

Border Patrols: Collapsing Boundaries and Constructing Surveillance

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Big Infrastructure Networks: Their visions and their outcome--The railway, the motorway, radio and television, the internet

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“Look at that parking lot in front of us. It’s full of German license plates. They take the train to Zurich and come back in the evening with their pockets full of money. There are foreigners all over the place. And I can’t get a job. Do you think I want to sell chickens? I’m a graphic designer.”

--Werner Bernhard, roast-chicken food cart vendor, Thayngen, Switzerland, March 2014¹

¹ “Swiss confront the costs of curbing foreign labor,” *New York Times* 19 March 2014.

The food cart vendors nestled around the train station of Thayngen, a town on the border of Germany and Switzerland, doubtless have ample opportunity to feed German drivers. Whether or not the transborder politics of Werner Bernhard, apparently developed in part by his regular surveillance of parking lots and license plates, is representative of the rest of the local food cart community would need to be further explored by ethnographic and gastronomic fieldwork. Typical or anomalous in his politics, it is safe to assume that all these food cart vendors would agree with Werner Bernhard – they can all see with their own eyes – that when border restrictions are removed, the transborder flow of everything increases. Put another way, removing restrictions attracts more attention to the patterns and practices of transborder flow.

This paper proposes and explores a paradox: the collapsing boundaries and increasing mobility across borders typified by users experiencing and traversing “Big Infrastructure Networks” also leads to increasingly nuanced and diverse monitoring and surveillance of those users as they experience mobility in those “Big Infrastructure Networks.” As trains increasingly crossed international borders, passport control (as one example) became more flexible and in some cases mobile, taking place on the train during the transnational journey. Transnational highways allowed more individuals to cross political borders with ease, and also saw the increasing monitoring of such elements as license plates (or tags) by border officials. Radio and television broadcasting cared not a whit for political borders, and at the same time various audience measurement techniques, the licensing of receiving sets in many nations, and

advertising research stand as three examples of increasing monitoring and surveillance of users in some societies, with various attempts to enforce political borders (usually a difficult endeavour) and monitor viewers in authoritarian societies. This was particularly visible along the border of the Iron Curtain during the Cold War, and still exists in some isolated cases today (with North Korea as the paradigmatic example.)

The so-called “new media” of the 1970s, 1980s, and 1990s such as satellites and cellular telephony allowed users more cross-border mobility while opening new opportunities for monitoring, such as tracking cellular telephony from cell tower to cell tower. The post-2000 mobile media explosion has made more media infrastructure users more mobile than at any time previous in world history, and has also exponentially raised the complexity and range of monitoring and surveillance of media infrastructures users in comparison with past monitoring and surveillance activities. Some of these monitoring and surveillance activities are done by the users themselves, such as noticing out-of-state or out-of nation license plates while motoring, or self-reporting mobility on the popularity of social media sites such as Facebook; some is done by commercial and corporate institutions, and some by state-level actors. This paper will explore the paradox of this situation: as mobility increases and the borders come down, the monitoring and surveillance of mobility goes up. I focus herein on a discussion of broadcasting, so several of my following examples are drawn from border-crossing and border-patrolling stories of radio, television, and satellites.²

² Given the length limitations of a conference paper, I have chosen to refrain from a detailed discussion of several aspects of broadcasting related to borders and mobility, including: propaganda; amateur or

Examples from radio and television broadcasting vary around the world, in part due to differing histories of emergent systems and practices. In some parts of the world, national governments were more active in border-patrolling of radio and television broadcast signals and reception than in other parts of the world, while everywhere in the world one could find individuals and institutions – some government entities, and some private and commercial entities – interested in counting and measuring broadcast audiences. Beyond measuring and monitoring audiences is the task of globally sharing the electromagnetic spectrum in ways that allow for efficient use of the spectrum by all parties, and ways that avoid situations where one or more transmitted signals interfere or hinder with the transmission and reception of other signals. This task is the domain of the International Telecommunications Union, which allocates spectrum to radio (and all electronic wave-based) communication technologies, assigns allocated spectrum space to nation-states, and maintains a register of allocations, as well as a register of the various spectrum assignments and uses of frequencies by its member-states. Established in Europe in 1865 as the International Telegraph Union, the ITU was absorbed into the United Nations system circa 1946 and currently has 193 nation-state members.³

“ham” radio; the hobby of “DXing” or receiving and logging distant stations; micro-broadcasting (very low power, very limited range); scanning reception (often done by listening to local police, fire, emergency, aviation, traffic, rail, and weather-reporting systems); and similar applications. All are of interest and relevance, although not discussed herein. Rather, this paper centrally focuses on large-scale consumer-oriented radio and television, or what might be called “mainstream” broadcasting examples.

³ For an overview, see “about ITU” at <http://www.itu.int/en/about/Pages/default.aspx>

All sorts of interesting things happen (and continue to happen) regarding broadcast frequencies, member-state spectrum assignments, and national borders, particularly in situations where large populations concentrations are at or near those national borders. In North America, the vast majority of Canadians reside within 100 miles of the US border, which has long stimulated various broadcast (and by extension, film-TV production and recorded music) protectionist measures by Canada.⁴ The “border blaster” radio stations just south of the US along the Mexican border pumped their signals across the US-Mexico border at hundreds of thousands of watts, delivering country music, advertising for mail-order goods, direct marketing of dubious medical products, humour and down-home wisdom from jokesters and story-tellers, and the fire and brimstone of soul-saving preachers to millions of US listeners from the 1930s into the 1960s.⁵ The post-war boom of television led to significant challenges in assigning TV frequencies for the east coast of north America, with demand in Canadian and US cities outstripping available frequencies (due to interference issues) until the

⁴ For recent book-length studies of Canadian media content rules, see Robert Armstrong, *Broadcasting Policy in Canada*, (Toronto: University of Toronto Press, 2010) and Ryan Edwardson, *Canadian Content: Culture and the Quest for Nationhood*, (Toronto: University of Toronto Press, 2008.) See also Roger Bird, ed., *Documents of Canadian Broadcasting*, (Ottawa: Carleton University Press, 1988); Knowlton Nash, *The Microphone Wars*, (Toronto, McClelland and Stewart, 1994); Serra Tinic, *On Location: Canada's Television Industry in a Global Market*, (Toronto: University of Toronto Press, 2005); Manjunath Pendakur, *Canadian Dreams and American Control*, (Detroit: Wayne State University Press, 1990); Richard Collins, *Culture, Communication and National Identity: The Case of Canadian Television*, (Toronto: University of Toronto Press, 1990.)

⁵ Gene Fowler and Bill Crawford, *Border Radio: Quacks, Yodelers, Pitchmen, Psychics and other Amazing Broadcasters of the American Airwaves*, (Austin: University of Texas Press, 2002.) No audience measurement statistics were released for the border stations, as the border stations not pay the audience measurement corporations such as Nielsen or Hooper ratings corporations for their ratings analyses.

allocation and assignment of new television spectrum space by the ITU – UHF – was added to the extant VHF allocation and assignments. Up to the rise of satellite distribution and cable services (which began to significantly grow in the 1980s) the broadcast borders of North America were, for the most part, conceptualized as congruent with the borders of nation-states. With some interesting Cold War exceptions regarding Cuba⁶ few governments tried to aggressively control or contain the flow of signals across North American borders. The satellite and cable explosion created a huge number of new cable-based networks, many of them global, and many of them North American. The largest transformation from this development has become the ubiquity of Spanish-language television across North America, a development of huge interest to advertisers, and one that shows North American mobility despite political efforts to control the northern-flowing border migrations of humans.

North American radio broadcasting took a trajectory largely shaped by private ownership of radio stations, commercialization as a major source of broadcast revenue, spectrum management and station wattage (basically, signal strength and geographical reach) that tried (and mainly succeeded) in giving listeners a wide range of choice among radio stations, and in conjunction with high-wattage stations, low-cost receiving sets that did not use higher-end components to boost the selective tuning of weaker-strength signals, allowing for most families and individuals, including those on the

⁶ For the story of black activist Robert Williams, who left the USA and broadcast to southern black listeners from Cuba, see Timothy Tyson, *Radio Free Dixie: Robert F. Williams and the Roots of Black Power*, (Chapel Hill: University of North Carolina Press, 2001.)

culp of indigence, to nevertheless afford a radio set. Political borders were, in most cases, of little consequence (except for cases of spectrum management to avoid interference with neighbouring stations) and the commercial audience rating measurement services (Nielsen, Hooper ratings, and so forth) did not measure audiences beyond political (national) borders in cases of cross-border listening.

Listeners did not pay a license fee to national governments for the privilege of radio or television reception. Western European radio broadcasting, on the other hand, with a few notable exceptions,⁷ saw government owned-and-operated radio stations, lower-wattage transmissions, higher-cost and more higher-end components in radio sets to selectively tune in weaker signals (thus making radio sets less accessible to poorer people), little to no advertising (particularly before the Second World War) and receiver license fees for listeners. This all led to a trajectory that shaped different perceptions, attitudes, and experiences of signal mobility and listener monitoring and surveillance than in North America.⁸

⁷ The most prominent example is Radio Luxembourg. The corporate website has a good timeline with many illustrations and photographs at http://www.radioluxembourg.co.uk/?page_id=2

⁸ In deference to space constraints of a conference paper, I have not included sections on Africa, Asia, Australia and New Zealand, and the Eastern Pacific in this paper. Very briefly: Australia and New Zealand – similar to Canada – had what is often called a “mixed system” of public and private ownership, with some commercialization. Radio broadcasting and listening was pervasive in pre-war Japan and in the populous cities of pre-war China, with post-war transformations for Japan largely going the way of American-style commercial systems, and totalitarian control in Communist China. Radio listening in Africa was largely an elite activity of colonials on the southern shores of the Mediterranean, and the Levant, with the significant exception of South Africa, which of course pursued apartheid measures in radio and even more draconically in its first decades of television: there was no television. The 1970s introduction of low-power television broadcasting into apartheid homelands near major white cities, aimed only at black and colored audiences by the South African government, saw South African whites within reach of the signals begin to watch “homeland” TV to the consternation of the apartheid government. An unintended consequence of the cultural boycott, which included Actor’s Equity as a

License fees meant enforcement by national governments, as the fees basically paid for government-produced broadcast programming. Thus governments pursued ways and means to detect radio and television reception in action as a way to catch scofflaws without a license. This is not surveillance and monitoring of flow across a national border, but it is activity surrounding a newly politicized border: the flow, up to the border (the full reach of the transmission), of the radio (or TV) signal, a signal reach and flow which was now politicized as a form of revenue for the state. Instituted first by the UK in 1927, license fees for radio and television sets remain prevalent to this day in much of Europe, and were rarely instituted by governments in the rest of the world.

European broadcast history also includes examples of authoritarian regimes exercising forms of border control over radio (and later television) audiences. National Socialist Germany developed and disseminated the *Volksempfänger* or “people’s receiver” which was a fixed-frequency set: it was untuneable (no selection of stations) and was manufactured to only receive National Socialist radio signals.⁹ For many people living under the National Socialist regime, this was the first radio in their home, as the

supporter, meant many global TV programs could not be imported into apartheid South Africa. South African TV grew significantly for all citizens and residents with the end of apartheid. The South Africa TV story is interesting; a forthcoming study is M. J. Evans, *Broadcasting the End of Apartheid: Live Television and the Birth of the New South Africa* (London: I.B. Tauris, 2014.)

⁹ Having said above the set was untuneable, this is a bit of a simplification, in that it was built to be able to receive a small number of German and Austrian signals. In technical terms the sets were manufactured with minimal standards for selectivity (tuning to select from available radio signals) and sensitivity (ability to pick up a weak radio signal.) The set could receive medium-wave (AM in the US) and long-wave (not used for broadcasting in the US) but of course did not have short-wave reception ability.

Volksempfänger was a low-cost affordable receiver for nearly everyone.¹⁰ During the Second World War the Nazis banned listening to anything other than Nazi-programmed stations in occupied territories, with severe punishment, including death, to those who defied the ban. Most German towns, and occupied towns, had one or more Nazi radio officers, whose duties including monitoring for those who defied the ban, but also included holding speeches, small group meetings, and street-corner conversations about the radio programs for a given week, encouraging listeners to hear the program and telling listeners how to interpret the program. Nazi-era television, although small-scale, was organized in Berlin and Leipzig as a sort of storefront experience, with seating for 30 to 40 viewers, accompanied by a television officer. The Union of Soviet Socialist Republics made extensive forays into political broadcasting, including some radio set manufacture, but a significant investment in what is sometimes called “wired radio.” This was basically a cable system, with residential buildings receiving three to five different wire-delivered government-programmed radio channels into their homes. This system was so prevalent in Soviet life and culture that the number of Soviets receiving radio programming by listening to a tunable radio set remained below the number receiving radio by wired systems until about 1970.

Radio in Europe in the 1950s and 1960s had two major examples of border-crossing conflicts and tensions: pirate radio, and station jamming. Pirate radio grew out of

¹⁰ The fixed-frequency radio set remains an approach to this day for certain broadcast conditions. One example is the distribution of fixed-frequency sets by religious institutions (usually Christian missions) in some of the poorest regions of the world. On rare occasions, radio stations will offer a fixed-frequency set as a promotional giveaway, pre-tuned of course to the radio station sponsoring the giveaway.

listener dissatisfaction with standard European music radio fare, with unlicensed (therefore, pirate) radio broadcasters setting up shop in European waters – literally in the water on boats and abandoned military installations in places like the English Channel and the North Sea-- and blasting pop music, to the frustration of government officials and the delight of teenagers.¹¹ The Cold War superpowers fought an airwave war with propaganda radio stations and subsequent attempts to interfere (jam) the radio stations of adversaries, thus making the stations difficult to receive. In both these examples, governments strived to protect their domains from the intrusion of various unauthorized or supposedly illegitimate radio signals from beyond their borders.

Cold War TV in Europe was also a terrain of contested borders. A prominent example emerged in the Helsinki – Tallinn area, one of the first Cold War border zones where two nations could easily receive and watch TV signals from each other – and they watched each other’s TV broadcasts extensively. Berlin and by extension Germany was another such area, and differing technical standards for television broadcasting and reception across the East-West Germany border did little to prevent enterprising viewers from seeing the TV signal from the other side; most of East Germany could receive a West German TV signal, with the exception of the area around Dresden, known sardonically by the end of the Cold War as “the valley of the clueless.”¹² As Cold

¹¹ On UK pirate radio, see Adrian Johns, *Death of A Pirate: British Radio and the Making of the Information Age*, (New York: W. W. Norton, 2012.) See also Robert Chapman, *Selling the Sixties: The Pirates and Pop Music Radio*, (London: Routledge, 1992.)

¹² James Schwoch, *Global TV: New Media and the Cold War, 1946-69*, (Urbana: University of Illinois Press, 2009), chapters 2 and 3.

War tensions began to slowly resolve in the 1970s and 1980s, new tensions emerged in Europe, particularly in terms of license fees, the revenue from fees spent on national programming, and who in a given nation did, or did not, count as a member of the audience. German state television programmers resisted for years the growing call to include Turkish guest worker populations as part of audience research, realizing that if these guest workers were “counted” as part of the German TV audience, their passion for programming from Luxembourg (which included many programs aimed to attract guest worker audiences) would in fact undermine license fee revenue, as Germany also included audience size as part of determining how much of the license fee revenue would go to the various state broadcasters and TV programmers. This move to count citizen viewers only – not the combination of citizen viewers and resident viewers – is an unusual variation on the idea of broadcasting and border patrol, in that it was an attempt to patrol and divide audiences literally within the signal reach, or border space, of a TV station, a far different idea than patrolling a broadcast border on the basis of who is, and who is not, physically located inside the signal reach of a station. By the end of the twentieth century, German audience research included the viewing habits and program choices of both citizens and residents, with the result of a reduction in license fee revenues to the German state TV broadcasters and programmers.

The end of the Cold War, in Europe and globally, coincided with an incredible rise of so-called “new media” such as cellphones and personal computers, rapid growth in global Internet connectivity, the prevalence of TV reception directly from satellite feeds,

and the onset of a disturbing and growing legacy: massive heaps of abandoned analog TV sets, videocassette machines, “last year’s model” of popular smartphones, and much more electronic waste. All signs and indicators point to massive global growth, and estimates suggest the number of mobile-connected devices on Earth exceed the human population of the planet.¹³

If monitoring and surveillance of contemporary users of global media – particularly mobile media – can be found everywhere and is being conducted by everyone from national governments (including intelligence agencies) to research firms to fashionistas to hackers as we all roam a supposedly borderless world, the ever-expanding world of electronic waste still has sadly too little of the rigor, care, and discipline of border patrolling in the name of global media that the world needs to come to grips with this environmental problem. While it is true that some nations and organizations are taking important steps to monitor, control, and safely tame and dispose of electronic waste, this constantly expanding global pile of media junk flows everywhere, causing health hazards and serious climate degradation. In conclusion, an examination of broadcasting and border patrols reveals a double paradox: the ability of media consumers to be mobile and cross borders with ease has led to the increasing monitoring and surveillance of media consumers everywhere, and the abandoned detritus of global

¹³ “The number of mobile-connected devices will exceed the world’s population by 2014.” *Cisco Visual Networking Index: Global Mobile Traffic Forecast Update, 2013-2018*, released 5 February 2014, at http://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/white_paper_c11-520862.html

media use remains largely unpatrolled, unmonitored, and unregulated as it piles up on land and upon (and beneath) the sea.¹⁴

Frankly, we know more about another media waste problem – outer space debris – than we now about the media waste problem on our own planet. This strange situation – knowing the outer space debris problem in deep detail while knowing little to nothing about the electronic waste problem here on Planet Earth – also has its roots in border patrol and surveillance, for our knowledge of outer space debris is yet another superpower legacy of closely watching the heavens to know that activities of the adversary.¹⁵

We know the media and electronic waste in outer space, but have yet to begin the process of deeply knowing the media and electronic waste on our own planet. Perhaps the world needs to begin to learn how to globally patrol and monitor electronic waste with the same diligence and enthusiasm we now monitor global media users.

In conclusion, research on various aspects of broadcasting carried out over the last fifty to seventy-five years produced a wide range of interesting and revealing findings about listeners, viewers, stations, networks, governments, corporations, and social movements

¹⁴ Richard Maxwell and Toby Miller, *Greening the Media*, (New York and London: Oxford University Press, 2012.) The major global regulatory initiative for electronic waste is the Basel Convention on the Control of Transboundary Movements of Hazardous Waste and their Disposal, commonly known as the Basel Convention, ratified in 1989 and entered into force in 1992. See the Basel Convention website at <http://www.basel.int/Home/tabid/2202/Default.aspx>

¹⁵ W. Patrick McCray, *Keep Watching the Skies! The Story of Operation Moonwatch and the Dawn of the Space Age*, (Princeton: Princeton University Press, 2008.) NASA has a comprehensive website about space debris at <http://orbitaldebris.jsc.nasa.gov/>

regarding questions of transportation, traffic, and mobility. In the same vein, interesting findings regarding both users and the big infrastructure networks of telecommunication systems upon which broadcasting is built continue to demonstrate fascinating patterns of circulation and growth from both the broadcast and from the internet eras. In comparison with the expansion of research and knowledge regarding broadcast consumers-users and large-scale global infrastructure networks such as telecommunication systems, our knowledge and understanding of the global traffic, transportation, and mobility of the material artifacts of the broadcasting era, and by extension, the contemporary mobile-internet era pales by comparison. This lack of knowledge and awareness becomes all the more troubling with each passing year, as the world creates ever-increasing inventories of new electronic communication artifacts for users and consumers the world over, while paying scant attention to the problems created by the transportation, traffic, mobility, and finally the stasis – the ever-growing junkyards-- of abandoned broadcast and internet technologies and artifacts.