

MAKING RADIO INTO A TOOL FOR WAR

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Abstract

Radio, from its very earliest days, was used as a tool for war. Governments and large corporations were the primary influences on the development and applications of radio. The major countervailing influence came from amateurs. By the 1930s, radio had become a prime tool for propaganda and counterpropaganda within and between countries, with large numbers of open and clandestine stations broadcasting partisan views, and this pattern was accentuated in World War II. The use of radio for war reflects its technical characteristics of being a broadcast medium, subject to interference and with declining costs. The early history of radio shows the importance of both shaping and use of technology for war and peace.

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... broadcasting, instead of developing into an agency for peace and better international understanding, serves often to incite hatred throughout the world, and is often used, for motives which obviously are not disinterested, and by men in conflict, to dominate, rather than to enlighten, the public mind. Science once again has made a gigantic step forward...¹

Examination of any technology poses longstanding and difficult questions about its supposedly inherent characteristics and relationships with society, and soon raises issues of power and equity. On the one hand, a technology—say a military technology such as the rifle, tank, or nuclear weapon—once produced, has certain social implications. On the other hand, technologies themselves are shaped by their social context: the artefacts that are developed and the forms they take are influenced by political, economic and cultural factors.² The vast investment in research and development into new military technologies is an example of such a factor. Without such intensive R&D, it is unlikely that cruise missiles would exist or that bullets would be designed to maximise damage to human flesh.³

Many everyday technologies are necessary for military purposes, such as clothing, food preservation, roads and telephones. It is intriguing to ask whether the development of such technologies has been influenced by military uses. How have technical characteristics of any technology influenced the way it has been used for war and peace? What are the key social groups that shaped the uses of the technology?

The history of radio provides a case study. Hailed by some as an instrument of peace, radio has played a role in all the wars of the twentieth century. A resource that belonged to all and to no-one (the ether, as it was known) was carved into property. An adjunct of national sovereignty, radio can also subvert it. International controls are possible when there are common problems, such as marine and airline communication. Otherwise there are only opposing rhetorics about freedom of information and propaganda. Not only totalitarian governments but also amateur operators and various interest groups appreciated radio's potential, but the latter were largely thwarted by market forces or the bias of bureaucratic regulation. Was wireless to be an agent of social change or of social control? As the technology has been constructed and its power increased, for example by television and satellite, such unresolved questions have been hugely magnified. Nothing has been learnt from the politics of radio's early history. Whether radio would help or harm people was incidental to the issues of corporate profit and state power.

This paper gives an overview of the development and use of radio from its origins through

the 1940s. It was in these formative years of radio, when decisions were made that now seem inevitable, that social influences can be most easily recognised. From its origins through the 1920s, the groups with the greatest influence over radio's development were governments and large corporations, with amateur enthusiasts a poor third. With the diffusion of radio technology, the 1930s saw a vast expansion of radio propaganda, as rival powers used the technology for their own purposes, a process accentuated during World War II. This history shows the complex interaction between the inherent characteristics of radio—a broadcast medium, subject to interference, with declining costs—and the key groups of government (including the military), corporations and amateurs. In the final section, an assessment is made of technical and social factors in the making of radio into a tool for war.

EARLY DEVELOPMENTS

Radio was “born into a world of jittery jingoism”.⁴ Marconi's first customer was the British War Office, which sent five Marconi sets, along with their Marconi-trained operators, to the Boer War. The British and Italian navies also ordered Marconi apparatus. Meanwhile, major German telegraph and electrical equipment firms (merging later to form Telefunken) were backed by the state to produce other systems and circumvent Marconi's patents. In the US, where there was political and ideological opposition to government intervention and control, invention proceeded in an atmosphere of rivalry among independent inventors, corporations and the Navy. The inventors fared badly. The Navy fared little better in its attempts to establish a government monopoly, resisted by the growing numbers of amateur enthusiasts. American Marconi, established to exploit his patents in the US, consolidated its control over the industry, buying out competitors or driving them out of business with patent infringement suits.⁵

In 1903 the Kaiser invited seven nations to an International Wireless Conference, citing the preservation of world peace and free enterprise as the main issues. The real issue was the Marconi Company's refusal to communicate with other systems such as Telefunken. Unresolved, this issue dominated a second conference three years later. This time most of the thirty nations voted in favour of free marine intercommunication. (The American delegates were pleased that the Marconi monopoly had been “mortally wounded.”⁶)

A second issue was the allocation of the electromagnetic spectrum, where the numbers of transmitters were beginning to interfere with each other. Germany, supported by the US, proposed to reserve the longer wavelengths for military and government use, the shorter for

merchant ships and private companies. There was a hidden agenda here: in England, most of the ships and shore stations were equipped and operated by British Marconi, whereas in Germany such stations were owned by the government. But Britain, having yielded on the issue of free marine intercommunication, managed to preserve the longer wavelengths for commercial use. Ironically, shortwaves were later revealed as more effective for long distance transmission.

Marconi was experimenting with longer and longer wavelengths, requiring more and more powerful sparks, in his efforts to transmit messages further and further—even across the Atlantic. In 1907 he established a commercial transatlantic service between Nova Scotia and a huge and costly station in western Ireland. This station drained his company's finances and pushed spark technology to its limits.

Others were turning to continuous wave technology, necessary in any case for voice transmission. They worked to develop and improve high speed alternators, oscillating arcs and, finally, vacuum tubes (also known as valves). During years of acrimonious litigation and sharp practice, crucial patents passed from individuals to corporations. Determined to retain control over long-distance voice transmission, AT&T (American Telephone and Telegraph) was closely monitoring developments, and in 1915 used vacuum tube technology to transmit a spoken message across the Atlantic. As the US Navy slowly extended its interest from national control of wireless to its actual use in signalling, it began using alternators and arcs.

Marconi had not entirely ignored continuous wave. After two years of negotiations, a General Electric high frequency alternator was installed at Marconi's New Brunswick station in 1917. But later that year, when the US entered the Great War, the Navy took over all radio stations, and furthermore imposed a patent moratorium, to foster cooperation among inventors, companies and the military. Many radio inventions were dramatically improved. The vacuum tube was developed not only into a more sensitive and reliable receiver but, significantly, into a small and cheap, if not very powerful, generator of radio waves.

When the war ended there were only three important components not controlled by the US Navy: the Marconi long-distance station, the patents on vacuum tubes, and General Electric's alternator, now capable of sending messages direct to Europe. Naval officials were anxious to keep the alternator away from Marconi's company, but the radio industry was not in favour of government control. The Navy and GE achieved their ends with the formation of a new all American firm, RCA (Radio Corporation of America), incorporating American Marconi.

Amateur wireless operators also keenly awaited the opportunity to move from spark to

continuous wave. Since 1906, when a cheap and simple receiver, the crystal set, was developed and widely marketed, amateurs (mainly white middle class boys and young men) had been building their own wireless network.⁷ The amateurs were resourceful, and ignored patents. Consequently they had tuning coils, part of Marconi's system, before either the US Navy or any company.

The amateurs and the Navy contested their rights to the increasingly crowded airwaves, with Marconi and other companies as keen spectators. The Navy's case rested on national security and marine safety; the amateurs argued, with some truth, that the Navy's use of wireless had been inefficient and unenterprising. The amateurs and the fledgling companies had lobbied against the 1906 International Wireless Conference, arguing that it was technically premature, favoured German inventors over American, and "transformed wireless into an instrument of war."⁸

Domestically, the companies promised a technical solution, and indeed the vociferous interest groups made a political solution difficult. Bills to regulate wireless were introduced in Congress, but not one was passed. Finally, after the *Titanic* disaster, the Radio Act of 1912 was passed. Among its provisions, transmission by amateurs was restricted. They could listen in on any frequency, but could transmit only over the short wavelengths, which were regarded as useless. Despite the Act, the number of licensed amateurs, amateur stations and radio clubs increased dramatically.

In 1917, in the panicky months before the US declared war on Germany, amateurs relayed a message across the continent and received a reply in less than two hours. The American Radio Relay League, which organised the demonstration, announced that it was now prepared to provide "transcontinental service through amateur plants, which, in case of war, would enable communication to be maintained, even if telegraph and telephone wires were cut."⁹

One month later however, when war was declared, the amateurs were ordered to close down their stations and dismantle their apparatus. Thousands of amateurs enlisted as radio operators and became familiar with the latest technical advances. After the war, they were particularly keen to acquire vacuum tubes, in order to broadcast speech and music, and RCA began selling these.

Once again the amateurs were warned not to move above wavelengths of 200 metres, since by this time commercial stations, operated by department stores, newspapers and radio companies, had been allotted the 360 metre band. Using wavelengths of 200 metres or less, amateurs on the Atlantic managed in 1921 to send signals to their British counterparts.

In 1922, Marconi himself predicted a revolution in radio: short waves and vacuum tubes would make high-power transmitters obsolete. He recalled that in 1899 he had demonstrated that waves could be “beamed” by means of parabolic reflectors, but because the reflector had to be proportional to the wavelength, reflection was limited to shortwaves, which were difficult to produce at that time. In 1923 Marconi found that at great distances signals from his small shortwave transmitter were stronger than those from his huge longwave stations. Surface waves faded, but skywaves, reflected from the Heaviside layer, could be heard at distances of 2300 kilometres during the day and almost twice as far at night. Early in 1924, from a twelve kilowatt station with a parabolic reflector, Marconi sent a voice message to Australia. By the end of that year, Marconi was “beaming” 32-metre waves to Sydney for almost 24 hours a day. For intercontinental communication, “beam” radio was three times faster than both longwave and the latest cable technology, and twenty times cheaper.

Assumptions about methods of wireless communication had been changed by technical developments. Visions of the uses of wireless were renewed also, and debates about access and equity continued. Initially Marconi spoke of his invention as a military or naval telegraph system. Later he referred to “commercial purposes” rather than “a public service”¹⁰; these purposes basically meant point-to-point telecommunication. But another entrepreneur (Lee De Forest, who developed a forerunner of the vacuum tube receiver) had plans to broadcast music and speech into American homes, even before he had a suitable transmitter. And the amateurs were moving on from collecting call signals and overhearing dramatic messages to broadcasting voice and music. Here was the nucleus of a market for radio receivers, and soon corporations like Westinghouse, RCA and AT&T were sponsoring broadcasting stations. Even more numerous were the stations operated by nonprofit organisations such as religious and civil groups, unions and particularly colleges and universities.

There was a broadcasting boom, and the 1927 Radio Act set up a Federal Radio Commission to regulate broadcasting and allocate the spectrum. It was given wide powers but no specific guidelines; the legislation merely required it to allocate licences to those broadcasters which would best serve the “public interest, convenience, or necessity”—requirements which the Commission viewed through technological blinkers as “the best possible broadcasting reception conditions”. Since the FRC had very little contact either with the nonprofit broadcasters or with public interest groups and members of Congress,¹¹ there was bureaucratic agreement that “the success of radio broadcasting lay in doing away with small and unimportant stations.”¹² In vain the American Civil Liberties

Union called for preference to nonprofit broadcasters “in order to protect the diversity of opinion necessary for democracy.”¹³

European countries also were tackling the problems of revenue and regulation, but for various reasons coming down on the side of complete or partial government control. As in the US, broadcasting in Britain and Holland was begun by private firms, but regulated in 1927 as a public service. In Holland, the government and five broadcasting associations jointly owned shares in a company operating two longwave transmitters. The five very diverse associations rented time on the transmitting stations. Membership was voluntary, and no licences were required; there were enough paying members to maintain the service. One American observer wrote, apparently with some astonishment: “Radio advertising is ruled out by common consent; so is profit. Nobody earns anything but a reasonable salary, and there is not a more prosperous and better-liked broadcasting system in the world.”¹⁴

In Britain in 1904 the power of the postmaster general to control telegraphs was extended to wireless by the Wireless Telegraph Act, the first of its kind in the world. In 1923 the first broadcasting licence was granted to a company established by six wireless and electrical manufacturing firms. As in Holland, the extremes of state operation and private ownership were avoided when in 1927 by Royal Charter this company was taken over to form the British Broadcasting Corporation. According to a clause in its licence, the government, through the postmaster general, did have powers to control the corporation, but successive governments preferred to keep these powers in reserve, allowing the BBC absolute independence in its daily operations. Some of its income, derived mainly from receiving licences, was retained by Treasury but could be released on application. In 1937 some money was released, and was used to develop television and to construct underground studios, bombproof and gasproof, to be used in case of war.

In the USSR wireless was completely controlled by the government. This vast state, with its widely dispersed, largely illiterate and ethnically divided population, needed a centralised system for the communication of human speech over great distances, as Lenin well knew. He asked the Politburo to support radio, in view of the service it might provide “both in a military sense and in the matter of propaganda.”¹⁵ In 1922 a 12 kilowatt transmitter, claimed to be the most powerful in the world, was installed in Moscow; in two years from 1926 the number of transmitters went from four to fifty. Few receivers were privately owned, but there were loudspeakers in apartments, factories and barracks.

In Nazi Germany radio became “a model for the whole world”, according to the Director of

Transmissions,¹⁶ who controlled broadcasting, listener associations, radio manufacturing and retailing. Local officials were responsible for seeing that every factory, school, theatre, coffee house and public square was equipped with receivers and loud speakers. During important broadcasts all work was stopped, shops were closed and traffic ceased. The “People’s Set” was intended to receive two transmitters, one local and the other national.

RADIO WARS

Broadcasts did not stop at national borders. By the 1930s Europe was blanketed by a new ‘fog of war’—foreign language broadcasts and counter broadcasts aiming to ‘jam’ them, all transmitted from long- and medium-wave stations of ever increasing power. (In 1926 a total of 116 kilowatts was being used; in 1938, 8000 kilowatts). For example, Prague increased the strength of its transmitter in order to drown out broadcasts from Hungary, which in turn increased its power in order to broadcast to Hungarians in the east of Czechoslovakia, as well as to the Hungarian minority in Yugoslavia. In turn, Yugoslavia built a station designed to reach southern Slavs wherever they lived and ‘drown out Hungarian revisionist propaganda.’¹⁷ The USSR transmitted certain broadcasts in German, ostensibly for its Volga German Republic, but they emanated from the most powerful long-wave station in Europe and were clearly heard beyond Soviet borders. French transmissions in German for German-speaking Alsace were clearly audible in Germany, and were consequently jammed. German stations broadcast to German minorities in other countries and to groups (in Poland, Lithuania, Latvia, Czechoslovakia, Rumania and Yugoslavia) that might be drawn into the Nazi orbit.

Jamming methods included mechanical Morse code; another voice, on or near the original wavelength, aimed at making the broadcast unintelligible, or at least tiring and difficult to hear; sirens and bells; or artificial static. To produce a counter-oscillation of similar intensity and frequency required constant monitoring and some idea of the sequence of frequencies likely to be used by the broadcaster, as well as the location of the transmitter. In radio war, offence was easier than defence.

In the USSR there were few private radio receivers, but the Nazis were in a dilemma, having encouraged every German to buy a wireless. Listening to foreign broadcasts was illegal, and radio wardens, at first responsible for making people listen to Nazi broadcasts, later had to report them for listening to foreign stations. According to a clause printed on all British wireless licences, it was illegal to listen to unauthorised broadcasts. During World War II a number of people were given minor sentences for allegedly listening to clandestine enemy

stations. After public outcry, most of the convictions were quashed.¹⁸

With the advent of shortwave, radio war became global. In 1930 there were only three shortwave transmitters in Europe, but by 1937 there were over forty. The colonial powers—Holland, Britain, France, Belgium and Portugal—began shortwave broadcasts to their colonies and overseas dominions. Before the Berlin Olympic Games of 1936, Germany added eight transmitters to its shortwave station at Zeesen, converting it into ‘the largest propaganda machine in the world.’¹⁹ After the games it was used to broadcast in German and other languages to reach Germans in South Africa, South America, US and elsewhere, and also to convince the rest of the world of German greatness and aspirations. In South America local stations relayed over 200 programs from Zeesen. Editors of local newspapers came to rely on the news service broadcast from Zeesen, translated by German agents and delivered to their desks. The effect of this daily political news was to popularise Nazi and Fascist philosophies and ‘raise doubt in regard to the efficacy of democratic institutions in the face of internal disorder and the external pressure of undeclared wars.’²⁰

The Italian shortwave station at Rome, which broadcast in nineteen languages for twenty-two hours a day, sent programs nightly to Latin America. In 1935, the year in which Italy invaded Ethiopia, the Italians built a powerful medium-wave station at Bari in southern Italy, specifically for broadcasting in Arabic to North Africa and the Middle East. It was said that radio sets provided to shops and cafes could be tuned only to the Italian stations. Virulent attacks on British influence in the Middle East were in retaliation for British opposition to the Italian military action against Ethiopia. After the League of Nations, somewhat reluctantly and hesitantly, announced sanctions against Italy, Marconi twice broadcast to the US, defending Italy’s action and deriding the League. (Marconi had joined the Fascist movement in 1923, one year after Mussolini assumed power). He also wanted to broadcast in England, but his offer was declined by the BBC.²¹

In 1937 the British government requested the BBC to begin broadcasts in Spanish, Portuguese and Arabic; and in the US NBC began a worldwide shortwave service in six languages. These initiatives represented the first real answer to the Fascist radio war, just as British rearmament and the big navy program of the US were responses to the expanding military machines.²² The BBC put its faith in “straight news” and presented a daily bulletin compiled from agencies such as Reuters and Press Association. Predictably there would be tension between the BBC and the Foreign Office, and in this regard the Arabic service had a sensational beginning. Its first news bulletin reported that a Palestinian Arab had that morning

been executed, on orders of a British military court, for carrying a revolver. The subsequent debate between Foreign Office and the BBC foreshadowed World War II policy. The file contains, for example, the following opinion:

...Italian propaganda against us would have been innocuous had it not been for the actual facts which it reports ... it is the *facts* which have damaged us far more than the ridiculous effusions of the Italian Press and the inventions of Bari broadcasts which have done us little harm. We are now in a dilemma because, if we suppress these facts in our own broadcasts it will be clear that we are not giving straight news... if we give full news from Palestine we shall be daily injuring our own reputation and prestige.²³

Contemporary observers remarked that the war of the transmitters, the “verbal warfare in the ether” and the regimentation and manipulation of domestic listeners were all part of the general preparation for war. “Only an incorrigible optimist” could deny it.²⁴

There were optimists, however. In an article “Broadcasting Will End War!” in the magazine *Radio Pictorial*, Arthur Henderson wrote:

One of the developments to which I personally look—in the near future—is an expansion of broadcasting arrangements for the fuller discussion of international affairs ... particular interest attaches to the League of Nations wireless station near Geneva.²⁵

In 1932, the League’s station began a series of broadcasts reporting League activities. It could use only shortwave, limiting its audience drastically, and in any case, had to stop its regular programmes on the outbreak of war, “at the very moment when its voice was more than ever necessary.”²⁶ But this bureaucratic radio had done nothing to counter war propaganda with the League Covenant’s concept of an international system of law and order. “The most vital function of radio was neglected, namely, the active propagation of the League idea during those crises when everything depended on mobilizing public opinion for the maintenance of world peace and order.”²⁷

In 1936, after five years of drafting a convention, the League of Nations called an Intergovernmental Conference for the Adoption of a Convention Concerning the Use of Broadcasting in the Cause of Peace. The convention proposed a kind of radio disarmament treaty, in the form of agreed principles of law. These, it was hoped, would guide every state in the “conduct of its own contemporary foreign policy through broadcasting”. The convention prohibited the broadcasting of false information, material harmful to good international

understanding, incitement to war or to internal insecurity in the receiving nation. It was signed by twenty-eight delegations, and ratified in 1938 by nine nations (Brazil, UK, Denmark, France, India, Luxembourg, South Africa, New Zealand and Australia). It was a very feeble ray of light in the fog of radio war and the huge war clouds rolling up on the horizon. But at least the League “hammered out rules for maintaining peace, to be codified beside the longstanding rules for making war.”²⁸

At the Paris Peace Conference of 1919 President Woodrow Wilson had called for an international congress to provide “the entire world with adequate communication facilities on a fair equitable basis”. Whatever Wilson’s vision, his call was eventually interpreted in terms of negotiations over wavelength allocation. Just as the domestic radio boom had forced the enactment of the 1927 US Radio Act, in the same year developments in international shortwave and radiotelephony brought delegates from eighty countries to a radio conference in Washington. Since 1912 stations that transmitted across national borders had registered their use of a particular wavelength with the International Radiotelegraph Union. It was a first-come first-served system, favouring companies and states with capital and technology. Spectrum space was limited and unintentional interference was growing. The US companies, always wary of regulations, agreed to specified frequencies only for marine, aviation, police and long-distance telephone services; otherwise, they argued that interference problems could be negotiated bilaterally—for example, if US broadcasts spilled over into Canada. The American companies “practically wrote” the agreement,²⁹ with no regard for the interference problems of European nations.

At the next international radio conference, at Madrid in 1932, the two international communications agencies—radio and telegraphy—were merged to form the International Telecommunication Union (ITU). There were more wrangles over wavelengths in the crowded band (150-1500 kilocycles) that had been allocated to medium-wave broadcasting. Transmitters had become more powerful, interference was worse, and the Soviet Union, excluded in 1927, had been allocating wavelengths to its own services with little regard for the international agreement. A further conference (Cairo 1938) reserved twenty-eight shortwave bands for intercontinental air routes (just as in 1906 considerations of marine safety had forced a degree of international agreement). Again in 1939, at Montreux, distribution of wavelengths was revised, when 400 stations had to be fitted into 139 available wavelengths. Thirty one governments agreed to a thorough revision of the wavelengths used by European transmitters since 1934. Their accord (making “the propaganda more systematic and

orderly”³⁰) was to come into effect in March 1940.

Meanwhile the radio war intensified. The calls of the convention “in the cause of peace” were ignored, as most broadcasts continued to “incite rebellion” and “undermine the internal security” of others.

In the Spanish Civil War, that small-scale rehearsal for World War II, the military took over the radio immediately, and broadcasting stations were always among the first points of attack. All arrangements regarding wavelengths were jettisoned, both sides transmitted hostile propaganda without cease and tried to jam each other’s broadcasts. The “broadcasting general” of the insurgents was as important as the generals at the front. Loudspeakers in the trenches attacked the morale of enemy fighters.

Most of the stations, and the most powerful, were held by loyalists, who reminded neutrals of their common need to oppose totalitarian aggression. The Francoists tarred the Republic with the Bolshevik brush, stressed their own military strength and advised the neutrals to join the stronger side. Some of this propaganda originated from stations broadcasting in Spanish from Italy or Portugal.

In the years before the 1938 Czechoslovakian crisis, German stations were transmitting anti-French, anti-Lithuanian and anti-Czechoslovak broadcasts. The latter, however, were aimed not only at Sudeten-Germans and others inside Czechoslovakia, but at the world, part of which was formally allied to Czechoslovakia. As early as 1935, *shortwave* broadcasts had accused the Czechs of systematically destroying Sudeten industry and conducting “a passionate fight for extermination” against the Sudeten German minority.³¹ Radio was the ideal instrument for influencing and demoralising opinion in these other countries, as for the first time people everywhere were relying on radio for news of a dramatic and rapidly changing situation. Closer to Prague, Sudeten Nazis exiled from Czechoslovakia broadcast frantic appeals against the “Bolshevist Hussite criminals”. The Czech effort to counteract the Nazi campaign was overwhelmed by its hysterical fury, and was not assisted by the radio of their so-called allies. Thus, the BBC had been advised to follow a “co-operative” (appeasement) policy.³² The Nazi campaign for Slovak secession was similar, with a short radio war between “exiled” leaders of the Fascist secessionist faction in Vienna and the Slovak government in Bratislava. It was only when German troops marched into the Slovak remnants of Czechoslovakia that the Czech radio finally capitulated, attempting only to calm the people and counsel against offering resistance.

In 1938 the BBC for the first time broadcast to Europe in German, Italian and French. A

European Service, employing foreign translators and announcers, began broadcasting in sixteen languages for twelve hours a day. In 1939, as the situation worsened, the BBC even broadcast a few special appeals, such as a plea to German miners from the British Mineworkers' Federation and a manifesto signed by eighteen eminent Britons.³³ Warning Germans against these foreign "bombs for the mind" and efforts "to separate the people from its leaders", Goebbels stiffened the penalties for spreading news heard on foreign stations, and counter-attacked with English language broadcasts from well placed stations such as Hamburg, famous later for the 'Lord Haw-Haw' programmes.

In any event, in 1939 Hitler's Polish radio campaign was somewhat less one-sided than the Austrian and Czechoslovakian campaigns had been, and involved stronger replies from Polish radio as well as Western propaganda, including direct appeals to the German people. Transborder and intercontinental broadcasts, along with huge monitoring services, were setting the stage for the radio war of World War II. During the war, the Axis had advantages technically in their central position and transmitters acquired in occupied countries. But following the aggressive Nazi campaigns of the 1930s at least some of their listeners were more conscious of the political objectives of broadcasting and more sceptical.

The high reputation of the British Broadcasting Corporation during the war was well earned, but is rarely mentioned in the memoirs of political and military leaders. Thus, in the six volumes of Churchill's history of the second world war there are fewer than ten references to the BBC or the role of broadcasting.³⁴ Whereas the Nazis were fascinated with radio as a propaganda weapon (and for historical reasons exaggerated the power of propaganda itself), the BBC built up its European audience by the unvarnished presentation of the same basic news to all countries. Goebbels deliberately played on prejudices and confusion; the BBC relied on "straight news". Goebbels told his lieutenants in the Ministry for Public Enlightenment and Propaganda during the war that "propaganda does not have anything to do with the truth."³⁵ On the other hand, one BBC bureaucrat, wary of British "black" broadcasting, warned the Political Warfare Executive:

"Black is all right on short wave. ... But if you get on the medium wave with all your lies and distortions, you will undermine the whole currency value of British propaganda as a purveyor of truth."³⁶ The BBC's remarkable approach went further, admitting that "there is no absolute standard of truth: one can only stick to the truth as one sees it."³⁷ It complained that it had been "used ... to throw dust in the eyes of the enemy" with news "most of which had been handed out to it."³⁸ Perhaps the greatest threat to the independence of the BBC

during the war followed the BBC's report of the bombing of Coventry. It did not observe the people of Coventry "clamouring for reprisals". This infuriated those in the War Cabinet campaigning for the strategic bombing offensive against Germany,³⁹ and the complete take over of the BBC by the Ministry of Information was narrowly averted.⁴⁰ Commitment to truth and consistency paid off, even in the early stages when the war was going badly.

While the Germans often interfered deliberately with reception in their own or in neutral countries, the British Government backed BBC engineers on this occasion in resisting pressures to "jam", even during the worst months of 1940. Technical reasons—waste of valuable power and wavelengths, and difficulties of general jamming over large areas—were important, but it was also argued that "jamming is really an admission of a bad cause. The jammer has a bad conscience... He is afraid of the influence of the truth ... we have no such fears and to jam broadcasts in English by the enemy might even be bad propaganda."⁴¹

CLANDESTINE RADIO

The BBC was "white". White stations identify themselves correctly and are legal, using their registered wavelength. Their operations are overt, although occasionally their funding may not be. Until 1973 the Cold War stations Radio Free Europe and Radio Liberty, for example, were covertly funded by the CIA, and not by private funds as their publicity claimed. Their transmission was not covert, however, and hence they are not clandestine radio stations. Nor are the international or foreign service stations of other countries. Radio Moscow, Radio Beijing, Voice of America, for example, are official, listed in *World Radio TV Handbook*, and "white".

Clandestine stations, "black" or "gray", are not registered with the International Frequency Registration Board. In theory, gray stations are run by dissident groups within a country; black stations masquerade as stations of the opposition. In practice, shades of gray and black are indistinguishable in a general murk of deception. Since the development of the technique in World War II, "clandestines have hovered around the world's trouble spots. They come and go as wars, revolutions or political alignments change."⁴² Dexter identified three types of clandestine broadcasting in Africa in the 1980s: genuine, "pseudo" and programs. Genuine stations were operated by a resistance group or guerrilla movement (often armed), from a secret location within rebel territory, or from a site safe within a friendly neighbouring nation. In the second case, a friendly government may have initiated the project and even created a resistance group that was little more than a name, in order to give the broadcasts an air of

legitimacy and distance them from the sponsoring government. Thirdly, if a group had neither funds nor a suitable location, a friendly government might air the rebel programs openly on its own national radio. Thus Radio Freedom, aimed at South Africa, was a program produced by the African National Congress and broadcast on government-owned stations in Ethiopia, Tanzania, Zambia and Angola. Voice of Truth, on the other hand, was one of two stations operated by Unita and broadcast from Transvaal; South Africa, while stating that the stations were unlicensed and in breach of South African law, did nothing to close them down.

Clandestine radio stations first took to the air in the 1930s. For example, in 1933 in Cuba, during strikes riots and agitation for the overthrow of the brutal Machado government, a clandestine station sponsored by a student revolutionary group began broadcasting anti-Machado propaganda and calling on the army to revolt. Although several days later police raided a house in nearby Matanzas and confiscated the transmitter, as well as a cache of arms, other clandestine stations soon replaced it.⁴³

In 1932 in India a “gray” Congress Party station was discovered outside Delhi, transmitting anti-British propaganda to a series of portable sub-stations kept ready to be shifted in case of a raid by the authorities. Indians also broadcast from America on several occasions; Gandhi, for example, broadcast on 13 September 1931. Later, a number of Indian exiles supported by American sympathisers broadcast (“gray”) from the west coast of the US.⁴⁴

In the late 1930s, as the Nazi shortwave transmission intensified and diversified its broadcasts, Zeesen’s Hindustani broadcasts (“white”) assured listeners that “We, the German people, respect Mahatma Gandhi just as much as we respect Hitler, who has the same principles as Gandhi; National Socialism, too, teaches non-violence.”⁴⁵ The Italian shortwave station (“white”) at Bari also began broadcasting in Hindustani at this time.

In 1942 *Azad Hind* (Free India) (“gray”) began broadcasting from Berlin in eight Indian dialects. It was run by Indians and headed by Subhas Chandra Bose, leader of the rival faction of the Congress Party. Arrested in 1940 on a charge of sedition and confined to his house to await trial, he had escaped, and fled to Germany through Afghanistan and Russia. (He remained in Berlin for two years before travelling by submarine and air to Tokyo.) *Azad Hind*’s programmes reflected Bose’s vision of India as part of the Japanese ‘Co-Prosperity Sphere’. At the same time the speeches of Hitler, Goebbels and other Axis leaders could be heard in India on world-wide link-ups, and were often referred to in the Indian press.

The Indian section of the BBC’s Eastern Service was given the task of countering Axis stations such as *Azad Hind* and *Radio Himalaya*. Indians were increasingly divided between

Muslims, many of whom desired an independent State, and Indian nationalists, many of whose Congress Party leaders were in prison. For these reasons *All India Radio* (“white”) was at worst politically suspect and at best lacking in authority.⁴⁶ From late 1941 until November 1943 the BBC broadcast a series of “white” weekly news commentaries, *Through Eastern Eyes*, read by Indians, but usually written by George Orwell. As he himself wrote at the time, Orwell believed passionately that India ought to be given its freedom at the earliest possible moment, but that there were greater dangers for the Indian people in domination by an Axis power or inclusion in a ‘co-prosperity sphere’ than in a few more years of British rule, even until the end of the war.⁴⁷ Most of Orwell’s commentators were ‘Indian left-wing intellectuals, from Liberals to Trotskyists, some of them bitterly anti-British. They don’t do it to “fox the Indian masses” but because they know what a Fascist victory would mean to the chances of India’s independence.’⁴⁸

While rarely referring directly to Bose and his colleagues, Orwell’s broadcasts were often a direct counter to *Azad Hind*. News from Axis domestic radio was provided by the BBC’s monitoring service, and this news, which would never have been heard in India, presented another picture of life under Hitler’s New Order, the model for Japan’s Co-prosperity Sphere.⁴⁹ (There were broadcasts to India from Japan also, and from Burma after it was occupied by the Japanese. The Burmese broadcasts were difficult to monitor in Britain and in any case were “particularly appalling”, under the control of a famous Japanese baseball commentator.⁵⁰ West suggests that Orwell left them to be countered by All India Radio, and concentrated on European transmissions.)

On one hand, Churchill’s “turn of the nineteenth- to the twentieth-century perspective”⁵¹ hardened the British policy of postponing concessions to Indian nationalist aspirations and kept India from wholeheartedly joining the Allies. On the other hand, support for the Axis was prevented by the split in the Indian nationalist movement and by ambivalence within the Axis. Opposed as they were to British rule, most Congress Party leaders were also dubious of Germany and Japan, and Bose’s identification with the Axis intensified this doubt. At the same time, the Axis governments were negotiating among themselves concerning policy—whether to side openly with Bose or to try to cultivate Gandhi and Nehru. Indian leaders were right to be wary; neither Germany nor Japan “ever had any intention of supporting independence for India; they merely wished to use it.”⁵² When in 1942, a British mission, led by Stafford Cripps (and including an envoy from Roosevelt to demonstrate US concern), failed to conciliate Congress leaders, the Ministry of Information issued a report to

the BBC with suggestions on the line that “should” be taken.⁵³ Orwell and his fellow broadcasters resented and ignored this memorandum, just as the BBC had earlier ignored criticism from the Viceroy for giving “undue prominence” to speeches by Congress leaders. And at the end of 1943 the BBC broadcast a series of discussions on “India and the Four Freedoms.”⁵⁴

The early and universal development of “black” radio makes it difficult to identify “gray” radio stations. In their introduction to their comprehensive survey, Soley and Nicholls⁵⁵ suggest that their goal of “accurately describing the major clandestine stations within their political context is probably unreachable”, given all the “attempts by clandestine broadcasters, their sponsors, or opponents to deceive outsiders about their true nature”.

The station Libertad Milan broadcast fervent appeals to Italian anti-fascists, gave long news bulletins from Paris and London, and played the *Marseillaise*. And in Russia in 1938, after weeks of silence which had led to the conclusion that it had been closed down by the secret police, a clandestine station in the Soviet Union was heard again broadcasting against Stalin and playing the *Internationale*. Attempts to jam its programme failed, and the announcer claimed that the station had been moved eastwards.⁵⁶

As noted, governments supplemented their overt “white” broadcasts with various shades of “gray” and “black”. William Joyce (Lord Haw Haw) began his notorious career with “white” broadcasts to England on the Hamburg and Bremen medium wavelengths. Although he had a large audience in the early months of the war, the BBC maintained that there should be no direct or regular replies to the broadcasts,⁵⁷ and indeed during the summer of 1940 he largely lost his audience. While continuing his Lord Haw Haw broadcasts, William Joyce took charge of the British section of German “black” radio, purporting to come from within Britain. He had access to the principal British daily papers—one day late—and weeklies, but could not rely on much information from Germany’s underdeveloped monitoring services. Each of these German black stations—New British Broadcasting Station, Christian Peace Movement, Workers’ Challenge and Radio Caledonia—was aimed at a particular section of the British people, but the project lacked finesse.

Not so most British black broadcasting, according to even its critics in the BBC and elsewhere. By the end of the war it had become a serious rival to Nazi home radio and possibly also the BBC’s German service, in terms of numbers of listeners. Under the control of the Political Warfare Executive and free from any BBC inhibitions of truth and decency, the bogus German radio was ideal for ‘operational’ propaganda—“misleading U-boat

commanders..., helping to fox the Luftwaffe defences, ... putting over a strategic deception plan or stimulating desertion or malingering.”⁵⁸ It was obviously necessary for the government to deny any knowledge of its existence, and officially it did not exist. Throughout the war, and long afterwards there was intense personal and departmental feuding among the heads of PWE and BBC, convinced that the other represented bad journalism and was doing little for the war effort. R.H.S. Crossman described black propaganda as ‘a secret weapon which can only be tolerated—if at all—in total war’. Granting that it was brilliantly executed, he went on to ask, “But would victory have been delayed for a day if ‘black’ had been forbidden and all our efforts had been concentrated on perfecting a white propaganda, designed first to win the confidence of the enemy in our truthfulness and then to impose our will upon him? I suspect the answer is no...”⁵⁹ Sefton Delmer, in charge of “black” propaganda, argued that it performed “tasks which were legitimate and valuable psychological warfare operations and which, because of the quite proper restriction of the official voices to truthfulness, could not be carried out by the BBC or the other overt allied media. ‘Black’ and ‘grey’ were a necessity, not a useless luxury.”⁶⁰ In 1973, in the midst of a debate in *The Times*, the former Director of Plans and Operations of the Political Warfare Executive wrote:

As a poacher turned game-keeper, keeping a practised eye open for international abuses of the kind we generated and used during the war, I am not likely to boast about nor excuse the ‘black’ arts of subversion and black propaganda ... No one will ever be able to measure the effectiveness of our role—specific operations, yes. I have never believed that we could effectively divide the Germans..., but we did confuse and disturb them and soften them up. In terms of the occupied countries I would maintain that political warfare (overt and covert) did a praiseworthy job in restoring morale, recruiting resistance and producing a strike force... It was a concern of the Political Warfare Executive to keep [the BBC] immaculate. Its veracity and credibility made it one of our most important weapons.⁶¹

And Ellic Howe, from PWE’s black forgery unit, wrote: “Looking back, I have realised (though without any feelings of satisfaction) how important is the role which ‘black’ plays in the modern way of political life, both nationally and internationally.”⁶²

EXPLAINING THE ROLE OF RADIO IN WAR

The groups most influential in the early history of radio were governments—and especially

their militaries—and corporations. Between them they shaped the uses of radio, for example by setting up government monopolies or allocating frequencies to large commercial interests. The state and corporate shaping of radio was far from total, however, since it necessarily was constrained by the characteristics of radio technology. For the purposes here, some important characteristics are:

- radio is a broadcast medium;
- radio waves are subject to interference;
- radio can easily be broadcast beyond national borders;
- for the average listener, the location of the source of a radio signal is hard to determine;
- the cost of broadcasting has declined over time.

As a broadcast medium, radio allows a small number of people to control messages sent to a wide audience. Hence it is natural that governments and large corporations should be keen to control the medium: it is a technology suitable for purveying propaganda. The problem of interference provides an excuse for governments to control the radio spectrum, allocating frequencies to a selected set of broadcasters.

Since radio broadcasts can go beyond borders, radio is a tool useful for waging international conflict. This explains the increasing number of foreign language broadcasts that enveloped Europe and beyond from the 1930s onwards. Since radio is subject to interference, the practice of jamming developed. The rise of deceptive broadcasting—“gray” and “black” stations—reflects the fact that it is difficult for listeners to determine the location of radio broadcasts.

Perhaps if radio had been and remained a highly expensive technology, it might have been completely dominated by governments and corporations. But as the costs of sending a signal declined, it became feasible for other groups to send as well as receive. In the first few decades of the century, amateurs were an important spur to radio development and provided the main challenge to government and corporate control. The relatively low cost of radio broadcasting is also the reason why insurgent movements have been able to set up stations. Indeed, the overall control of the spectrum by governments has always been precarious because of the technical ease with which new stations can be established.

In summary, it can be said that radio is a tool that from the beginning was taken up by governments and corporations, with special efforts made to apply it for the purposes of war. The technical characteristics of radio made it especially attractive for propaganda and counter-propaganda. At every stage in the development of radio, governments have attempted to

control it. Their efforts have been challenged most effectively by amateurs and insurgent groups, who have taken advantage of low costs to set up their own transmissions.

Although radio can also be used to promote peace—the League of Nations among others attempted to foster this use—radio cannot be considered to be a “neutral” tool, to be used just as easily for peace as war. The persistent efforts of governments and corporations to control radio also shaped its technical implementation. It would be relatively easy to make every radio receiver into a transmitter as well, if only for a short distance. Yet most people have only radio receivers, with a small number having shortwave or CB transmitters. As a broadcast medium, radio was too powerful to be made available without regulation to the general public. Even today, governments zealously hunt down “pirate” stations, even those with a very limited range.

This history shows how a new technology can be both shaped and used for the purposes of war. In the early decades of radio, governments either seized exclusive control over broadcasting or acquired control of the spectrum through licensing of stations and users of shortwave. Controls over broadcasting have become such a familiar feature of daily life that they are seldom questioned. Yet a different scenario can be imagined, in which the goal was empowering a multitude of grassroots voices, with accountability to communities rather than governments, station owners and advertisers. Imagining an alternative evolution of radio, as a technology for peace, can alert us to the importance of shaping and using today’s technologies for peace rather than war.

NOTES

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