCC, "Objectives" (cit. n. 16).

[19] "The Interdepartmental Committee on Cooperation with the American Republics: An Analysis of Its Administration," 1944, Council History Documents.

independent of the goal of improving cultural relations.[20] In his February 1944 "Report to the President on Closer Relationship between the American Republics," Acting Secretary of State Edward Stettinius (who had replaced Cordell Hull) outlined the new logic of the committee's operations:

> Programs of this character are an effective means of achieving international, hence national, security. Measures which spread an understanding of the democratic way of life and diffuse scientific knowledge useful in organizing it may be made the support of political and economic peace measures. In this connection it should be emphasized that the amelioration of the lives of common men is actually achieved only as they learn new ways of doing things. Thus the cooperative program may provide means of creating necessary conditions for orderly and peaceful development. In providing the world's peoples with the means of doing better for themselves, the American people will be creating conditions favorable to the development of their own way of life; and in this prospect alone is true national security.[21]

For the first time in defending the committee, Stettinius articulated in this statement the connections between scientific cooperation, development, and peace and security that would be highlighted in postwar programs of technical assistance. What was important, in Stettinius's logic, was the idea that practical, technical advice would provide people with the means of securing a better living—and therefore with the foundations for peace. For the first time, too, as foreign policy officials began to look toward war's end, the glimmerings of the idea appeared that what was necessary for American security was a significant reordering of world affairs—as well as the role that scientific and technological cooperation might play in bringing that transformation about through stable, peaceful means.

Struggles over the committee's organization continued throughout 1944. Another State Department reorganization, carried out on December 20, 1944, reformulated DCR as the Division of Cultural Cooperation and transferred the committee to this new organization, but this time at the highest levels. To protect the committee's strong focus on science, its name was changed. It would be known for the last few months of the war as the Interdepartmental Committee for Cultural and Scientific Cooperation, for the first time adding an explicit reference to science in the committee's mission.[22] The State Department also appointed Raymund L. Zwemer as its new executive director and, at the same time, as associate chief of the Division of Cultural Cooperation, giving the committee new clout within the division. Son of a missionary preacher, Zwemer had a Ph.D. from Yale and was a professor of anatomy at Columbia University. He had spent the previous two years giving lectures on medical topics in Latin America through the committee's programs and so was uniquely suited to lead the committee under its new mandate, especially, as we will see, in the crucial years of transition that followed.[23]

[20] SCC, "Program" (cit. n. 15).

[21] Acting Secretary of State Edward R. Stettinius, "Report to the President on Closer Relationship between the American Republics," Feb. 21, 1944, House Document 474, 78th Congress, quoted in SCC, "Objectives" (cit. n. 16).

[22] *United States Government Manual* (Washington, D.C., 1945). See also SCC, *Activities of the Interdepartmental Committee on Scientific and Cultural Cooperation,* Dept. of State, Inter-American Series, no. 31 (Washington, D.C., 1946).

[23] Joseph Sullivan, with Paul Colton, *Raymund L. Zwemer: A Register of His Papers in the Library of Congress* (Manuscript Division, Library of Congress: Washington, D.C.), 1996. Zwemer's position

Zwemer's appointment as executive director began an important period of transition in the committee's work. By late 1944, the committee had achieved a great deal. Its leadership now rested in the hands of a well-respected scientist, and its position within the State Department was secured at the highest levels of the Division of Cultural Cooperation. The committee had a proven record of successful organization (since 1938) and implementation of projects (since 1940). It had the backing of Secretary of State Stettinius, who as described above had defended the program to Congress as "an effective means of achieving international, hence national, security." Perhaps most importantly, the committee had developed an institutional and intellectual framework for pursuing scientific and technological cooperation in the service of U.S. foreign policy. Key to the committee's institutional success was an effective interagency coordination mechanism that allowed the committee to both call upon the skills, expertise, and resources of a wide range of federal government agencies and coordinate their deployment to various Latin American countries.[24] Just as importantly, for purposes of my argument here, its members had articulated a new logic that distinguished scientific and technical cooperation from other forms of cultural and intellectual exchange and that highlighted the unique capacity of scientific and technical cooperation to achieve certain kinds of outcomes in international cooperation not possible through other kinds of activities. All of these successes in Latin America would turn out to be important for the committee's subsequent emergence as a source of policy leadership in U.S. foreign policy for science after the war's end.

For a few months in early 1945, the impending end of the war and the upcoming United Nations conference in early April occupied much of the attention of Roosevelt and his foreign policy leadership, including many of the committee's members. Roosevelt's death, in early April, also affected the committee's work, although the number of projects and the level of financial support for that work continued to grow. Committee meetings became further and further apart. As with many wartime programs, questions arose as to whether the end of the war would bring the termination of its activities. All of that would change, however, with Truman's announcement in August 1945 that the United States had dropped an atomic bomb on Japan.

INTERLUDE: INTERNATIONAL CONTROL OF ATOMIC ENERGY, 1945–1946

As Paul Boyer has described at length in *By the Bomb's Early Light,* public reaction to the news that U.S. scientists had developed an extremely powerful new weapon was immediate and fearful.[25] The role of science in world affairs became a central subject for conversation at the highest levels of U.S. policy and raised questions among the wider American public—who shared a wary fascination with nuclear science, its use,

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as executive director was an important starting point for a long career in public service. After leaving the committee in 1947, Zwemer would go on to become executive secretary of the National Academy of Sciences and the National Research Council, chief of the Science and Technology Division of the Library of Congress, and chief of the Division of International Cooperation in Scientific Research for UNESCO.

[24] The historical importance of this mechanism can hardly be overstated. During the postwar era, interagency mechanisms would be used to coordinate U.S. policy vis-à-vis a wide range of international issues. Today, such institutions are legion and a key element of governance. At the time, however, it was one of the earliest such committees created and one of only a handful in existence.

[25] Paul Boyer, *By the Bomb's Early Light: American Thought and Culture at the Dawn of the Atomic Age* (Princeton, 1985).

and its implications for world order that continues to the present. What were the implications of the enormous destructive potential of the atomic bomb for relationships among states? Had science ended war forever? Or had it unleashed a new race for power that would plunge the United States back into war and lead to the destruction of humankind? How soon would other countries, especially the Soviet Union, develop atomic weaponry of their own?

These questions not only placed science at the forefront of debates over the future of world affairs but also gave new weight to the presence of scientists in discussions of U.S. foreign policy. As numerous historians have described, postwar debates over atomic energy gave rise to increasingly close ties between scientists and the security state. Physics, perhaps, epitomized this relationship most clearly. No other discipline was as deeply implicated in the postwar transformation of the sciences into instruments of national security. In the wake of their wartime successes in radar, proximity fuses, and the atomic bomb, physics laboratories became "our first line of defense," and a great deal of physics research retreated behind the walls of secrecy. As Robert Patterson, U.S. secretary of war, put it in 1945, "A nation that lags in the laboratory will not only have no chance of victory in a future war . . . it will not survive."[26] The military invested heavily in science, building its own "national laboratories," transforming the modern research university, and creating what Eisenhower would later decry as the military-industrial-academic complex. Physicists, in turn, became high-profile political advisers to the military, the State Department, and the presidency. Other countries followed suit, forging tightly knit communities linking physicists to the national defense establishment.[27]

The growing ties between science and the state were equally evident in fields other than military research. As I have described above, the wartime work of the Interdepartmental Committee on Scientific and Cultural Cooperation and its member agencies had already begun to involve scientists and experts from numerous fields in U.S. diplomatic affairs. This work expanded from Latin America to the globe following World War II, growing dramatically in scale and involving experts from agronomy and economics to meteorology and health. Before I turn to the committee's postwar work, however, I want to take a brief interlude to examine the broader context of its work. While the committee served as a major site of policy coordination for scientific and technical cooperation after the war, the dropping of the atomic bomb also brought calls for international scientific cooperation in atomic physics. The fate of calls for international cooperation in atomic energy offers a useful comparison for the committee's work, helping to highlight what was unique about the committee's justificatory logic for supporting scientific and technical cooperation as a key element in U.S. foreign policy. Indeed, support for international control of atomic energy was pitched in a framework almost exactly the reverse of the committee's logic. Instead of scientific and technical cooperation being seen as a strategy for laying the groundwork for

[26] Cited in Michael A. Dennis, "'Our First Line of Defense': Two University Laboratories in the Postwar American State," *Isis* 85 (1994): 427–55.

[27] Daniel J. Kevles, *The Physicists: The History of a Scientific Community in Modern America* (Cambridge, Mass., 1987); Dennis, "'Our First Line of Defense'" (cit. n. 26); Stuart W. Leslie, *The Cold War and American Science: The Military-Industrial-Academic Complex at MIT and Stanford* (New York, 1993); James Killian, *Sputnik, Scientists, and Eisenhower: A Memoir of the First Special Assistant to the President for Science and Technology* (Cambridge, Mass., 1977); Etel Solingen, ed., *Scientists and the State: Domestic Structures and the International Context* (Ann Arbor, Mich., 1994).

broader forms of political cooperation, political cooperation came to be seen as a precondition for technical cooperation in the field of atomic energy. The comparison also helps to explain why the committee's work was so important. Despite the active, high-level support of powerful figures such as Vannevar Bush from 1944 to 1947, U.S. and international foreign policy leaders ultimately rejected international scientific cooperation in atomic physics.[28] That they not only accepted the idea of scientific and technological cooperation in other fields but also embraced it as a central pillar of postwar international organization is a result of the committee's significant influence and accomplishments.

One of the most hotly contested debates about science and world affairs in 1945 and 1946 centered on the desirability of a continued U.S. monopoly over the atomic bomb. Should the United States seek to maintain its monopoly for as long as possible? Or should atomic energy, including the bomb, be handed over to the control of an international agency to ensure that it would be used only for peaceful purposes? Among U.S. scientific leaders, these questions were part of a broader set of concerns about the new position of science as an essential component of national security and a source of potentially significant conflict as nations sought primacy over their rivals in the laboratory. One problem was the long-term potential for the United States to lag in defense-related science. As the 1951 *Science and Foreign Relations* report (referred to as the Berkner report, for committee head Lloyd Berkner) put it, "American preeminence as demonstrated thus far is in the application of scientific discovery."[29] U.S. scientists and officials feared that the United States would not be able to compete successfully in science unless they were assured access to foreign science, since that was where the best basic science was being done.

Another problem was the possibility of a dangerous arms race prompted by the U.S. lead in the ability to construct atomic bombs. As early as September 1944, Vannevar Bush argued to Stimson and Roosevelt that the United States could stave off Russian efforts to secretly develop the bomb, and thus preempt a military arms race following the war, only by promoting widespread international exchange of scientific material. Disturbed by the possibility that Roosevelt would pursue a secret Anglo-American agreement to retain bilateral control over the new technology, Bush suggested consideration of an international organization to share control over atomic energy among all nations.[30] In October 1944, as he sought to dissuade Roosevelt from concluding a secret deal with the British that would lock out the Russians, Bush wrote to his colleague James Conant of the potential to use international exchange among biological warfare experts as a first step toward exchange among atomic scientists. Foreshadowing events to follow, however, Bush could not persuade the president of the value of scientific cooperation to the problem of atomic energy, and Roosevelt went ahead with his secret agreement with the British.

Bush did not give up on his idea that international scientific exchange and cooperation might provide an important impetus toward an international political solution to the problem of the bomb, and the end of the war brought new efforts in this direction. In November 1945, Bush reiterated his proposal for a United Nations scientific

[28] Not until the mid-1950s would Eisenhower resuscitate the idea of international cooperation among atomic energy experts in his proposal for the International Atomic Energy Agency.

[29] Lloyd Berkner, *Science and Foreign Relations* (Washington, D.C., 1951), 3.

[30] Richard Hewlett and Oscar Anderson, *The New World: A History of the United States Atomic Energy Commission,* vol. 1, *1939–1946* (University Park, Pa., 1962), 328.

agency to promote full dissemination of scientific information in all fields. He was not alone in calling for scientific cooperation in the field of atomic energy. Key scientific leaders advocated international scientific cooperation as a central element of a plan for international control of atomic energy. In the same month, the Federation of Atomic Physicists formed to advocate for a restoration of the free flow of scientific information among countries. In December, the federation released a memorandum detailing the feasibility of international control over atomic energy monitored by inspections carried out by "an international laboratory" made up of scientists from many countries.[31]

Bush and the atomic scientists ultimately proved unsuccessful in their efforts. The postwar record makes clear that U.S. control over "atomic secrets" remained the primary objective of postwar U.S. security policy. For the most part, American foreign policy leaders were not persuaded by the need for international control and opposed the idea of experimenting with an exchange of scientific ideas as a precursor to broader political cooperation. For military planners and their allies, science remained a key source of competition and potential conflict in world affairs, and those who favored retaining America's monopoly over the atomic bomb as long as possible consistently won out over those proposing scientific exchange and cooperation.

As a result, U.S. postwar policies insisted that international scientific exchanges in the field of atomic energy could only follow the achievement of a successful settlement of the broader question of international *political* control of atomic energy. The directionality of the logic here is important. Scientific cooperation would be allowed only following the settlement of the political problems of atomic energy. The idea that scientific cooperation might serve as a basis on which to build a subsequent era of political cooperation was rejected out of hand. The Truman-Attlee-King declaration of November 1945 seemed to suggest at first that the United Nations Atomic Energy Commission, which would begin work in January 1946, might start with consideration of an international scientific exchange and move on to consideration of safeguards (against other countries secretly developing atomic bombs) and the elimination of atomic weapons. However, later clarifications of the policy made clear that the agreement ruled out an exchange of key information on the military and civilian application of atomic energy until safeguards were in place. Even this went too far for key members of the administration and Congress, who opposed any release of atomic secrets without prior agreement on safeguards. By the time Secretary of State James F. Byrnes was ready to make a proposal to the Soviets in late December, Truman had been persuaded to change his position and now insisted on the primacy of safeguards.

Even the atomic scientists seemed to agree, by 1946, that this was the correct ordering of the logic. Working parallel to Bush outside the administration, the atomic scientists movement had become the most important group advocating publicly for international control of atomic energy. Through Robert Oppenheimer, they had access to high-level policy circles. Oppenheimer worked to infuse their ideas into the Acheson-Lilienthal report, drafted in early 1946.[32] The report called clearly for the release of U.S. scientific information only subsequent to the establishment of an effective

[31] Alice Kimball Smith, *A Peril and a Hope: The Scientists' Movement in America, 1945–47* (Chicago, 1965), 257.

[32] Smith, *A Peril and a Hope* (cit. n. 31), 455–60; Hewlett and Anderson, *The New World* (cit. n. 30), 531–54.

Atomic Development Authority with complete control over nuclear materials, unfettered inspections, and safeguards against national or private misuse of atomic energy. Notably, the report does not suggest that the proposed authority function as an expert agency. In this the Acheson-Lilienthal report differed markedly from other plans for international agencies being pursued by the United States in 1946 and 1947, which will be discussed below. The Acheson-Lilienthal report characterized the organization as an international corporation, requiring extensive experience in international business and government relations, with ownership over all nuclear materials and the sole right to license atomic technologies. Expertise was clearly important in carrying out the organization's functions, but the Acheson-Lilienthal report insisted that it would be a mistake to "overemphasize the advantages that may arise from the free association of the Authority's scientists and experts with those engaged in private or national undertakings." The report denied that scientists would naturally opt for international over natural or private allegiances. Cultivation of such feelings, it noted, would require "serious effort" on the authority's part.[33]

The primacy of safeguards and international control over scientific exchange continued to be U.S. policy through the opening of negotiations at the United Nations in 1946, and the subsequent development of the Baruch Plan only solidified this position.[34] The Baruch Plan drew heavily on the Acheson-Lilienthal report, especially with regard to the proper ordering of political and scientific cooperation. Up front, the proposal required a system of international monitoring and inspection that would enable verification that no countries were pursuing independent atomic energy programs. Bernard Baruch insisted that the Soviets would have to agree to a provision for sanction and punishment, up to and including war, should a nation violate the agreement, before the United States would be willing to share sensitive atomic secrets or give up its atomic weapons. He even insisted that the United Nations be restructured to eliminate its veto provisions to ensure that such punishments could be carried out. This last provision was consistently denounced by the Soviet Union as impossible and ultimately sank the negotiations. With ongoing Soviet rejection of the Baruch Plan throughout 1946 and 1947, American policy on atomic science became increasingly clear. The United States based its policy for nuclear weapons on sole possession of the scientific, technological, and material basis of atomic energy.[35]

THE POSTWAR PUSH FOR INTERNATIONAL SCIENTIFIC AND TECHNOLOGICAL COOPERATION, 1945–1947

The failure of Bush and the atomic scientists to achieve international cooperation in atomic energy stands in marked contrast to the success of programs of scientific and

[33] Chester I. Barnard, J. R. Oppenheimer, Charles A. Thomas et al., *A Report on the International Control of Atomic Energy* (Washington, D.C., 1946), 41. Bush agreed. Countering the idea that scientists somehow were naturally inclined toward internationalism, he argued that active steps would have to be taken to ensure that atomic scientists maintained a truly international perspective if international control were to work effectively over the long term. (See, e.g., Elizabeth Hodes, "Precedents for Social Responsibility among Scientists" [Ph.D. diss., Univ. of Calif., Santa Barbara, 1982]). Compare this attitude with that of U.S. assistant secretary of state Garrison Norton, at the opening of negotiations to establish the World Meteorological Organization, described below and in detail in Miller, "Scientific Internationalism" (cit. n. 3).

[34] Hewlett and Anderson, *The New World* (cit. n. 30), 455–77.

[35] Gregg Herken, *The Winning Weapon: The Atomic Bomb and the Cold War, 1945–1950* (Princeton, 1981), 171–191; Hewlett and Anderson, *The New World* (cit. n. 30), 531–619.

technological cooperation in other fields after the war. Between 1945 and 1950, scientific and technological cooperation became one of the most important instruments of U.S. foreign policy in fields as far apart as finance, public health, agriculture, aviation, meteorology, and development. Unlike their counterparts in debates about atomic energy, U.S. foreign policy officials concerned about other security challenges to the postwar order were easily persuaded of the value of international scientific, technical, and technological cooperation to their goals and objectives. On frontline issues—including starvation and disease, the need for financial stability in international currency markets, the desire for a peaceful dismantling of European colonial empires, and efforts to combat Communism in Europe and developing countries—cooperation among experts became commonplace. The United States dramatically increased investment in international scientific and technical cooperation, both diplomatically and financially, giving rise to rapid growth in the scale and scope of programs. During this period, U.S. scientists and foreign policy officials orchestrated the establishment of major new international scientific and expert bureaucracies in numerous fields that collectively became known as the United Nations specialized agencies. The United States also established new programs of scientific and technical assistance that laid the groundwork for rapid growth in the field of international development in the 1950s and 1960s. This dramatic growth was all based on the proposition that international cooperation among experts would sow the seeds for subsequent economic and political cooperation and, hence, peace.

Much of the success of U.S. foreign policy in promoting scientific and technological cooperation can be attributed to the ideas and the work of the Interdepartmental Committee on Scientific and Cultural Cooperation. As we have already seen, during the war the committee had rejected the idea of scientific cooperation as a form of cultural and intellectual exchange in favor of the value of scientific and technical assistance on practical projects that contributed to social and economic development, political stability, and international security. After the war, this logic became the foundational justification for expanding international scientific and technological cooperation in the postwar era and, indeed, for the next half century. Moreover, the committee had established its own capacity to run such programs effectively and to inject its ideas into high-level policy debates. In the three years following the war, the size of the committee's budget would triple, and the committee's programs would help shape the Marshall Plan and Truman's Point Four Program, which would ultimately raise U.S. funding for scientific and technical assistance abroad by a factor of a hundred by the early 1950s. In 1946 and 1947, the committee would also acquire new responsibilities for coordinating U.S. policy toward the United Nations specialized agencies. The committee's role in this area would ultimately help not only to establish powerful new international expert agencies but also to transform U.S. foreign policy institutions, decentralizing many aspects of U.S. diplomatic relations from the State Department to other federal agencies.

The value of the committee's ideas and work in the new world of atomic diplomacy became apparent as soon as the dust settled from Hiroshima and Nagasaki. As the war in the Pacific drew to a close and gave way to concern about the impact of the bomb on world affairs, the focus of U.S. foreign policy turned to reassuring both the world community and domestic audiences that the United States had the ideas and the capacity to secure the postwar order. In this quest for security, the committee, whose self-defined mission was, by this point, to promote peace and security through inter-

national scientific cooperation, seemed to offer a persuasive answer. On August 31, 1945, three weeks after the two atomic bombs were dropped on Japan, the committee was renamed the Interdepartmental Committee on Scientific and Cultural Cooperation and transferred to the Office of the Director of the Office of International Information and Cultural Affairs. Its chairman once again returned to the level of assistant secretary of state, this time for public affairs. Far more importantly, the State Department began publicizing the committee's ideas, work, and accomplishments in a series of major public speeches and reports. The goal was not only to reassure the U.S. public that the Truman administration was aware of the need to secure a stable world and planning accordingly but also to restore the public's confidence that science could serve a positive role in world affairs—and so counteract fears generated by the bomb that indelibly connected science to the pursuit of war.[36]

On September 8, less than one week after the Japanese surrender, the State Department sent the committee's executive director, Raymund Zwemer, to speak to a nationwide audience on the Columbia Broadcasting System's (CBS) *Adventures in Science* program. In speaking to "the role of science in foreign relations," Zwemer opened by quoting Truman from the April meeting of the United Nations in San Francisco: "The world has learned again that nations, like individuals, must know the truth if they would be free—must read and hear the truth, learn and teach the truth. We must set up an effective agency for constant and thorough interchange of thought and ideas. For there lies the road to a better and more tolerant understanding among nations and peoples."[37]

Zwemer went on to explain that the United States had operated a program designed to promote "cooperative projects of a scientific nature between the United States and the other American republics" since 1938. Describing several specific projects carried out by the committee in the areas of geology, agriculture, meteorology, and anthropology, he explained that these projects increased knowledge, had practical benefits for both the United States and its neighbors, and built closer relations between the scientists and people of the Americas. Zwemer noted that the committee's work was expanding beyond Latin America to include China, the Near East, and Africa and that European scientific leaders were increasingly looking to the United States to replace Germany as a source of scientific knowledge, training, and instruments. Toward the end of the interview, the CBS anchor turned to the question of atomic science: "You have pointed out many of the values of scientific interchange. What about the dangers?" Zwemer responded, obliquely: "We are discussing only the free interchange of those scientific facts available to all scientists in their professional work. Science has always been international in character. Do you know of any scientific discipline, the study of which is restricted to one nation? . . . In the words attributed to James

[36] SCC, *Activities* (cit. n. 22). The opening paragraphs of this report state: "A fact demonstrated forcibly by the war just past is that international relations based on power politics offer no real security to any nation. Mankind is therefore faced with the choice of accepting a new basis for international cooperation or of risking annihilation. No nation can longer assure its safety by isolating itself or drawing apart from the rest of the world. As Franklin D. Roosevelt wrote on the eve of his death: 'Today science has brought all the different quarters of the globe so close together that it is impossible to isolate them one from another. Today we are faced with the preeminent fact that, if civilization is to profit, we must cultivate the science of human relationships—the ability of all peoples, of all kinds, to live together, to work together in the same world, at peace.'"

[37] Harry S. Truman, Speech to the United Nations, San Francisco, April 25, 1945. Quoted in Raymond Zwemer, CBS Radio Broadcast, *Adventures in Science,* Sept. 8, 1945, SCC Speeches.

Smithson, English founder of our Smithsonian Institution over 100 years ago: 'The man of science is of no country. The world is his country and all mankind his countrymen.'"[38] Zwemer's response acknowledged that atomic physics, by virtue of military secrecy, would likely be treated differently than other fields of science and technology. He also intimated that it was unrealistic to assume that the United States would be able to retain its monopoly on atomic physics over the long-term and that the internationalism of science might serve, if carefully nurtured, to defuse the dangers of atomic energy.

Olcott Deming, the committee's executive secretary, also took to the road to promote international scientific cooperation. In a speech to Rollins College in early 1946, Deming contrasted the United Nations Security Council—"a negative instrument of international cooperation" designed "with sweeping powers to stop aggression"—with the newly forming United Nations Educational, Scientific, and Cultural Organization—a "positive instrument for the development among nations and peoples of the soil and climate essential to the growth of peace." Deming quoted the newly written UNESCO Constitution: "It is in the minds of men that the defenses of peace must be constructed." He acknowledged, as UNESCO's title suggested, that science had a special role to play in constructing those defenses. Expounding on the committee's ideas on the subject, however, Deming characterized that role in terms that went well beyond the ideas that had given rise to UNESCO. Not only would scientific cooperation promote knowledge and mutual understanding, he indicated, but it would also "encourage those who have the techniques essential to an abundant economy to share these techniques with those anxious to help themselves in overcoming poverty, disease, and hunger—the parents of ignorance, despotism and war."[39]

Deming's qualification was important. The committee believed that the real importance of scientific cooperation stemmed from its ability to promote material progress as a foundation for social and political progress. Over the course of 1946, as Zwemer and Deming canvased on behalf of legislation to support UNESCO and to expand the committee's authority to build cooperative projects around the world, they developed this logic into a tightly conceived and argued package. Zwemer's speech to the American Chemical Society (ACS) in September 1946, in Chicago, epitomizes the evolving logic. Giving a keynote address to the collected assembly of the society on Friday evening, titled "The Role of the Government in Assisting International Cooperation between Scientific Groups," Zwemer opened: "It has been rightly said that scientists are probably the world's oldest internationalists." He went on to explain that, "until recently, most scientific collaboration between countries was carried out by scientists themselves independently of their governments. In this the scientific unions and large national Congresses performed services of widely recognized value." However, "during the war it became more and more evident that science and human affairs are inseparable. Industrial progress and high living standards depend in the final analysis upon the scientific development of the fullest use of natural resources." Without this, he argued, a faltering economy would give rise to ongoing war and conflict.[40]

As a consequence, Zwemer suggested, governments were increasingly beginning

[38] Ibid.
[39] Deming, "In the Minds of Men" (cit. n. 6), 1–3.
[40] Raymund L. Zwemer, "The Role of the Government in Assisting International Cooperation between Scientific Groups: Address at the Meeting of the American Chemical Society, Chicago, Illinois," Sept. 1946, SCC Speeches.

to cooperate in the pursuit of science, and scientists were increasingly "being drawn into political and international life." Two programs stood out, in particular: first, the burgeoning United Nations specialized agencies (of which he included the Atomic Energy Commission of the UN Security Council—although it did not officially have that status and was quite different from the others—the Food and Agriculture Organization, the Provisional International Civil Aviation Organization, the World Health Organization, and UNESCO), in which government experts were working together to address key problems of social and economic welfare; and, second, the programs of the Interdepartmental Committee on Scientific and Cultural Cooperation, in which the United States was actively promoting international scientific cooperation with other countries. These programs, Zwemer argued, had value "in promoting hemispheric solidarity," "improving health conditions," "improving standards of living in other countries," and "assisting in promoting a more stable world economy." He concluded with a brief reminiscence: "Our cooperative scientific and technical projects with the nations of this hemisphere have served in a way as a laboratory experiment. They have shown us that the kind of cooperation that can win a war can also be effective in building up a friendly neighborhood of nations. I trust that we can continue to build good neighborhoods throughout the world—a world which science has made too small for war."[41]

SCIENCE AT THE UNITED NATIONS, 1946–1947

Zwemer's inclusion in his remarks to the ACS of an extensive discussion of the UN specialized agencies and Deming's promotion of U.S. legislation and scientific activism on behalf of UNESCO reflected the changing mission of the committee in 1945 and 1946. The committee's high-level membership and public visibility on the issue of international scientific and technical cooperation made the committee an important source of leadership on new and emerging problems in U.S. foreign policy for science and technology. One such problem was coordinating U.S. policy vis-à-vis the UN specialized agencies. While the committee continued to operate an expanded array of technical assistance programs, to which I will return below, the committee now also pursued three additional important roles: as a source of ideas regarding the value of scientific and technical cooperation as an instrument of U.S. foreign policy, as a site of policy coordination and leadership across the United Nations expert agencies, and as a proponent of a strong role for federal agencies other than the State Department in postwar U.S. foreign policy.

The position of the committee at the highest levels of the U.S. administration gave it a unique ability to interject ideas in emerging policy debates. Frequently, these ideas focused on the value of scientific and technical cooperation to U.S. foreign policy objectives. Foreign policy officials began to weave ideas about scientific and technical cooperation into their arguments across a range of distinct policy domains and issues. In March and April 1946, for example, U.S. surgeon general Thomas Parran met in Paris with chief health officers from around the globe at the Technical Preparatory Meeting for the International Health Conference. To be convened later in the year, the International Health Conference was designed to establish the World Health Organization as the first specialized agency of the United Nations and as a prominent exemplar of

[41] Ibid.

the value of scientific and technical cooperation to the international community.[42] At the preparatory meeting, Parran submitted a draft proposed constitution for the organization. While much of the draft took the form of legalistic prose, two sections, the preamble and the proposed functions of the new organization, read as if their phrasing had been adapted directly from writings of the Interdepartmental Committee on Scientific and Cultural Cooperation.[43] The proposed preamble read: "international co-operation and joint action in the furtherance of all matters pertaining to health will raise the standards of living, will promote the freedom, the dignity and the happiness of all peoples, and will further the attainment of peace, security and understanding among the peoples of the world." Following this, Parran identified a number of proposed functions, many of which specified forms of scientific and technical cooperation: "establish and maintain an epidemiological and statistical service for the collection, analysis, interpretation and dissemination of information pertaining to health, medicine and related subjects"; "develop, establish and promote standards"; "promote research and develop the interchange of information"; "foster professional education . . . and training in health professions, through fellowships, study tours, and exchanges of visits."[44] Although modified and extended to varying degrees by the final International Health Conference, these core ideas were carried over into the final constitution of the World Health Organization, along with the requirement that "delegates should be chosen from among persons most qualified by their technical competence in the field of health."[45] The World Health Organization was to be, first and foremost, an agency to promote international cooperation among experts in the field of health.

Similarly, in 1947, U.S. assistant secretary of state Garrison Norton welcomed delegates to the negotiation of the World Meteorological Convention with words of high praise for science as an instrument of international cooperation. Invitations to the meeting had been sent specifically to the heads of national weather services, acting in their professional capacity as meteorologists. As I have described in greater detail elsewhere, Norton explained to the delegates that scientists were uniquely morally situated for international cooperation. They shared a "global outlook," an "appreciation of international cooperation," and an ability "in the search for scientific truths" to avoid "the more uncertain and selfish motives that complicate and hinder co-operation in some fields of international interest." Scientists, Norton suggested, shared "a universal language" such that "language differences and international boundaries present no barrier to your exchange of information." Just as importantly, their scientific advances would, in Norton's estimation, contribute to the ability to solve real problems in the world, from increasing the safety of international travel to promoting improved agricultural production, which would foster "an era of progress . . . a higher standard of living for all peoples . . . [and] the aims of permanent world peace and

[42] Although the Food and Agricultural Organization, Bretton Woods institutions, and the Provisional International Civil Aviation Organization had already been established, they would not formally join the United Nations as specialized agencies until a few years later.

[43] It is unclear whether Parran ever served personally on the Interdepartmental Committee on Scientific and Cultural Cooperation. The U.S. Public Health Service, however, which he headed, was one of the principal agencies that sent technical experts abroad under the committee's auspices, and Parran would have been highly familiar with the committee's work.

[44] United Nations World Health Organization Interim Commission, *Minutes of the Technical Preparatory Committee for the International Health Conference, Held in Paris from 18 March to 5 April, 1946* (Geneva, 1947).

[45] *The Constitution of the World Health Organization* (Geneva, 1946).

prosperity."[46] Like the World Health Organization, the World Meteorological Organization became a specialized agency of the United Nations, fostering high-level scientific and technical cooperation among nations, and remains today an important international expert institution.

The rapid growth of scientific and technical cooperation at the United Nations added to the responsibilities of the Interdepartmental Committee on Scientific and Cultural Cooperation. By 1946, the committee was increasingly being asked to coordinate policy development and implementation vis-à-vis the UN specialized agencies and other UN scientific and technical programs. The need for this coordination was evident. With the development of perhaps a dozen new international expert agencies, there was a significant need to ensure that U.S. policies with respect to these agencies were consistent from one to the next. Here, the committee's work was essential, and it adjudicated a number of important cross-agency issues.

Perhaps the most important such issue was the committee's role in ensuring that federal agencies other than the State Department maintained a strong presence in postwar diplomacy, especially with regards to the UN specialized agencies. For eight years, the committee had operated its own programs on the understanding that the best way to organize technical assistance abroad was not to create a vast new technical capacity within the State Department but to mobilize the expertise of the existing technical agencies of the federal government. Now the committee worked to ensure that the United States continued along the same path with respect to the new international expert agencies. Delegations to these new agencies were to be led by the relevant technical agencies. The Public Health Service would represent the United States at the World Health Organization. The Weather Bureau would represent the United States at the World Meteorological Organization. The Department of Agriculture would represent the United States at the Food and Agriculture Organization. And so forth.[47] Over the next decades, this insistence would radically transform the institutional architecture of U.S. foreign policy. While the State Department would retain nominal control over U.S. foreign policy, nearly all the federal agencies would establish international offices in their own right, and experts from these agencies would permeate the corridors of international diplomacy.

The decentralization of U.S. foreign policy for scientific cooperation may have helped cement the presence of federal technical agencies and their expert representatives in U.S. diplomacy, but it also added to the committee's policy coordination headaches. For each of the UN specialized agencies, at least two U.S. agencies were always involved in preparing U.S. positions—the State Department and the relevant technical agency—and under some circumstances the number was much higher. How

[46] Garrison Norton, "Address of Welcome by Mr. Garrison Norton, Assistant Secretary of State" in International Meteorological Organization, *Conference of Directors, Washington, September 22–October 11, 1947* (Geneva,1947), 372–6. By 1946, F. W. Reichelderfer—who headed the U.S. Weather Bureau, helped draft Norton's speech, and would become the first president of the World Meteorological Organization—was a member of the committee and was fully aware of its work. Reichelderfer's agency had sent several experts to Latin America under its auspices. See also Clark A. Miller, "Scientific Internationalism" (cit. n. 3). Note also that there is no hint in Norton's welcome of the concerns expressed by the Acheson-Lilienthal report that scientists would have to work hard to overcome the bonds of nationalism and service to their governments in favor of internationalist sentiments.

[47] For an explanation of how this worked in practice, see Ross B. Talbot, *The Four World Food Agencies in Rome* (Ames, Iowa, 1990). See also n. 3.

would U.S. government policy be developed, communicated, and enforced across the various agencies?[48] How would appropriate representation be obtained from relevant agencies? Here, again, the committee not only served as a central site for resolving such questions but also offered in its own structure a model for solving the problem in the future.

Writing in a proposal to establish a governmental mechanism for coordinating U.S. policy vis-à-vis the UN organizations, Robert Carr, executive secretary of the Executive Committee on Economic Foreign Policy, outlined the dilemma. He began his analysis by highlighting the complexity of interdepartmental coordination using the example of worldwide cotton surpluses. Any resolution of this issue would have consequences for domestic agriculture, which fell under the purview of the Department of Agriculture. Carr proceeded to note that the Department of Commerce would be interested in its consequences for international trade and the Department of Treasury in its consequences for international balance of payments. The Department of Justice might be concerned about the formation of a cartel in the textile industry, and the Department of Labor in the impacts of the agreement on the cost of living and employment. Carr concluded by noting the interest of the Department of State, "particularly from the point of view of promoting peaceful relations with other countries."[49]

The solution to these problems, Carr insisted, was to establish "interdepartmental machinery for the formulation of policy relating to many of the fields of activity covered by existing or proposed international organizations in the economic and social fields." He noted that a few such committees already existed.[50] In the future, Carr said, many more international organizations would likely emerge and need interagency coordination. To address this concern, he went on to recommend that "the [Committee on Scientific and Cultural Cooperation] be examined with a view to revising, if necessary, its membership and its terms of reference so that it can serve for policy coordination in the broad field of social, cultural, educational, scientific, and health matters."[51]

Carr's recommendations led to the reorganization of the committee in early 1946. A February 25, 1946, organizational chart detailed the reorganized committee structure, including the newly established Subcommittee on International Organizations. This new sub-committee was charged with coordinating government policy vis-à-vis the rapidly growing array of UN organizations operating in fields other than economics and finance. The membership of this subcommittee was selected from those departments with operational responsibility for coordinating U.S. policy with respect to the key international organizations in existence in 1946, with overall coordination

[48] Today, the U.S. government would establish an interagency task force or committee to prepare a U.S. position regarding the issue. Contemporary sources point to the SCC as one of the very first such committees. See Executive Committee on Economic Foreign Policy, "Proposal for Interdepartmental Participation in the Formulation of Policy for the Guidance of United States Representatives on International Economic and Social Organizations," Jan. 23, 1946, Box #32. Subcommittee Reports, 1943–49, Entry #29, Interdepartmental Committee on Scientific and Cultural Cooperation, NARA-RG 353.3.

[49] Ibid.

[50] He listed, specifically, the Executive Committee on Economic Foreign Policy, established April 5, 1944; the National Advisory Council on International Monetary and Financial Problems, established by the Bretton Woods Agreements Act of July 31, 1945; the Air Coordinating Committee, which coordinated aviation policies across the secretaries of war, navy, state, and commerce; and the Interdepartmental Committee on Scientific and Cultural Cooperation. Executive Committee on Economic Foreign Policy, "Proposal" (cit. n. 48).

[51] Ibid.

provided by the Department of State.[52] The subcommittee met regularly to consider a variety of topics. These included how U.S. policy for international organizations could best be coordinated; provision of policy guidance on U.S. relations with international organizations (e.g., whether or not to establish a national commission for the Food and Agriculture Organization); and coordination of U.S. policy toward UNESCO, including taking overall responsibility for the establishment of a national commission for UNESCO.[53]

SCIENCE AND TECHNOLOGY FOR THE DEVELOPING WORLD, 1946–1950

The emergence of the committee as a source of high-level policy coordination and its ability to inject ideas into important new U.S. foreign policy debates with respect to the United Nations specialized agencies was mirrored in other arenas of scientific and technical cooperation. Particularly with respect to U.S. technical assistance programs, the committee's responsibilities expanded rapidly after the war. As early as 1943, the committee and the State Department had sought approval from Congress to expand the committee's range of operations beyond Latin America. A small program had been approved for China and the Near East in the final year of the war. In 1946, the committee was assigned the task of formulating and managing the technical training programs for the Philippine Rehabilitation Act and the Greece-Turkey Aid Act, the former to help reinforce democracy in the wake of Japanese occupation, the latter to help prevent the spread of communism in Europe. By the end of 1946, however, despite three years of efforts to promote expanded legislation that would cover a broad range of other countries, only the U.S. House of Representatives had acted on the matter.[54] Prospects for a broader program of technical assistance began to change that winter, however, as the extent of economic debilitation in Europe became increasingly clear and many Europeans struggled to survive harsh weather and food shortages. European economic weakness also fueled fears of renewed Communist uprisings.

[52] Subcommittee membership included: the Department of Agriculture (responsible for the Food and Agriculture Organization), the Civil Aeronautics Administration (responsible for the Provisional International Civil Aviation Organization), the Foreign Security Agency (responsible for the World Health Organization), the Department of Labor (responsible for the International Labor Organization), and the Library of Congress (responsible for UNESCO). In addition to establishing this new subcommittee, membership lists for the committee were broadened to include specific subdivisions within member agencies that carried out committee projects. See SCC, "Activities" (cit. n. 22).

[53] SCC, "Committee Organization," Feb. 25, 1946, Council History Documents. The committee had already played an important role in U.S. policy toward UNESCO. The United Nations proposed to create an Educational and Cultural Organization to foster intellectual and cultural exchange in late 1945. This new organization fell within the mandate of the committee, which was tasked with coordinating the creation of a national commission that would oversee the organization's activities in the United States. Immediately, the committee insisted that U.S. negotiators in New York insert language into the draft text to make the organization a United Nations Educational, *Scientific,* and Cultural Organization, consistent with committee's own views on the relatively greater importance of scientific and technical cooperation.

[54] CAR, "Memorandum on the Origin of the Cultural Relations Program, Its Geographic Growth, Broad Accomplishments, Major Projects, and Personnel," Oct. 22, 1943, Council History Documents; Raymond L. Zwemer, "Interdepartmental Committee on Cooperation with the American Republics," *Department of State Bulletin* 9(274) (1944): 319, Council History Documents; CAR, "Replies Received from Members of the Interdepartmental Committee in Regard to Proposed Expansion of the Program of the Interdepartmental Committee on Cooperation with the American Republics under HR-5350," 1944; and CAR, "Meeting of Long-Range Planning Subcommittee," Folder—Subcommittees, Executive Subcommittee, Project Subcommittee, 1944, Box #27, Entry #17, Subcommittee Records, 1944–49, NARA-RG353.3.

Building on the ideas that had gone into the aid programs to the Philippines and Greece, U.S. secretary of state George Marshall announced plans in June 1947 for the largest peacetime aid program ever carried out by the United States. By September, Europeans had formulated a plan for putting American aid to use, and Americans began sending money, food, and expertise to Europe in an effort to stave off an even more calamitous winter.

The Marshall Plan proved a great boon to the committee, even as it also began to raise questions about whether the committee was up to managing the rapidly expanding magnitude of U.S. technical assistance programs and how power should be shared among the growing number of agencies operating in the foreign aid business. The committee and the European Cooperation Administration (which had been established to administer the Marshall Plan) tussled over European aid but ultimately settled amicably on a division of responsibilities in which the committee opened new assistance programs in many of the scientific and technical fields that it worked in Latin America. The dispute was a foretaste of future problems, however.

Besides adding significant new committee programs in Europe, the political push in Washington to fund the Marshall Plan also had positive spillover effects for the committee's plans in other areas of the globe. State Department officials and members of the committee began work early in 1947 to establish the basis for the Marshall Plan legislation. This work continued efforts to articulate the fit between the committee's activities, the growing emergency assistance programs sought by the United States, and the goals proclaimed by the charter of the United Nations. On May 22, 1947, the State Department released a policy statement on the committee's activities, noting: "The United States is today a storehouse of scientific and technical knowledge urgently needed by other countries to quicken their economic development." Quoting Secretary Marshall from a March 3, 1947, speech to the House Committee on Appropriations, the statement argued that through programs of "scientific, technical, educational, and cultural" exchange: "We are continuing to encourage those conditions which will lead to the development of a free and democratic way of life for the peoples of the world." The statement further highlighted the mandate of Article 55 of the UN Charter: "With a view to the creation of conditions of stability and well-being which are necessary for peaceful and friendly relations among nations based on respect for the principle of equal rights and self-determination of people, the United Nations shall promote: (a) higher standards of living, full employment, and conditions of economic and social progress and development; (b) solutions of international economic, social, health, and related problems; and international cultural and educational cooperation; and (c) universal respect for, and observance of, human rights and fundamental freedoms for all without distinction as to race, sex, language, or religion."[55]

Building on this logic, the committee leadership once again set out to sell a broad program of technical assistance as an aid to expanding democracy and containing Communist advances in poorer parts of the world. They argued bluntly that the old policies of American exceptionalism, in which the United States provided an example and guiding light for others desirous of liberty, were no longer enough. Speaking to the Mid-Atlantic Conference of the National Council of Jewish Women, Deming

[55] SCC, "Policy Statement for the Guidance of Agency Members in the Preparation of Their Fiscal 1949 Budgets for 'Cooperation with the American Republics,'" May 22, 1947, Council History Documents.

observed: "The United States is now engaged as never before in the task of 'selling democracy abroad.' This is accomplished both by setting a good example at home and letting the world know about it, and by supplying U.S. goods and U.S. know-how to other peoples so they may help themselves establish that economic and social stability necessary to the survival of democratic principles and world peace." Offering the example of the committee's Latin American programs, Deming continued: "The United States cannot indefinitely 'support' democracy throughout the world with money and materials, but it can, at relatively small cost, continue to support and transfer to the minds and hands of other people the special knowledge and skills needed by these peoples to establish healthy economies in a free society."[56]

The committee's efforts finally met with success on January 27, 1948, when the Eightieth Congress approved Public Law 402, The United States Information and Educational Exchange Act of 1948 (the Smith-Mundt Act). The act authorized the U.S. government to pursue cooperative scientific and cultural projects and educational exchanges with other countries of the world as "a permanent peacetime policy." Under the new law, "scientific and technical" projects included lending U.S. technical experts to other governments, training foreign experts, exchanging data and publications, and assisting in the collection of scientific and technical information. In the State Department's proposed plans for 1950, put together in December 1948, scientific and technical projects amounted to approximately one-half of the overall initiative (for a total of approximately $13.5 million), the other half being composed of cultural and educational exchanges. State Department policy described the objective of this scientific and technical program as: "to make available to other countries the scientific and technical knowledge and skill of the United States and its citizens, in order to assist them in their social and economic development."[57]

Even with the Smith-Mundt Act, however, many in the Truman administration remained dissatisfied with the level of commitment for programs of this sort, especially in the wake of growing Soviet intransigence on a broad range of issues. Increasingly, Truman himself felt that the United States was moving into a new phase of conflict with the Soviet Union that would take place around the globe, not just in Europe. Flush from a narrow, come-from-behind electoral victory in November, he and his advisers began planning for "a bold new program" to bring American aid to the world's poorest peoples. Truman modeled his ideas on the Marshall Plan, which had proved an enormous success in Europe, and on the committee's work in Latin America. Even the language used by the president to pitch the program in his inaugural address on January 20, 1949, was borrowed heavily from Deming's earlier speeches promoting the committee's work:

> Fourth, we must embark on a bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of underdeveloped areas. More than half the people of the world are living in conditions approaching misery. Their food is inadequate. They are victims of disease. Their economic life is primitive and stagnant. Their poverty is a handicap and a threat both to them and to more prosperous areas. For the first time in history, humanity possesses the knowledge and skill

[56] Olcott H. Deming, "Summary of Remarks before the Mid-Atlantic Conference of the National Council of Jewish Women," Oct. 27, 1947, SCC Speeches.

[57] SCC, "The Scientific and Technical Program under Public Law 402," Dec. 8, 1948, Folder—SCC Memos, Box #30, Records of the Full Committee, Entry #26, Interdepartmental Committee on Scientific and Cultural Cooperation, NARA-RG353.3.

> to relieve the suffering of these people. The United States is pre-eminent among nations in the development of industrial and scientific techniques. The material resources which we can afford to use for assistance of other peoples are limited. But our imponderable resources in technical knowledge are constantly growing and are inexhaustible. I believe that we should make available to peace-loving peoples the benefits of our store of technical knowledge in order to help them realize their aspirations for a better life.[58]

The Point Four Program, as it became known, signaled the ultimate success of the committee's ideas. The commitment of the United States to sharing its scientific and technical know-how in the pursuit of social and economic progress, political stability, and international security had now become a central component of the cold war diplomatic agenda. Not surprisingly, 1949 and 1950 were extremely busy years for the committee. Many committee members were assigned to the new organization set up to plan and oversee Point Four, the Advisory Committee on Technical Assistance (ACTA), which relied heavily on their experience in developing its initial programs.[59] In May 1949, ACTA's budget request for Point Four was submitted to the Bureau of the Budget for approval and presentation to Congress. This request authorized $68 million for the Point Four Program in 1950, ten times the budget the Committee on Scientific and Cultural Cooperation had been planning to request prior to Truman's announcement.[60] The budget request followed the same basic outlines as prior committee programs had long followed in Latin America. The only major differences were that public health ($17 million) had taken the lead from agriculture ($12 million) in terms of overall support and two new categories had emerged that would have enormous implications down the road: general economic development ($5.5 million) and reclamation, hydroelectric power, and flood control ($6.5 million).[61]

The creation of Point Four ultimately also signaled the committee's end. As the size and scope of technical assistance programs expanded rapidly, an interdepartmental committee with little staff no longer sufficed to manage them. What was needed was a new bureaucracy. After 1950, at the behest of Congress, the State Department undertook a series of major reorganizations of the U.S. government's technical assistance programs. These reorganizations folded the committee into the Technical Cooperation Administration and, in 1953, the Mutual Security Agency, which would, in turn, become the Agency for International Development in 1961.

CONCLUSION

The Interdepartmental Committee on Scientific and Cultural Cooperation left an impressive legacy of scientific and technological cooperation in world affairs. During its decade of operations, the committee oversaw the dramatic expansion of scientific and technical cooperation as an instrument of U.S. foreign policy. Its wartime activities in

[58] Harry S. Truman, "Inaugural Address," Jan. 20, 1949, *Public Papers of the Presidents of the United States* (Washington, D.C., 1964).

[59] SCC, "Implementation of Point Four Program of Technical Cooperation," Feb. 18, 1949, Folder—Memoranda and Documents Distributed to the Full Committee, Box #31—Records of the Full Committee, 1947–1950, Entry #27, Interdepartmental Committee on Scientific and Cultural Cooperation, NARA-RG353.3.

[60] The 1950 Act for International Development would ultimately authorize $35 million in funding through June 30, 1951.

[61] Interdepartmental Advisory Committee on Technical Assistance, "Explanatory Book for the Presentation of the Development Cooperation Program," May 18, 1949, SCC Memos.

Latin America served as a site in which members honed a new logic connecting international cooperation in science and technology to broad U.S. policy goals of promoting international peace and security through economic development and political stability. After the war, committee members continued to develop and deploy this logic in arguing for the expansion of technical assistance programs and in their development of U.S. policies with respect to the UN specialized agencies.

With the committee's end, however, a gaping hole was left in the State Department's ability to mobilize science in pursuit of U.S. foreign policy goals. Not surprisingly, scientists were the first to note the problem. Already, by 1950, scientists were complaining that their work was getting short shrift in the Point Four Program. Contributions for economic and financial assistance, they argued, were far larger than contributions for scientific and technical exchange. Prompted by these and other concerns, Lloyd Berkner was asked in 1950 to advise the State Department on how to reenergize its commitment to scientific and technical cooperation. The product of his work is the now famous report *Science and Foreign Relations* to which I alluded earlier.

By this point, however, the die was cast. The State Department was unwilling to relinquish significant influence in the new development agencies to other federal agencies, which had the necessary reserves of scientific and technical talent. At the same time, neither Congress nor the other federal agencies were willing to see significant duplication of that scientific and expert talent within the State Department. Congress saw little need to waste money in this regard, and the agencies were hardly enthusiastic about giving back to the State Department the hard-won positions they had achieved in foreign policy as a result of their monopoly over scientific and technical expertise. The agencies decided that their victories in achieving control over U.S. policy with respect to the UN specialized agencies were enough. Thus, while federal agencies often played central roles in the 1950s and 1960s in the technical assistance programs of the United Nations specialized agencies, their influence diminished over the growing development and foreign aid programs operated by the U.S. State Department.

Scientific cooperation would never again have the same cachet at the State Department as it did during the period from 1945 to 1950. Yet that brief period of flourishing of U.S. diplomatic support for international scientific and technical cooperation left an indelible mark on world affairs. These years laid the foundation of a new form of international organization, grounded in both a new suite of international expert agencies and a new organization of the state for foreign policy. The ideas and work of the Interdepartmental Committee on Scientific and Cultural Cooperation were instrumental to that transformation. The committee didn't make science the central focal point of postwar world affairs—the atomic bomb did that—but it did contribute significantly to making scientific and technical cooperation an important element in the management of global policy.

So it has been ever since. Extensive expert involvement remains the norm in world affairs in virtually all areas of world affairs. Even the atomic scientists finally succeeded in establishing an agency for international technical cooperation in nuclear arms control. The Soviets exploded the myth of a long-term U.S. monopoly on atomic secrets by detonating their own atomic and hydrogen bombs in 1949 and 1950. In turn, Eisenhower returned "atoms for peace" to the United Nations agenda in 1953. In 1957, among the last fields to do so, nuclear experts succeeded in establishing their own UN specialized agency—the International Atomic Energy Agency—to provide

technical assistance for the development of civilian nuclear energy and to implement the safeguards provisions of the Nuclear Non-Proliferation Treaty.

It is a tribute to the enduring influence of the committee's ideas that institutions like the International Atomic Energy Agency continue to be central to the resolution of some of global society's most difficult contemporary policy problems. The awarding of the 2005 Nobel Prize to IAEA director Mohamed ElBaradei testifies that the practice of international scientific and technical cooperation remains as highly regarded in world affairs, today, over a half-century later, as it did in 1946–1947. In considerations of global security, the postwar goal of international political control over atomic weapons remains a distant pipe dream. However, the world still pins many of its hopes for a future free from the scourge of nuclear war on international cooperation among nuclear experts.