Crypto-Convergence, Media, and the Cold War: the Early Globalization of Television Networks in the 1950s

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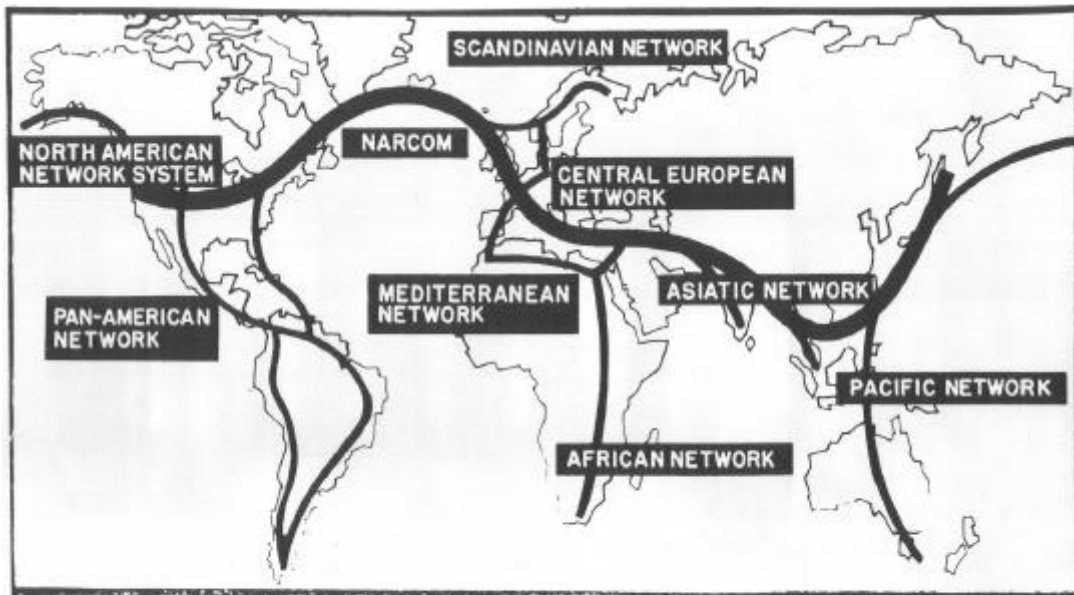

FIGURE 5

PLATE 01: The UNITEL Global TV---Telecommunication Network Plan, 1952[1]

The concept of global television networks is usually considered to be a recent phenomenon, emergent in the last years of the Cold War. Seen as an outgrowth of the expansion of the communications satellite, the worldwide plunging costs of television set ownership, the recent global cross-investments involving media industries, and the collapse of the superpower conflict, global television networks represent, for most observers, a relatively new idea.

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[1] "The UNITEL Relay Network Plan," October 1952, Jackson, C.D.: Records, 1953-54 (hereafter C. D. Jackson Records), Box 6, Folder S, Dwight D. Eisenhower Presidential Library, Abilene KS (hereafter Eisenhower Presidential Library.)

This paper, based completely on archival research[2] conducted in the National Archives, the Hoover, Truman, and Eisenhower Presidential Libraries, and the Public Records Office of the United Kingdom, argues that the **idea** of global television networks is not new. Rather, the idea of global TV networks are a direct product of the dawn of the Cold War. Furthermore, the idea of global TV networks was spurred in large part by the global postwar interest in television; the fascination within the United States over the growth of coaxial cable and its role in networking American television; and most of all, by visions of military security, psychological warfare, and concerns about the global image of America.

The argument herein that the **idea** of global television networks, converging a number of electronic communication technologies, simultaneously reaching worldwide audiences, and delivering content laced with political ideology, is an idea that is fifty years old. The evidence for the relative antiquity of this idea—at least shading toward antique for historians of electronic media—is borne out by the elaborate planning, engineering, lobbying, world travel, and rhetoric formulated by the advocates of global television networks a half-century ago. Some of these advocates inhabited the corridors of power in Washington DC: State Department, Defense Department, the various intelligence agencies, and several influential U.S. Senators. Still others were found in the ranks of American business, while yet others still were found overseas, scattered across the globe: Japan, Turkey, United Kingdom, Latin America, and the new nations of the crumbling colonial world, first tasting their political independence (and learning that political self-determination, on its own, brought relatively little leverage in a complex postwar world system—unless, of course, they could find a way to leverage the Cold War to their own advantage. Some succeeded in this leverage, many more failed with tragic results.) Although American interests dominated this quest for global TV networks, the United Kingdom had its own distinct vision, which became operationalized around the Coronation of Elizabeth II. And, of course, television behind the Iron Curtain was, from a Western perspective, a great unknown to be feared.

No matter the nation, no matter the institutional fit, and no matter the ideology, one thing was certain in the early 1950s: they were all working on Global TV.

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[2] This paper is from a larger work in progress, and I am farther along in my primary research than I am in reviewing the secondary literature. However, up to now I have not found **any** published study dealing with the topic of this paper. One important archival source for this paper is the Henry Holthusen Collection at the Herbert Hoover Presidential Library, West Branch IA. The Holthusen papers were deposited in 1990; I read them in March 2002. The archivists at the Hoover Library believe I am the first researcher to work with the Holthusen collection. If true, this is a sad indictment of media history. For the guide to the Holthusen collection, see: http://www.ecommcode2.com/hoover/research/historicalmaterials/other/holthuse.htm

PLATE 02: Photomontage, *Toronto Star*, 1953[3]

As early as 1946, the activities of the emergent United Nations (UN) had sparked dialogue about the need for international distribution of television news material. Secretary of State James Byrnes believed opening the meetings of the UN Security Council and other UN commission meetings to the press was a "revolutionary step" but lamented the lack of UN budget and global infrastructure for rapid and complete dissemination of press, radio, and television coverage.[4] The rapid rise of Cold War tensions, coupled with a perception that the United Nations Educational, Scientific, and Cultural

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[3] this newspaper clipping and accompanying article (*Toronto Star*, 1953, date uknown, Sunday "weekly" section) may be found in Papers of Henry F. Holthusen (hereafter Holthusen Papers), Box 6, folder "Television: Worldwide Network Plan Clippings, 1950-58 and undated," Herbert Hoover Presidential Library, West Branch IA (hereafter Hoover Presidential Library.)

[4] Byrnes to Truman, 19 July 1946, Truman Presidential Papers—Official Files, Box 533, Folder OF 85-U, Harry S. Truman Presidential Library, Independence MO (hereafter Truman Presidential Library.)

Organization (UNESCO) was becoming politicized in a manner inimical to American interests, meant that American attention to global television quickly turned to other vistas. These new vistas would be positions hardened by superpower conflict, arms races, quests for strategic security, conflicts from Berlin to Korea, and psychological warfare.
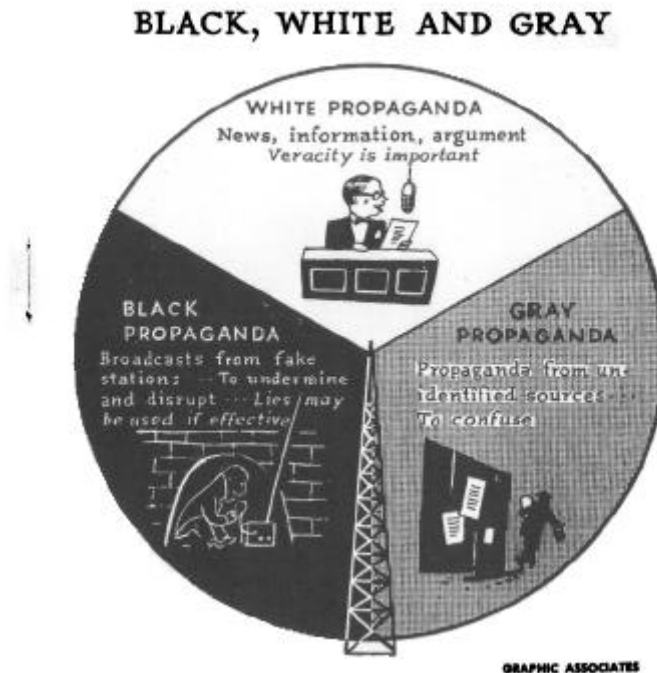
BLACK, WHITE AND GRAY

WHITE PROPAGANDA
News, information, argument
Veracity is important

BLACK PROPAGANDA
Broadcasts from fake stations To undermine and disrupt Lies may be used if effective

GRAY PROPAGANDA
Propaganda from unidentified sources To confuse

GRAPHIC ASSOCIATES

PLATE 03: Varieties of American-produced Cold War propaganda, 1951[5]

For several reasons, television clearly fell into the realm of white propaganda. The very large investment costs for both producers and users, the small number of television stations operable in a given geographic location due to frequency assignments and engineering practices then in use, and the near-impossibility of misdirecting the location of a television transmitter from engineers working in intelligence agencies all meant that television could be neither gray (unattributed) nor black (falsely identified) broadcast propaganda. Even in Berlin, the first hotbed of postwar television superpower conflict, American policymakers quickly realized that television had to be "white" in its message.[6]

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[5] Saul Hadover and Harold Lasswell, ***Psychological Warfare*** (New York: Foreign Policy Association, 1951), p. 21.

[6] For an analysis of postwar television in occupied Germany, see James Schwoch, "Cold War Telecommunications Strategy and the Question of German Television," ***Historical Journal of Film Radio and Television*** 21:2 (Spring 2001), pp. 109-121.

Therefore, in the realm of psychological warfare, television was quickly recognized to be different in its potentials, and flexibility, from radio, print, and film. These other three media all had enough flexibility in their systems of production, distribution, and reception to allow their applications in all three shades of propaganda. Furthermore, all three were generally applicable in both targeted situations as well as worldwide strategies of psychological warfare. Last—but certainly not least—radio, print, and film were, technologically speaking, all more or less operating on a single universal technological standard. Radio sets picked up transmissions no matter the country or region of signal origin.[7] Film prints crossed borders and were screenable to audiences anywhere. Print propaganda needed an army of language experts, but that army was easily assembled. Television had no similar conditions of universal global standards, and the 1948-1952 "TV Freeze" by the Federal Communications Commission (FCC) had the unintended effect of derailing early efforts by American diplomats to impose the American (NTSC) television technology standards on Europe.[8]

This led attention to turn toward global distribution systems whereby the world's continents might be—somehow—electronically linked. Once a signal crossed continents, it could then be converted for rebroadcast (or further distribution) consistent with a given nation or region's technical systems for television transmission. While the circulation of TV programs via kinescope and other filmed material was already underway, these systems of film-based TV program distribution did not offer the possibilities of liveness, of synchronized viewing by large audiences spanning an entire nation, region or continent, and were subject to the whims of local programmers. The quest, then, clearly pointed to new electronic distribution technologies whereby television might span continents and thereby play its own vital role in psychological warfare.

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[7] There are, of course, some exceptions. National Socialist Germany had introduced the fixed-frequency set—basically a set that was not tunable—as a low-cost radio set for the masses that could not be tuned to anything other than Nazi stations. The Union of Soviet Socialist Republics, and to a lesser extent some areas of Eastern Europe, still made extensive use of wired loudspeakers rather than tunable sets—a majority of Soviet listeners were on wired loudspeakers rather than tunable sets until about 1970. The United States, United Kingdom, and France introduced an extensive FM radio system into occupied Germany, in part to counter the Nazi experience, in part to counter Soviet propaganda (on this point see Schwoch, "Cold War Telecommunications Strategy.") But the general observation holds.

[8] State Department to Van Der Pol (Geneva embassy), November 14, 1949, Record Group (hereafter RG) 59, General Records of the Department of State (hereafter State), 574.Study Group/11-1449, National Archives and Records Administration, Washington DC (hereafter NARA.)

PLATE 04: Headline story, *Tele-Tech* trade newsletter, 1952[9]

The standard distribution technology for broadcast networks, since the early 1920s, was wire. The American radio networks emerged via experimentation with both telegraph and telephone wireline distribution. American Telephone and Telegraph (ATT) had also, in the mid-1940s, developed and disseminated coaxial cable, a large-trunk wire system that could be used for carrying many telephone calls, multiplexing a number of different kinds of electronic communication systems, and most important of all, for networking television. However, other distribution systems for networking had also emerged. For non-synchronous networking (where simultaneous reception by large audiences was not crucial) various forms of transcription recordings, passed on or "bicycled" from station to station, were one alternative. These transcriptions could be on disc (for radio) or on film (for television.) Cheap, effective, and easy to use, non-synchronous networking had its drawbacks: no large-scale simultaneity, and no "liveness" crucial for blockbuster events or breaking news. While it was true that with short-wave radio, vast audiences had been reached with a small number of transmitters since the late 1920s, the larger bandwidth of a television signal meant that a short-wave type application for global television networking was technically unfeasible.

In the 1930s, however, a wave-based system of synchronous networking emerged. Simultaneous with the emergence of frequency modulation (FM) radio broadcasting, experiments began in using higher frequencies in the electromagnetic spectrum—commonly known as microwaves—to distribute electronic communications in a network system. A microwave relay chain was established in New York State in the 1930s to form a FM radio network. Common carriers such as ATT experimented with, and later built, microwave relay stations for the distribution of long-distance phone service, moving American telephony away from a fully wire-based distribution system into an integrative

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[9] *Tele-Tech*, December 1952; found in Holthusen Papers, Box 10, Folder "Television: Worldwide Network Plan—Printed Matter," Hoover Presidential Library.

technical system of wires and microwaves. Microwave network relay also had the requisite bandwidth for multiplexing a number of different applications of electronic communication, not just radio broadcasting and telephony. Finally, microwave relay also had the requisite bandwidth to distribute a synchronous television network.

Microwave relay networks became the distribution technology undergirding a Cold War vision of global TV. Before turning to the conception, planning, and attempts at building these networks, however, this study first finishes setting the context for this 1950s vision of microwave relay global TV networks. Totally cast in the context of the Cold War, envisioned as weapons for psychological warfare, and intended to serve as one of the vehicles for freedom's destiny—rolling back and crushing Communism—the idea of microwave global TV networks needed its advocates. Among the most strident stentors for these networks were several influential U.S. Senators.

PLATE 05: Senator Karl Mundt's "Vision of America" Global TV plan, 1950[10]

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[10] **Baltimore Sun**, 19 November 1950; found in RG 59 State, Records Relating to International Information Activities, 1938-1953, Lot # 53D11, Box 88, folder "Television," NARA.

PLATE 06: *Television Opportunities* trade newsletter, 1953[11]

PLATE 07: U.S. Senators Speak out for Global TV, 1953[12]

Senators Karl Mundt (R-SD) and Bourke Hickenlooper (R-IA) led the charge for global TV networks in the 1950s. Mundt, the author of 1948 legislation establishing the Voice of America (VOA), was among the first elected American politicians to extol the virtues of a VOA-type approach to television. In 1950, Mundt proposed a plan to fund the construction of large-screen television projection systems, centrally located, in cities, towns, and villages across the world. [13] Stressing that the United States needed to augment its "know how"

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[11] *Television Opportunities*, July—Aug 1953; found in Holthusen Papers, Box Folder "Television: Worldwide Network Plan—*Television Opportunities* 1953-55 and undated," Hoover Presidential Library.

[12] *Television Opportunities*, July—Aug 1953; found in Holthusen Papers, Box Folder "Television: Worldwide Network Plan—*Television Opportunities* 1953-55 and undated," Hoover Presidential Library.

[13] *Congressional Record* 96:110, 5 June 1950, pp. 8130—8139.

and "hear how" with "see-how", Mundt's "Vision of America" predicted that such a TV system would make a star of "every 4-H youth" in the United States. He also noted that the 1948 Smith-Mundt Act already provided all of the necessary legal authorization to fund such a TV project. Above all other considerations, global TV was needed to continue waging the ideological conflict of ideas through a medium that would reach beyond national leaders and opinion elites. While radio, film, and print had begun to make such inroads, Mundt saw TV as the most favorable medium of all to reach beyond such leaders and elites and thereby communicate directly with the masses of the world.

Hickenlooper had a deep interest in the effectiveness of government-run international information activities, and was a strong believer in the necessity of waging full-strength psychological warfare. His long tenure as a member of the Senate Foreign Relations Committee had given him intimate knowledge and influence regarding American foreign policy, and he chaired subcommittees specifically tasked with assessing the effectiveness of government-run international information activities. In 1953, Hickenlooper was the principal sponsor of Senate Joint Resolution 96, calling to strengthen the foreign relations of the United States through greater attention to international telecommunications. S. J. 96 noted that Hickenlooper's subcommittee had already concluded "the feasibility of linking the Atlantic nations and much of the non-Communist world in vast television networks is established."[14] Calling for a Commission on International Telecommunications, the tasks of the proposed commission included studying possibilities for the expanded use of television in carrying out government-run international information activities.

Both Hickenlooper and Mundt had already established their ***bona fides*** as experts on government-run international information activities in the late 1940s, at the dawn of Cold War hostilities. As Republicans, both were more or less immune from the damaging attacks of Senator Joseph McCarthy (R-WI) on individuals involved in American foreign policy and thus could operate with impunity in advocating increased government psychological warfare. Finally, both were, in the vernacular of the day, Cold War hawks. All these factors gave both Senators a large degree of influence. Mundt and Hickenlooper had at least one more thing in common: a close working relationship with Henry Holthusen. Holthusen—whom shall be discussed at much greater length a bit later in this paper—was the link between the Senate and the private investors interested in building microwave-based global TV networks. Beyond Holthusen, other American industrialists of the era had their own vision of global networked TV.

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[14] S.J.Res. 96, 27 June 1953, 83rd Congress, 1st Session.

PLATE 08: "The Voice and Vision of America": David Sarnoff, **Look**, 1950[15]

The man who, as a lad in 1912, had claimed to be the first on American soil to receive a wireless distress signal from the sinking luxury liner **Titanic** --and parleyed that claim up the corporate ladder to climb into the Chairmanship of the Radio Corporation of America (RCA)--was transformed yet again during the Second World War. He became a General. General Sarnoff (preserving rank and title through his postwar enlistment in the Reserve Corps) now spoke not only the language of technological progress and ever-expanding frontiers of communication, but also the language of national security. Sarnoff's first Cold War technosecurity strike was Ultrafax. Pitching Ultrafax over different months in 1948 to FCC Chairman Wayne Coy, Secretary of the Defense James Forrestal, and President Harry Truman, Sarnoff painted Ultrafax as the ultimate Cold War international telecommunications system.[16] Sarnoff assured Truman that the RCA Ultrafax system, recently tested, would have a transmission rate when completed of a million words per minute, and could provide a wide range of telecommunication services: telegraph, telephone, television, teleprinter, and weather information.

Installed on fleets of transoceanic aircraft—both commercial and military—Ultrafax also had a strategic security component. Sarnoff believed that Ultrafax could include

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[15] "Our Next Frontier….Transoceanic TV," **Look** 12 September 1950; found in Holthusen Papers, Box 6, Folder "Television: Worldwide Network Plan Clippings 1950-1958 and undated," Hoover Presidential Library.

[16] Sarnoff to Coy, 22 December 1948; Sarnoff to Forrestal, 30 November 1948; Sarnoff to Truman, 30 November 1948; Sarnoff, "Outline of Proposal", 30 November 1948; all in Truman Presidential Papers, WHCF: Confidential File, State Department Correspondence File, 1948-49, Box 39, Folder "State Department, Correspondence, 1948-49 [5 of 6…], Truman Presidential Library. The description of Ultrafax and its potential for television in the main text of this study, unless otherwise noted, is from these documents.

an airborne radio relay system (that) could serve as a constant watchman to intercept guided missiles that might be traveling in our direction…(and) detect and furnish information about enemy projectiles thousands of miles from our borders… As a result, counter measures could be taken which would locate and destroy the missiles before they could reach the United States…from the standpoint of secrecy and national security, such a system would have the further advantage that the enemy need not know of the incidental, although very important, military significance of the aircraft which appeared to be engaged only in transport or commercial aviation. Thus the system could be world-wide in scope.[17]

There is so much that is astonishing about Sarnoff's statement that it is hard to know where to begin. Although not quoted above, Sarnoff argues (to the FCC) that RCA Ultrafax is superior to Westinghouses' proposed Stratovision plan. Stratovision merely envisioned television transmitters in airplanes circling above U.S. cities. Ultrafax includes television, adds a wide range of additional telecommunication services, and is not just domestic but global. In a vision eerily prescient of arguments for strategic missile defense--ranging from ABMs to "Star Wars" to current (2002) policy of the Bush Administration--Sarnoff paints Ultrafax as the watchman of national security to guard against missile attack. This vision also predates the establishment of North American radar defense in the Arctic, such as the DEW Line and NORAD.[18] This statement comes in 1948, almost a decade before Sputnik, and is based on extrapolating out a future vision of the postwar development of German V-2 rockets. The V-2 had, during the war, achieved a typical maximum range of less than 300 miles, and never came close to transcontinental range. The implicit references to the redundancy of the system (placed in many airplanes) combined with the suggestion that the deployment of Ultrafax on commercial air transport helps protect the secrecy of Ultrafax brings up a chilling vision of surreptitiously hiding Ultrafax literally under the seats of clueless transcontinental travelers. Presumably the Ultrafax system is sufficiently redundant to avoid complete destruction by the enemy at the onset of general hostilities. The collateral damage to innocent and unwitting transcontinental air passengers is the kind of collateral damage that is simply one of the many tragedies of war.

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[17] Sarnoff to Truman, 30 November 1948 ; "Outline of Proposal", 30 November 1948 (see note immediately above.)

[18] On the historical trajectory of American strategic missile defense, see **Strategic Defense**, Office of Technology Assessment (Princeton: Princeton University Press, 1986).

TV Can Tell the WORLD

By SENATOR KARL E. MUNDT
As told to KATHERINE KIRKBRIDE

An international television network is possible very soon, and it could mean a new era for every man on earth. People in every land will really see our way of life, as vividly as we'll see theirs.

PLATE 09: The message continues—Senator Karl Mundt, 1958[19]

TELE-TECH
RADIO-TELEVISION-ELECTRONIC INDUSTRIES

O. H. CALDWELL, Editorial Director ★ M. CLEMENTS, Publisher ★ 480 Lexington Ave., New York (17) N. Y.

Let's Get Action on **TRANS-ATLANTIC TV !**

PLATE 10: A Call to Action, 1952[20]
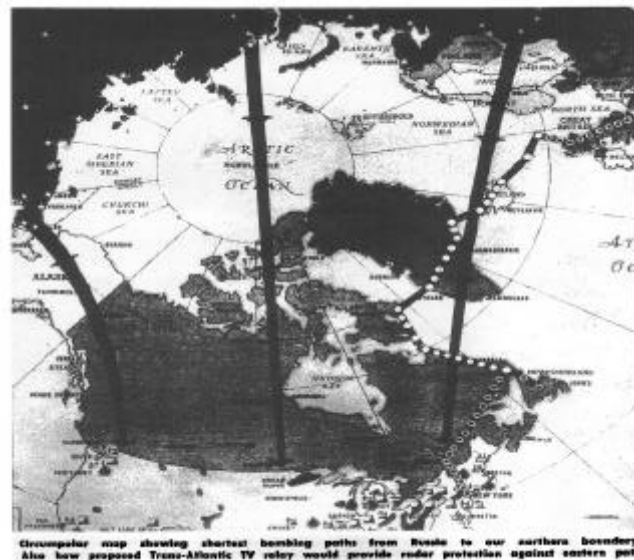
Circumpolar map showing shortest bombing paths from Russia to our northern boundary. Also how proposed Trans-Atlantic TV relay would provide radar protection against eastern path

PLATE 11: Global TV networks and Soviet strategic weapons: how a Trans-Atlantic TV microwave relay network enhances American national security[21]

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[19] Mundt, "TV Can Tell the World," **THINK** May 1958; found in Holthusen Papers, Box 6, Folder "Television: Worldwide Network Plan Clippings 1950-1958 and undated," Hoover Presidential Library.

[20] **Tele-Tech**, October 1952; found in Holthusen Papers, Box 6, Folder "Television: Worldwide Network Plan Clippings 1950-1958 and undated," Hoover Presidential Library.

CAN *Television* BE USED EFFECTIVELY TO *Teach* NAVAL AIR RESERVISTS?

PLATE 12: TV and Military Psychology: A 1950 Study of Educational TV[22]

PLATE 13: New Media, 1952: NBC's Dave Garroway models the Walkie-Lookie[23]

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[21] ***Tele-Tech***, October 1952; found in Holthusen Papers, Box 6, Folder "Television: Worldwide Network Plan Clippings 1950-1958 and undated," Hoover Presidential Library.

[22] "Training By Television: The Comparative Effectiveness of Instruction by Television, Television Recordings, and Conventional Classroom Procedures," Fordham University Department of Psychology, Human Engineering Project 20-E-5a, contracted research report N-7onr 47062 for U.S. Navy Special Devices Center, NAVEXOS P-850-2, 1950.

[23] ***Radio Age***, July 1952, front cover photoimage. I think this is Garroway—looks like him to me.

PLATES 14 & 15: Print ads for the arrival of coaxial cable in Texas, 1952[24]

The half-dozen plates provided above all connote various aspects of the technological environment spurring the dialogue about global television in the early 1950s. Television was seen as a potential tool for mass education—and, of course, propaganda—and studies were already underway to determine how to best exploit this potential. The linkage of television to the Cold War included strategic security issues, as exemplified by the vision of Sarnoff for Ultrafax, by the call for action on Trans-Atlantic TV, and by the interesting map—predating NORAD and the DEW Line—depicting a transatlantic microwave relay TV network as part of an electronic fortress for North America.

Additionally, this discourse about global TV networks was fomenting at precisely the same time that new innovations in domestic American television were common news items in the trade press as well as the popular press. The FCC had recently ended its four-year freeze on the issuance of new construction permits for American television stations. Stations holding construction permits prior to the Freeze were now firing up and telecasting programs. TV set purchases were skyrocketing. And, although little remembered today, the growth of the ATT coaxial cable, making American network television a reality, was exciting news. Therefore, the discussion of global television in 1950s American society was contextualized and framed from a host of issues: Cold War; new technology; national security; and the rising dominance of the postwar consumer society, a society of nuclear families nationally conjoined by the new technology of network television. It is, in retrospect, completely unsurprising that these frames and contexts within American society and culture were spilling

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[24] **Radio Age**, July 1952.

beyond their borders into discussions and ideas about global television networks.
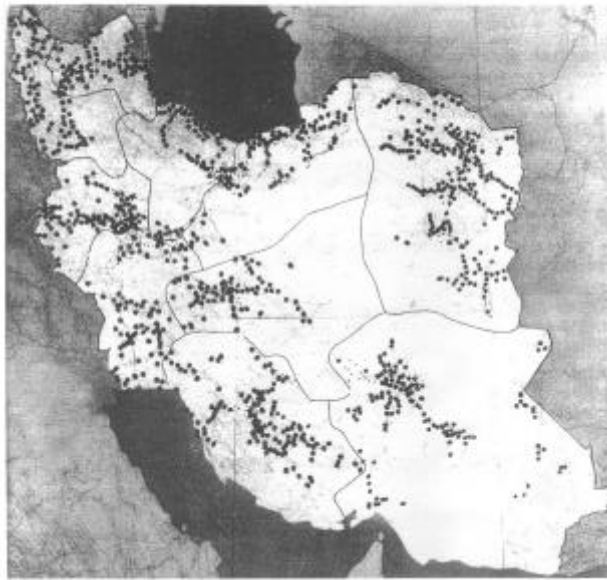

PLATE 16: State Department/ IIA Motion Picture Mobile Unit Activity in Iran, 1951-52 (fourteen months of activity)[25]

The State Department had continued its pursuit of propaganda activities after the Second World War, through its International Information Activities (IIA) branch. While radio was now operating through a quasi-independent agency, the Voice of America (VOA), print, film, exhibits, and lectures continued as an IIA activity until the formation of the United States Information Agency (USIA) in 1953. USIA took over all State Department information activities, and became the overt branch of American psychological warfare (with covert activities going to the intelligence community.) Plate 14 demonstrates the difficulties of disseminating moving images in offensive psychological warfare. Each dot on this map of Iran depicts a visit from an IIA mobile motion picture unit over a 14 month period. While USIA mobile motion picture units continued to operate throughout the Cold War, it is apparent that global television networks—if built, globally disseminated, and then successfully programmed—would be much more efficient in quickly disseminating audiovisual materials to world populations.

[25] "International Information Administration 10th Semiannual Report of the Secretary of State to Congress on the International Information and Educational Exchange Program, " July—December 1952, in Papers of Bourke B. Hickenlooper, Senate, Foreign Relations Committee (hereafter Hickenlooper Papers—Senate—Foreign Relations), Box 88, Folder "Information Program Subcommittee, International Information Administration, General, 1953," Hoover Presidential Library.

Henry Holthusen was fully aware of these challenges, as he had long advised the State Department on international information activities. Who was Henry Holthusen?[26] Born in 1894 and trained as a lawyer, Holthusen retained a private practice from the 1930s until passing away in 1971. An appointment as U.S. Minister to Czechoslovakia during the Hoover Administration failed nomination procedures in the U.S. Senate; however, Holthusen returned to American diplomacy in 1947 as a consultant to the Senate Foreign Relations Committee. Tasked with assessing information activities, Holthusen toured 23 European nations and continued to serve as a committee consultant through the 1950s at the request of Mundt and Hickenlooper, eventually touring the entire globe. In 1950, Holthusen became a leading advocate of the globalization of television as a component of Cold War psychological warfare. Holthusen drafted several speeches for Hickenlooper and Mundt on this topic.

In his private legal practice, Holthusen forged a relationship with William Halstead, a broadcast engineer who had been involved in constructing the FM microwave relay network in New York State. Holthusen became a linchpin connecting Halstead with both the State Department and the Senate, and working together forged business plans for the construction of global TV networks based on microwave relay stations. Through a corporation called UNITEL, Holthusen and Halstead sought funding for their plan from a number of sources, ranging from U.S. government Cold War development programs such as the Marshall Plan and Point 4 to private investors worldwide.

The UNITEL plan had a number of components for various regions of the world, such as NARCOM for its transatlantic link. UNITEL envisioned a vast engineering project that involved huge microwave relay towers strategically placed on mountaintops, islands, and rimming the oceans of the world. These plans for large microwave relay stations included locating these stations in a relay chain such that no station was more than 300 miles from its nearest neighboring station—a plan that did in fact allow for bridging the Atlantic (see Plates 19, 20, 23 and 24 below.)[27] UNITEL was a massive engineering project, and if it had in fact been built to completion, would have surely been considered one of the largest engineering projects ever undertaken in entire span of world history. Microwave relay stations were required in harsh and demanding terrain, including mountaintops, remote islands, and glaciers.

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[26] The brief biography of Holthusen in this paragraph is based on the finding guide to the Henry Holthusen collection in the Hoover Presidential Library at:
http://www.ecommcode2.com/hoover/research/historicalmaterials/other/holthuse.htm

[27] For the sake of brevity, I am giving herein a thumbnail sketch of UNITEL technology and the global distribution of microwave relay towers. I have many more documents describing the situation, and plan to give a more thorough analysis and documentation in my book project.
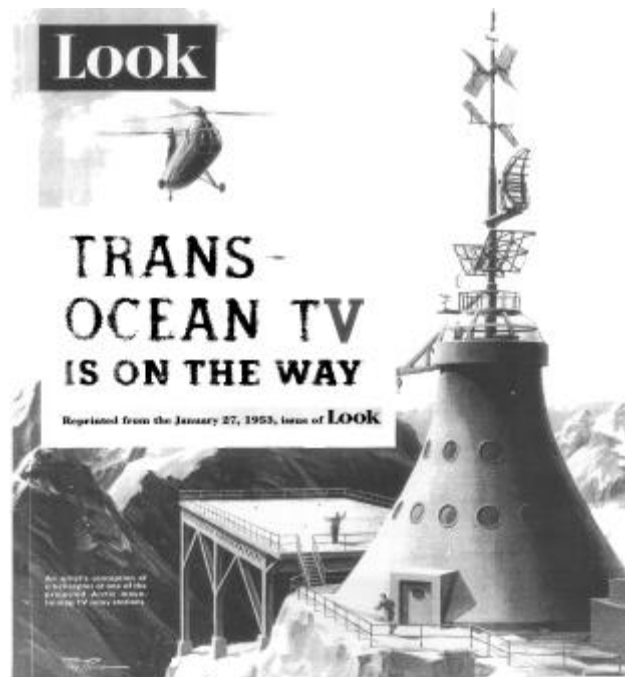
PLATE 17: Global TV microwave relay networks will "secure the high ground" by conquering mountains and leapfrogging oceans: *Look*, 1953[28]

Plate 17 above, taken from an article in *Look* magazine, offers one artist's depiction of what it meant to build a UNITEL microwave relay station. The scale (as indicated by a human figure on a helipad) is awesome. However, as inferred earlier in this paper, the UNITEL plan for building microwave relay stations in challenging terrain is oddly prescient of the actual deployment of the DEW Line and NORAD radar defense system later in the 1950s.

UNITEL saw its system as offering global TV network capabilities, and always prominently mentioned this capability in its business plans. This TV network capability was invariably painted in the Cold War rhetoric of Freedom, Democracy, Education, Science, and Culture, noting that television had a paramount role to play in promoting these values in the face of Soviet propaganda. However, UNITEL envisioned a vast range of services beyond television: telephony, telegraphy, education, transit communications, local fire and safety communications, agricultural applications, and business communications. Labeling this strategy as "wideband linkage," UNITEL was, in

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[28] *Look*, 27 January 1953, reprint, cover image.

this sense, an early vision of—well, of broadband convergence. UNITEL was the Crypto-Internet.
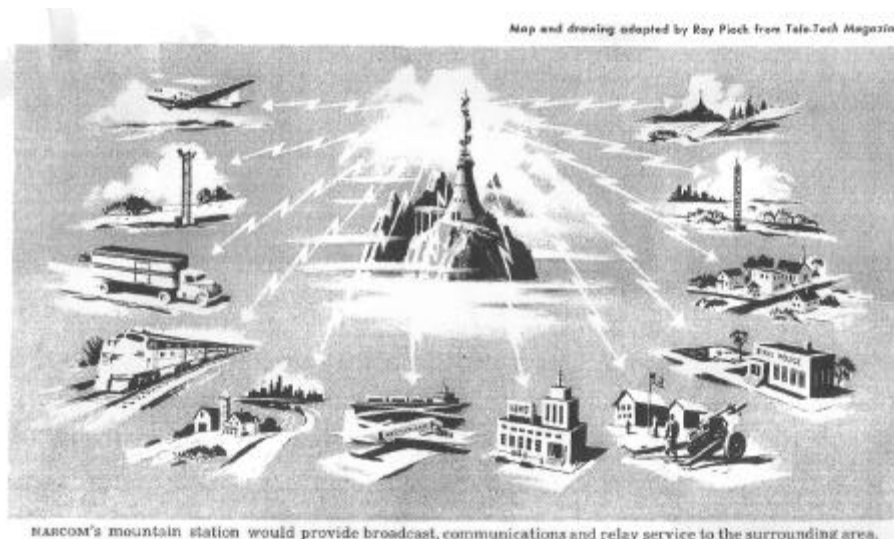
PLATE 18: UNITEL—NARCOM "wideband linkage" circa 1952 (or, "broadband convergence" circa 2002): TV, radio, aviation, rail, trucking, agriculture, education, public services, and business communication via microwave relay[29]

PLATE 18a: Another UNITEL—NARCOM view of wideband linkage[30]

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[29] *Look*, 27 January 1953, reprint, illustration.

[30] "The UNITEL Relay Network Plan," October 1952, C. D. Jackson Records, Box 6, Folder S, Dwight D. Eisenhower Presidential Library.

PLATE 19: Five possibilities for transatlantic TV networking, 1952: 1) microwave—VHF combination 2) scatter-bounce transmissions in the troposphere 3) express airplane shuttle relay [the RCA Ultrafax system] 4) laying of underwater coaxial cable   5) aircraft carriers and Stratovision [31]
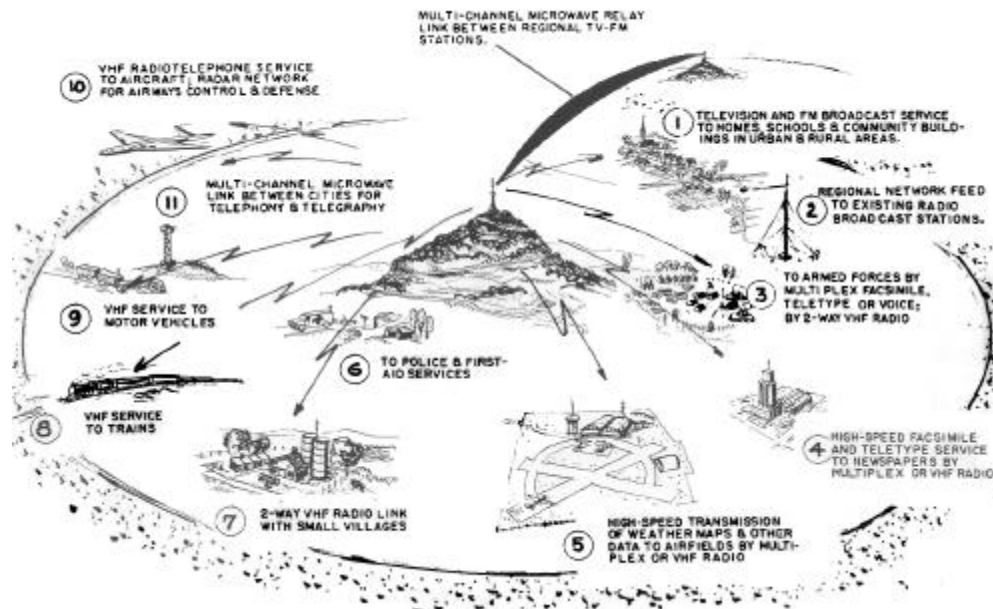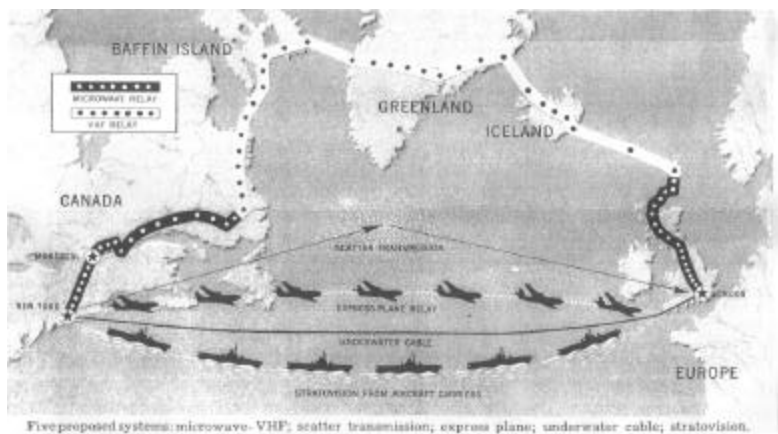
UNITEL Chief Engineer William Halstead argued that of the five known possible technologies for early 1950s global TV networking, the UNITEL system was superior. While bouncing a TV signal off the troposphere was possible, changing atmospheric conditions and the sunspot cycle had already proven problematic in many areas of the spectrum, and bounce-signal would be no different. The laying of a coaxial cable, while possible, would require repeaters, inspections, cable ships and landing rights—and the bandwidth available on coaxial was less than that available on microwave relay.[32]

PLATE 20: North Atlantic Relay Communications (NARCOM): the chain[33]

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[31] *Look*, 27 January 1953, reprint, illustration.

[32] Halstead, "New York—London Television Microwave Link vs. Coaxial Cable," 27 May 1952; found in Holthusen Papers, Box 3, Folder "Medium-Wave Radio 1951-60 and undated," Hoover Presidential Library.

[33] Source unknown; found in Holthusen Papers, Box 3, Folder "Medium-Wave Radio 1951-60 and related," Hoover Presidential Library.
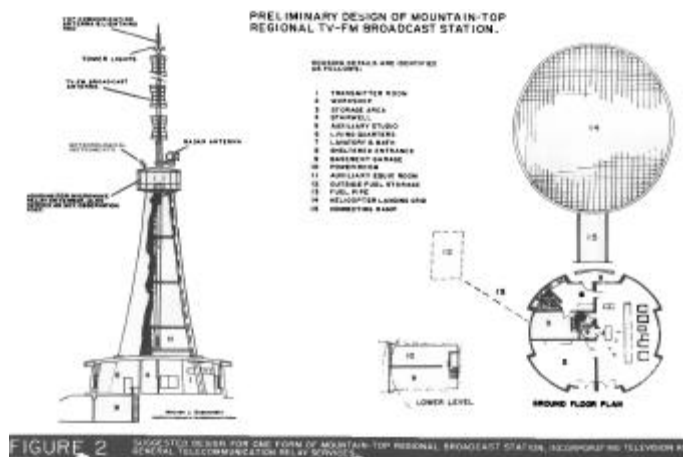
PLATE 21: The UNITEL—NARCOM Mountaintop Relay Station[34]
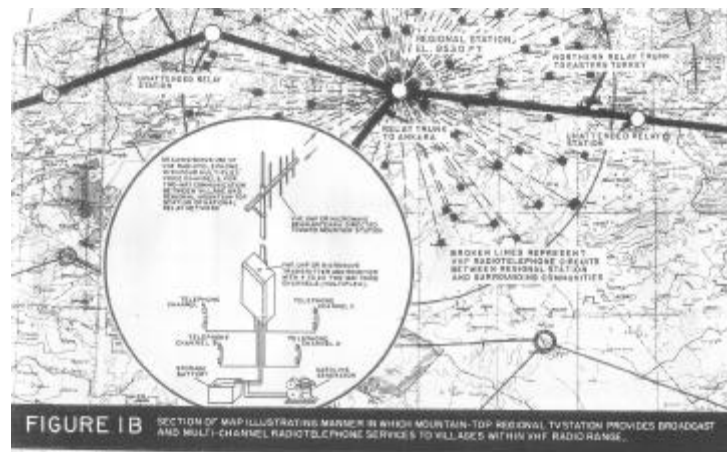
PLATE 22: Global TV for Turkey, 1951: Map and schematic[35]

As inferred by Plates 21 and 22, the UNITEL plan was complex, involving different sizes of relay stations and state-of-the-art broadcast engineering. While

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[34] No date, probably 1952; found in Holthusen Papers, Box 10, Folder "Worldwide Network Plan—Printed Matter," Hoover Presidential Library.

[35] "A Report on Radio Broadcasting and Intercity Telecommunication Services in the Republic of Turkey, With Recommendations for Future Development, Including the use of Television and Microwave Relay Network Facilities," (hereafter "1951 Turkey Telecommunication Services Report"), prepared by Henry Holthusen, William S. Halstead, and Walter Duschinsky, in Holthusen Papers, Box 11, Folder "Worldwide Network Plan—Turkey Holthusen Report, 1951, Printed Copy," Hoover Presidential Library. This is actually a bound volume running about 300 pages in length.

never precise about costs, the transatlantic span was estimated to need over $30,000,000 in funding to become a reality.
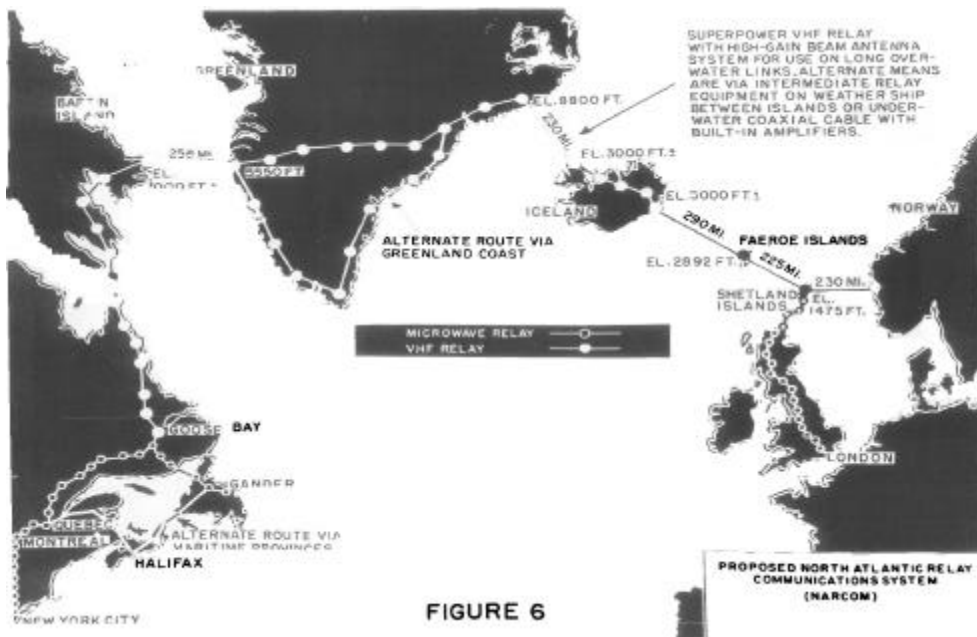
PLATE 23: NARCOM and the "Greenland Route" 1951-52[36]
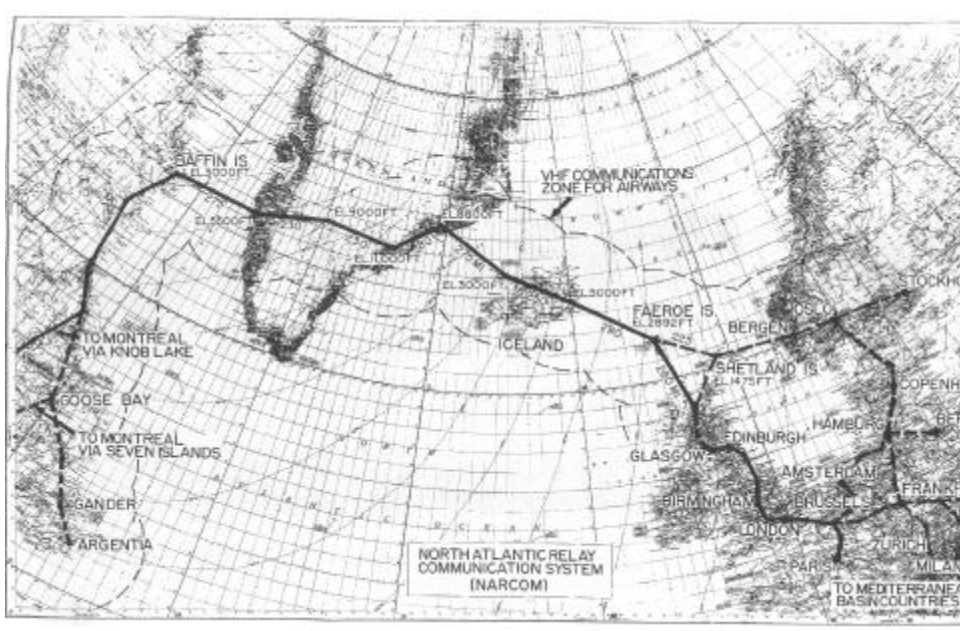
PLATE 24: Spanning the North Atlantic, 1951-52[37]

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[36] No date, probably 1952; found in Holthusen Papers, Box 10, Folder "Worldwide Network Plan—Printed Matter," Hoover Presidential Library.

[37] No date, probably 1952; found in Holthusen Papers, Box 10, Folder "Worldwide Network Plan—Printed Matter," Hoover Presidential Library.
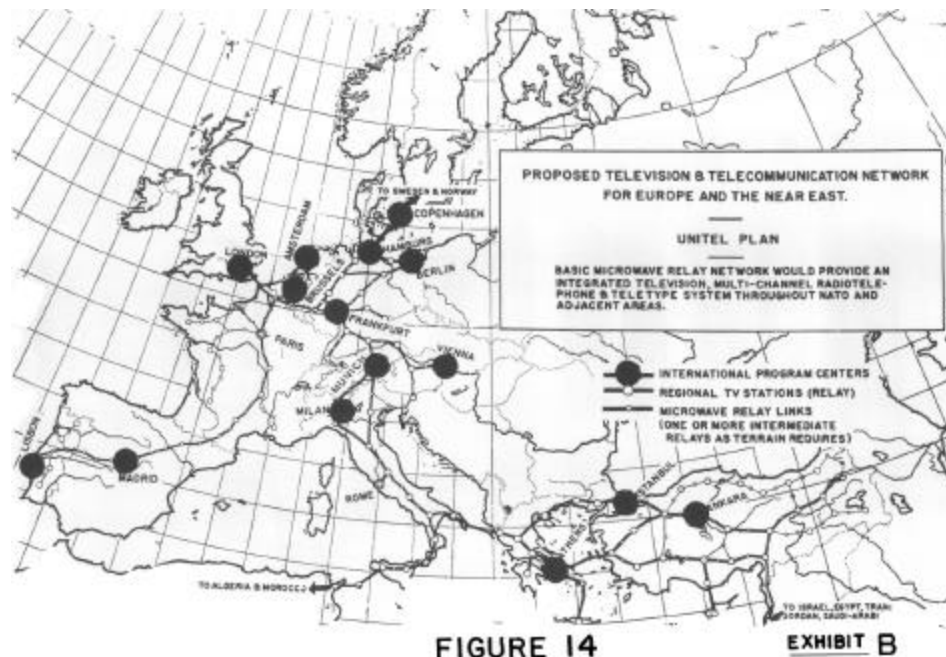
PLATE 25: Networking Europe and the Near East[38]

PLATE 26: The Mediterranean Basin[39]

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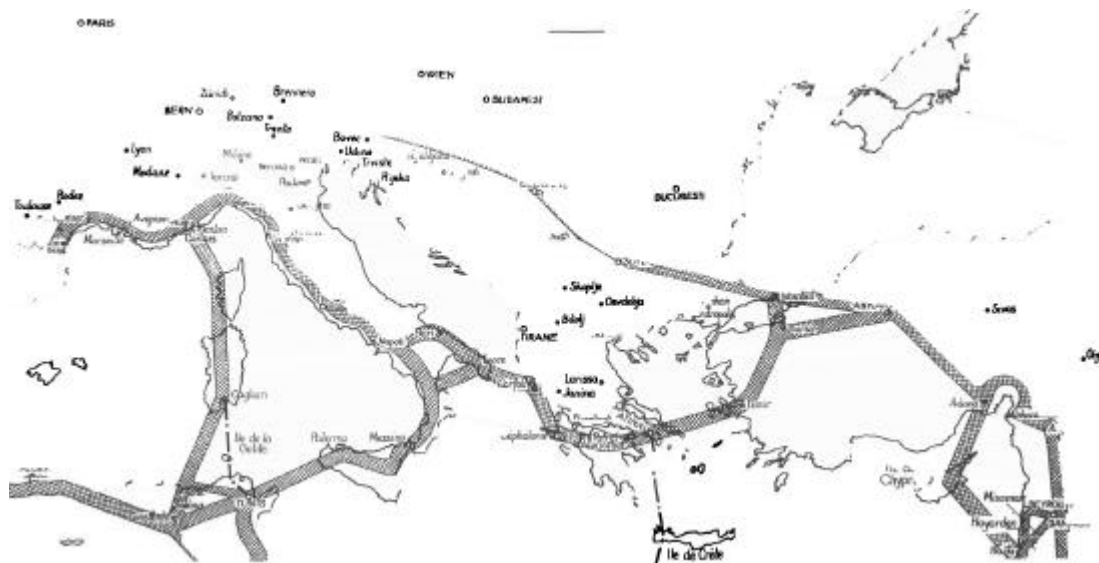
[38] "1951 Turkey Telecommunication Services Report," Holthusen Papers, Box 11, Folder "Worldwide Network Plan—Turkey Holthusen Report, 1951, Printed Copy," Hoover Presidential Library.

[39] "1951 Turkey Telecommunication Services Report," Holthusen Papers, Box 11, Folder "Worldwide Network Plan—Turkey Holthusen Report, 1951, Printed Copy," Hoover Presidential Library.
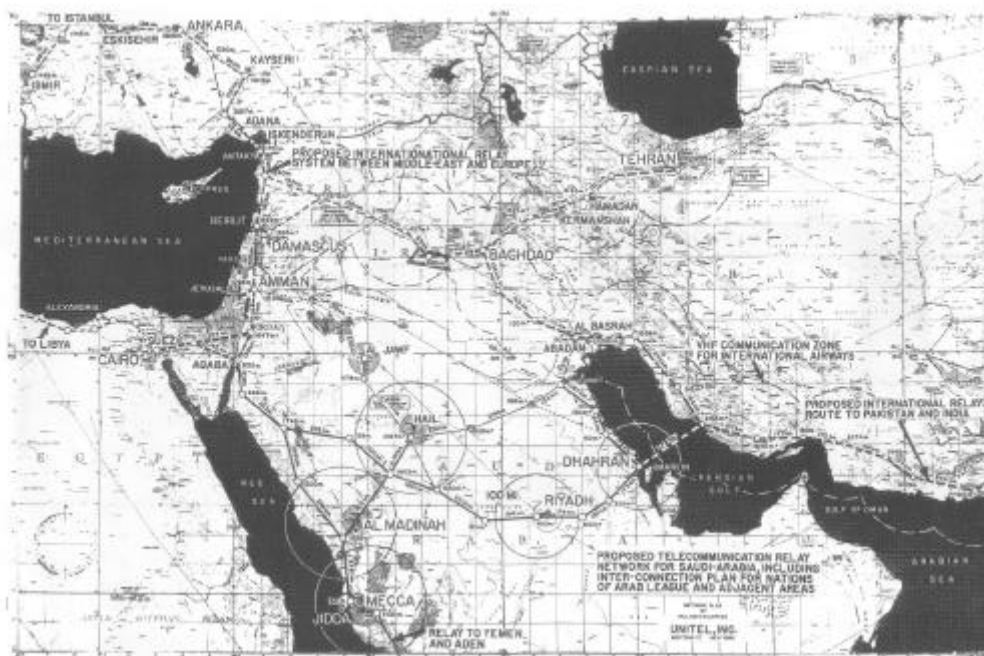
PLATE 27: Television of Arabia: Networking the Near East and Persian Gulf[40]

PLATE 28: Networking from Ankara to Istanbul, 1951[41]

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[40] map date January 1954; found in Holthusen Papers, Box 3, Folder "Medium-Wave Radio 1951-60 and related," Hoover Presidential Library.

[41] "1951 Turkey Telecommunication Services Report," Holthusen Papers, Box 11, Folder "Worldwide Network Plan—Turkey Holthusen Report, 1951, Printed Copy," Hoover Presidential Library.

PLATE 29: Pacific Rim Networking: Japan, Korea, Formosa, Philippines[42]
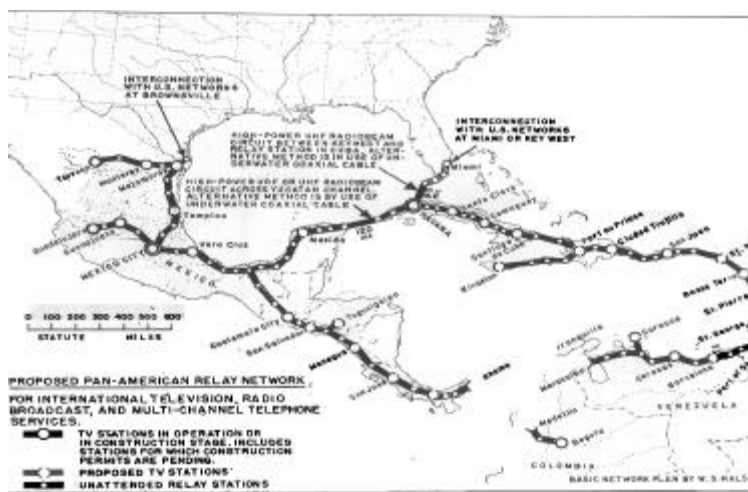
PLATE 30: Mexico, Central America, and The Caribbean[43]

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[42] map date unknown; found in Holthusen Papers, Box 3, Folder "Medium-Wave Radio 1951-60 and related," Hoover Presidential Library.

[43] Map date probably 1953; found in Holthusen Papers, Box 8, Folder "Television: Worldwide Network Plan Guatemala 1952-54 and undated," Hoover Presidential Library. A similar map was published in *Television Opportunities* in the November—December 1953 issue. (Note CIA involvement Guatemala 1954)

PLATE 31: South America[44]

Plates 23 to 31 reproduce a sample of the many maps developed by UNITEL in the 1950s as a component of their global network microwave relay plans. All of these maps share some common features:

- Linking major cities
- Utilizing extant transport routes
- Rimming seacoasts
- Key islands for leapfrogging oceans
- Linking to the capital city of every non-Communist nation
- A hub-and-spoke system of major and lesser stations
- Transcontinental and transoceanic linkage
- As a whole, a geography networking the entire non-Communist world for simultaneous real-time dissemination of electronic information
- As individual components, the possibility of a wide range of telecommunication services in local areas and/or a single nation

As everyone knows, the UNITEL global microwave relay TV network was never built. In the conclusion of this paper, reasons for the failure to build this system are discussed. However, UNITEL did have a role in bringing television to the world. UNITEL plans for Turkey did eventually influence the development of Turkish television, although not specifically along the lines UNITEL envisioned. UNITEL was one of the early voices promulgating educational television. And UNITEL was instrumental in privatizing television in one Asian nation: Japan.

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[44] Map date 1952, revised 1960; found in Holthusen Papers, Box 10, Folder "Worldwide Network Plan—Printed Matter," Hoover Presidential Library.

PLATE 32: UNITEL and the privatization of Japanese TV, 1953[45]

PLATE 33: TV, modernization, and Japanese consumer society[46]

Holthusen and Halstead, on visits to Japan, had become acquainted with several potential investors. Of this group, the major Japanese newspapers formed a coalition to back UNITEL and their networking system. The UNITEL Japan network was never built. However, this momentum did eventually lead to the establishment of Japan's first privately owned TV station, NTV Tokyo, in August 1953.

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[45] **Pacific Stars and Stripes** 9:222, 1 September 1953, found in Holthusen Papers, Box 9, Folder "Television: Worldwide Plan—Japan Clippings, 1952-59 and undated," Hoover Presidential Library.

[46] **Tokyo Evening News** 28 August 1953, found in Hickenlooper Papers—Senate—Foreign Relations, Box 89, Folder " Information Programs Subcommittee International Telecommunications Nippon Television Network, 1952-54," Hoover Presidential Library.
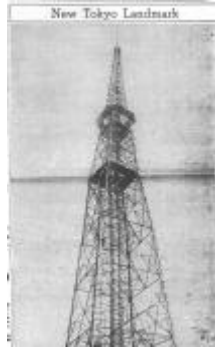
PLATE 34: THE NTV Mast (antenna) over Tokyo⁴⁷
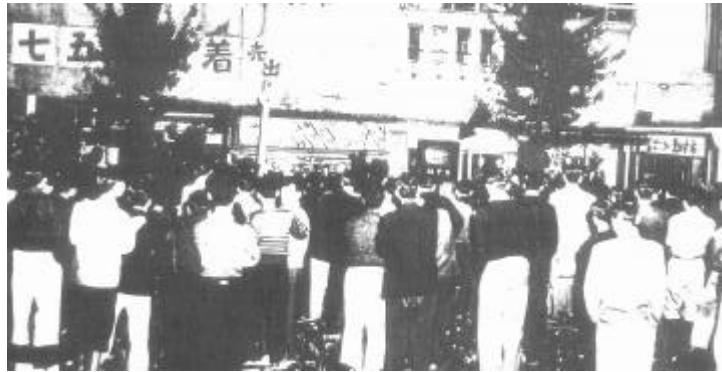
PLATE 35: NTV demonstration, Tokyo street⁴⁸

The emergence of NTV has its origins in the activities of Senator Karl Mundt; as early as 1950, Mundt had identified Japan as a particular threat for Communist influence, and also suggested that television in Japan could be an important weapon in the battle against Communism. Holthusen had made Japan one of his first nations for visiting while touring the world on behalf of the Senate Foreign Relations Committee. The history of postwar Japanese television is deeply rooted in American psychological warfare during the Cold War.⁴⁹

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⁴⁷ ***Tokyo Evening News*** 28 August 1953, found in ***Tokyo Evening News*** 28 August 1953, found in Hickenlooper Papers—Senate—Foreign Relations, Box 89, Folder " Information Programs Subcommittee International Telecommunications Nippon Television Network, 1952-54," Hoover Presidential Library.

⁴⁸ Undated photo; found in Hickenlooper Papers—Senate—Foreign Relations, Box 89, Folder " Information Programs Subcommittee International Telecommunications Nippon Television Network, 1952-54," Hoover Presidential Library.

⁴⁹ Simon Partner, ***Assembled in Japan: Electrical Goods and the Making of the Japanese Consumer*** (Berkeley: University of California Press, 1999). Chapter 3, "The Vision Of America: Bringing Television to Japan" (pp. 71-106) is—so far in my research—the only published source I have far found to date in this research project that mentions Henry Holthusen and his global television efforts. Partner's research is based on archival documents in Japan; he gives an excellent analysis of postwar Japanese television in the context of Cold War geopolitics.

UNITEL was not the only corporation interested in international television networking, nor was the United States the only nation interested in the geopolitics of 1950s television. Two other examples, beyond the United States, are mentioned below.

PLATE 36: Networking a British TV Queen: the Coronation of Elizabeth II[50]

The United Kingdom had been monitoring the growing global reach of American television activity with a combination of envy and anxiety since the late 1940s. The first occupying power to bring television to postwar Germany, by the end of German occupation the United Kingdom had grudgingly acquiesced to the American view of German (and by extension, European) television: the growth of television in Germany and Europe had to be strategically considered and implemented in light of east-west security issues, rather than as an expression of national identity.[51]

While the British Government eventually agreed with the American position that television in Cold War Europe was not so much an issue of national identity as it was an issue of east-west security, at the same time British foreign service officers looked to internationalize British television. Of particular interest was Canada, seen as a prime markets for British as well as American television exports. Even the British Cabinet recognized that television was "already revolutionizing publicity and propaganda methods...the emergence of television as a permanent

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[50] ***Pye News Letter Special Edition***, cover, June 1953, found in Hickenlooper Papers—Senate—Foreign Relations, Box 89, Folder " Information Programs Subcommittee International Telecommunications Nippon Television Network, 1952-54," Hoover Presidential Library.

[51] Schwoch, "Cold War Telecommunications Strategy."

feature of modern life cannot be ignored. To omit it from the armoury of our information services will have serious consequences…"[52] Arranging for international television broadcast coverage of the Coronation of Queen Elizabeth became a key moment in the internationalization of British TV. Wave-based links were established between London and the European continent to bring live coverage to France, Belgium, the Netherlands, and Germany. Kinescope recordings of the Coronation ceremonies were couriered by airplane to Montreal, New York, and Tokyo. Thus the Coronation of Elizabeth II also became the coronation of international television activities by the United Kingdom.
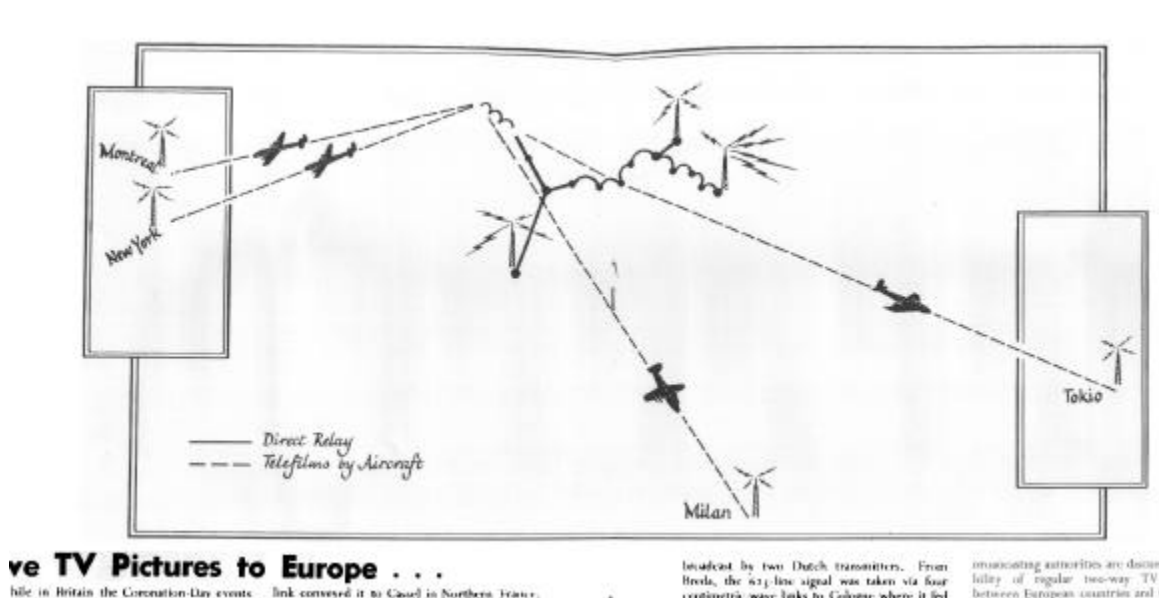

PLATE 37: Networking the Coronation via airwaves and airplanes[53]

Finally, the Union of Soviet Socialist Republics had its own vision of global television. Soviet TV was an object of intense scrutiny by Cold Warriors beyond

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[52] On British acquiescence in the American view regarding European Cold War television growth as an east-west security issue, see Schwoch, "Cold War Telecommunications Strategy and the Question of German Television." On the Canada TV market, see Malcolm, confidential memo, 3 October 1952, Foreign Office (hereafter FO) 953/1261, Public Records Office, United Kingdom (hereafter PRO-UK.) On the British Cabinet, see draft, no date, "Television—Establishment of an Overseas Television Service", FO 953/1261, PRO-UK. For an example of British interest in Berlin television, see Turner, memo to Information Services Division, "Television in Berlin", 21 January 1952, FO 1056/49, PRO-UK. Berlin was not the only city that saw Cold War television tensions; for the situation in Helsinki (and the threat of a new Soviet TV station across the Gulf of Finland in Tallinn), see Rauno Enden et al. eds, *Yleisradio 1926-1996: A History of Broadcasting in Finland* (Helsinki: Yleisradio Oy, 1996), pp. 133-136.

[53] *Pye News Letter Special Edition*, cover, June 1953, found in Hickenlooper Papers—Senate—Foreign Relations, Box 89, Folder " Information Programs Subcommittee International Telecommunications Nippon Television Network, 1952-54," Hoover Presidential Library.

the Iron Curtain. This paper, already long, does not permit a detailed discussion of this issue, so as a temporary substitute (and as another example that this paper is part of a larger work in progress) I offer the 1956 USIA illustration below.
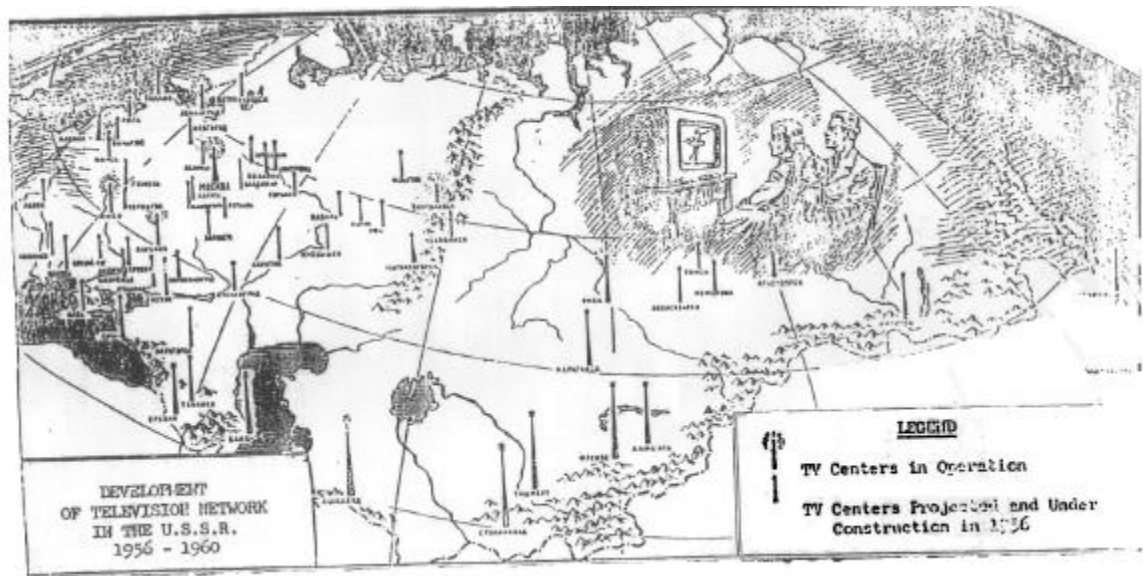

PLATE 38: The Great Unknown: Television Behind the Iron Curtain, 1956[54]

Conclusions

From the vantage point of 2002, the reasons why UNITEL failed to become a global TV network system are obvious. The tremendous amount of capital investment that UNITEL required was never sufficiently generated, either by government funding or by private investment, to make UNITEL a reality. Even if such investment had been forthcoming, one wonders if UNITEL could have been built. The construction of the DEW Line and the NORAD system in the Arctic regions of North America took almost the entire decade of the 1950s to reach completion. UNITEL had similar scale and faced similar logistical obstacles of terrain. Furthermore, UNITEL planned to conquer not only the Arctic, but the entire globe. It is difficult to imagine building the worldwide UNITEL system, even with full funding, in less than ten to fifteen years. As the testimony of David Sarnoff demonstrates, UNITEL was not the only voice in Washington with a plan for global television.

Nevertheless, UNITEL was a marvel of its age, despite never having been put into operation. The UNITEL plan presaged strategic defenses that became key components—indeed, remain key components—of American strategic and

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[54] RG 306, General Records of the United States Information Agency (hereafter USIA), Office of Research, IRI Intelligence Summary IS-58-56, "Overseas Television Developments Quarterly Report," 15 June 1956, Box 8, NARA.

missile defense. Although the terminology is different, UNITEL also demonstrates a prescient view of today's world of Internet, broadband convergence, and multiple networks. While its ambitious vision of technology was futuristic, UNITEL was also a timebound creature of the Cold War. Its rationalizing rhetoric was fully steeped in the language of psychological warfare, and its advocates were among the leading Cold Warriors found anywhere in the United States. UNITEL multiply represents a 1950s crypto-convergence: an early failed vision of present day broadband convergence of information technology, as well as an idea totally encrypted in the security rhetoric of the Cold War.

Finally, of course, UNITEL is never built because of the emergence of the communications satellite. In this sense, despite its deep connections to the U.S. Senate and its links to the State Department, UNITEL was strangely out of the loop regarding the vision of communication technology held in American government circles such as the National Security Council, the Defense Department, and the Eisenhower White House.[55] The communications satellite solved the logistical problems of crossing oceans, and was delivering transoceanic television feeds by 1964. The communications satellite, and the 1967 Outer Space Treaty, brings another change to television, not in the realm of technology, but in the realm of geopolitics. The 1967 Treaty, guaranteeing the peaceful uses of outer space as well as guaranteeing the right to disseminate a satellite feed over the planet, marks an important transition for American policy.

Heretofore, global television had been seen by American policy makers as an important component in Cold War ideology, and viewed strategically as yet another field for the policing of east-west security. By taking television and telecommunication off the terrain of Planet Earth and moving these electronic communications to the higher ground of outer space, the two superpowers also found themselves the only powers active on the new higher ground of electronic communications. Therefore, space could now become the playing field of east-west security. Global television moved from the poles (NARCOM) to the equator (the geosynchronous satellite.) This finally allowed terrestrial television— national networks, local stations, and so forth—to at last become what all the other nations of the world always wanted television to be. When the superpowers took television and telecommunications into outer space and abandoned terrestrial television as a symbol of east-west security, they also opened the door for Europe and the rest of the world to pursue their own vision of terrestrial television: television as a symbol of national identity.[56]

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[55] I have discussed these issues in another chapter draft of this book, "The Cold War, The Space Race, and the Globalization of Public Opinion Polling," presented at the International Studies Association conference in March 2002.

[56] This final paragraph is a capsule summation of the concluding chapter of my larger project.