The Message is the Message Too: National Discourse and Local Political Consequences[†]

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We examine how nationalized media content shaped political behavior during the initial rollout of Canada's public-private television network, when a policy prohibiting market competition restricted viewers to only public or private programming. We find citizen and politician engagement diminished in districts with public television, where programming was nationally focused by mandate. Yet engagement remained steady in districts with private television, where national programming was bundled with local news. In public districts, weaker re-election incentives increased incumbency value, leading incumbents to speak less about their constituencies in parliament and demonstrate greater party loyalty in roll call votes, consistent with reduced accountability.

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1 Introduction

Before the arrival of television, newspapers were the primary medium for political news, offering locally focused, information-rich content that fostered political engagement and accountability (e.g., Snyder and Strömberg, 2010; Gentzkow et al., 2011; Drago et al., 2014). Television disrupted this model by nationalizing news coverage and reducing the overall volume of informational content, in part by shifting emphasis toward entertainment (Hopkins, 2018; Angelucci et al., 2024). This dual transformation—the nationalization of media content and the decline of information-rich content—led to a sharp drop in political participation following the advent of television (Gentzkow, 2006; Campante and Hojman, 2013; Ellingsen and Hernæs, 2018). While the political consequences of these combined changes in television content are well understood, isolating the effects of each remains an empirical challenge crucial for identifying the causal mechanisms behind political participation.

In this paper, we focus our analysis on Canada, where television first went to air in September 1952. Within just two years, 75 percent of the population lived within range of a television signal, and by 1958, more than 90 percent of Canadians had access to the nationwide television network (Peers, 1979; Cole, 2002). The remarkable rate of this coast-to-coast expansion was made possible by two key aspects of the institutional environment: a shared network of public and private broadcasters, and a "single-station policy" that prevented the expansion of both public and private television into the same market. This institutional arrangement ensured that television reached new markets before competition was introduced, implying that citizens received either public or private television—but never both.

We leverage this unique setting to show that nationalized media content is a key determinant of political behavior. Importantly for our empirical design, public and private stations aired distinct informational content. The public broadcaster's *raison d'être* was to produce a national broadcasting service that showcased Canadian talent and fostered a shared Canadian consciousness across the country's diverse population. Reflecting this mandate, programming was nationally focused by design, and centrally produced in Toronto or Montreal for nationwide distribution during the early development of the national service. By contrast, private stations were required under their licensing agreements to carry a minimum portion of the national broadcasting service each week, which they scheduled alongside locally produced news and third-party programming (Royal Commission on Broadcasting, 1957). This setting offers a rare opportunity to observe *who* adopts *what* type of information, allowing us to (i) compare voter turnout among citizens with access to the same medium—television—but exposed to different content—local versus national—and (ii) compare the response of politicians elected by voters exposed to these different types of content.

Using archival records of television transmitter features, we estimate television reception contours across successive parliamentary sessions and overlay them onto newly digitized electoral district maps. These data are linked to our two main outcomes: voter turnout and a new index quantifying the local orientation of parliamentary speeches. To construct this index, we apply a Named Entity Recognition algorithm to the full text of floor speeches given by each member of Parliament (MP), extracting geographic references and determining whether MPs are speaking about locations within their own district or elsewhere. The resulting index provides a concrete measure of local political responsiveness. Together, these outcomes allow us to trace how exposure to nationalized media affects the responsiveness of both voters and their elected representatives, with the comparison between public and private television districts providing the key source of variation.

We find that the introduction of television reduced voter turnout by 2.8 percentage points, or about 37 percent of a standard deviation. A similar pattern emerges in legislative behavior, with television reducing the frequency with which MPs spoke about their constituencies by 0.29 standard deviations on our political responsiveness index. While these average effects align with prior evidence on the political consequences of television, they mask distinct underlying effects associated with the content differences between public and private broadcasters.

A key advantage of our empirical design is its ability to condition on the entry of television and isolate the direct effect of nationalized media content. Voter turnout was 2.9 percentage points higher in districts with private television access compared to those with public access, and the local orientation of parliamentary speeches was 0.78 standard deviations higher. Relative to districts without television, the entry of public television reduced voter turnout by 2.1 percentage points and lowered the local orientation of parliamentary speeches by 0.29 standard deviations—effects we attribute to nationalized content. Survey evidence from the *Canadian Election Study* further supports this interpretation. Respondents in public television districts were significantly less likely to engage in political discussion, campaign for a politician, display a political sign, contact a politician, or try to persuade friends how to vote, relative to those in other districts. No such decline is observed in private television districts. These estimates suggest that locally oriented programming, as provided by private broadcasters, helped preserve engagement levels, while nationalized content reduced them.

The decline in political participation observed only in public television districts cannot be explained by differences in entertainment content. Programming records confirm that airtime devoted to information and entertainment was balanced across public and private stations. Political slant also cannot account for the results, as vote shares by party or ideology were unaffected by the entry of either public or private television. Using newly digitized records of daily and weekly newspaper circulation for urban centers, we find no systematic difference in the availability or consumption of local newspapers across station types. Taken together, these findings suggest that these alternative mechanisms are inconsistent with the baseline evidence.

Overall, these results show that the political effects of television depend not only on the arrival of the medium, but also on the geographic orientation of the information it transmits. McLuhan (1964) famously quipped that *the medium is the message*, emphasizing the primacy of the communication technology over the content it carries. Our findings suggest that *the message is the message too*.

We further examine political accountability by analyzing a second legislative outcome: how often MPs break from party-line votes. In parliamentary systems, where the incumbent government must maintain the confidence of its legislators, MPs have strong incentives to support their party, even at the expense of constituency interests. While our speech-based measure captures how often representatives speak on behalf of their local constituencies, this rhetorical localism may not reflect actual accountability unless it is accompanied by actions that prioritize constituency over party loyalty. We test this empirically by examining whether exposure to public or private television affects the likelihood that a MP votes against their party in Parliament. We find that MPs elected in districts served by public television were significantly more likely to vote along party lines than those in private television districts—a difference of about one standard deviation.

These patterns suggest that national media can weaken the alignment between constituents and their local representatives—a mechanism we investigate by examining electoral competitiveness. We find that television increased the value of incumbency only in districts served by the public broadcaster, consistent with a reduction in electoral competition where nationalized content lowered citizen knowledge of local candidates—notably challengers to the incumbent. We further show that our findings on MP legislative behavior (speech and voting) are robust to a specification that leverages within-incumbent variation, ruling out voter selection of new politicians as a first-order explanation. As elections become increasingly nationalized, incumbent MPs respond to diminished electoral incentives and appear to prioritize party loyalty over constituency service. Overall, our analysis shows that nationalized media content reduces political engagement and electoral competition by weakening the informational link between voters and their local MPs—a pattern consistent with diminished electoral incentives for local representatives to remain accountable to their constituents.

To interpret these findings as causal, it is necessary we tackle two key empirical challenges. The first challenge results from a district's selection into public or private television, where the decision to do so might correlate with regional characteristics that also shape political behavior. We address this issue with electoral district fixed effects and by controlling for district characteristics that we flexibly allow to vary across election cycles. Most importantly, we confirm that, among districts receiving any television signal, both the factors that influenced where stations were built and baseline political outcomes are balanced between those served by public versus private television. This balance is not surprising given the rapid network expansion: the urgency to secure a private license in a regulatory environment suppressing competition led to a scramble between prospective proprietors, rather than a calculated move based on the political prospects of a station's placement. Consistent with this, our estimates for public and private television are remarkably insensitive to various subsamples that exclude major cities, capital cities, and densely populated districts—i.e., the locations most likely to be targeted for politically strategic station placement. We also document that most private television stations were licensed to private radio station owners, who upgraded pre-existing radio infrastructure rather than building entirely new transmitters. Any selection into private radio broadcasting prior to our sample period is absorbed by district fixed effects, and our results remain unchanged when we control for the number of private radio stations in a district interacted with election-year fixed effects. Altogether, these findings support our interpretation that the treatment effect of interest is not a by-product of selection.

The second challenge results from the non-random expansion of the television network: factors that determine the timing and location of television transmitter installations (e.g., population density) may correlate with our political outcomes of interest. We account for the non-random timing of a district's exposure to television with a measure of expected signal strength. Based on the insights of Borusyak and Hull (2023), we model the data generating process of the television network expansion, accounting for the correct number of active transmitters and their sampling probability in a given election year. The result is a new distribution of television reception contours based on the expectation of a signal, which closely, but not exactly, matches the distribution of actual signal strength. We generate 500 of these counterfactual networks and calculate the average value of a district's non-randomness in television exposure—its expected signal strength—and include this as a control variable in our empirical model. The intuition of this solution is straightforward: the variation that we rely on in a regression is the difference between the actual and counterfactual network—signal strength above or below what is expected—and thus an outcome of chance.

Related Literature Our findings shed new light on how national media content shapes political behavior, contributing to a broader literature on the political effects of new media technologies.[1] We build on the seminal work of Gentzkow (2006), who shows that the introduction of television in the United States reduced voter turnout by crowding out political information. He argues that, by substituting away from other media with more extensive local political coverage, television reduced the total amount of political information voters received, and shifted attention from local to national content.[2] Support for this mechanism comes from his finding that television's effects on turnout were largest in off-year congressional elections, when local information is most salient—an empirical pattern consistent with the proposed channel. Ellingsen and Hernæs (2018) document a similar pattern using the expansion of Norwegian commercial television, and Angelucci et al. (2024) provide detailed evidence of the substitution away from newspapers that followed the entry of television in the U.S., including the nationalization of news content that followed. Related studies on the entry and exit of local newspapers underscore the value of local political coverage for engagement (Gentzkow et al., 2011; Drago et al., 2014), although increased media competition can have the opposite effect if local coverage declines as outlets compete for readership (George and Waldfogel, 2006; Cagé, 2020).

Yet when one medium substitutes for another, there is a combined shift in content that poses an identification challenge: television differs from other media not only in its greater focus on entertainment programming, but also in the broader, national orientation of its coverage. These combined changes confound the effect of receiving less information with the effect of receiving less local information. Our contribution is to isolate this distinction by leveraging variation in content among television viewers, rather than across media types. This allows us to identify the distinct role of local content—a mechanism that is otherwise obscured in substitution-based designs—and to provide direct evidence of Gentzkow's (2006) proposed channel: the crowding out of *local* political information. As a by-product of this design, we also offer generalizable results for both voters and politicians that speak to the nationalization of media content, rather than an effect specific to the entry of television.

Other quasi-experimental studies isolate similar sources of variation in media content, although key differences remain in design and scope. Snyder and Strömberg (2010) leverage differences in lo-

[1] For example, television tends to reduce voter turnout (Gentzkow, 2006; Althaus and Trautman, 2008; Campante and Hojman, 2013; Ellingsen and Hernæs, 2018; Angelucci et al., 2024) and shape political allegiance (DellaVigna and Kaplan, 2007; Enikolopov et al., 2011; Martin and Yurukoglu, 2017; Durante et al., 2019; Ash et al., 2024; Firoozi, 2024). The Internet similarly has depressive effects on voter responsiveness (Falck et al., 2014; Gavazza et al., 2019), although the evidence is mixed depending on the context (Miner, 2015; Campante et al., 2018; Donati, 2023), and in some cases elicits participation in the form of protests (Fergusson and Molina, 2019; Enikolopov et al., 2020; Manacorda and Tesei, 2020; Amorim et al., 2022; Enikolopov et al., 2023). Another strand highlights the positive impact of new media technologies on political behavior, particularly from newspapers and radio (Strömberg, 2004b; Snyder and Strömberg, 2010; Gentzkow et al., 2011; Drago et al., 2014; Wang, 2023). This large body of research is supported theoretically by the notion that media matters because it transmits information to voters (Strömberg, 2004a; Chiang and Knight, 2011; Prat and Strömberg, 2013; Abramson and Montero, 2023). The geographic scope of content also has broader implications for democratic accountability, influencing not only political engagement but also outcomes in areas like policing (Mastrorocco and Ornaghi, 2024), social norms (González-Torres, 2023), or the economic fallout experienced by communities following a mass shootings (Brodeur and Yousaf, 2025).

[2] This substitution effect also extends beyond the political realm (see DellaVigna and Ferrara, 2015; Campante et al., 2022).

cal newspaper coverage across congressional districts in the United Stated, based on the alignment of district boundaries with media markets. Their findings illustrate the political value of local information, from which the disengagement effects of nationalized news can be inferred but not directly estimated. Oberholzer-Gee and Waldfogel (2009) adopt a similarly innovative approach by exploiting the staggered expansion of Spanish-language local news into metropolitan areas. As they note, "the ubiquity of local news programming across all U.S. metro areas makes it impossible to study its effects on the general population" (p. 2120). For this reason, they compare Hispanic and non-Hispanic viewers, identifying increased participation among Hispanic-Americans where Spanish-language news is available. While the political relevance of local news is central to the mechanism, the cultural relevance of Spanish-language news may also be a contributing factor in their analysis. Perhaps the main difference in our study is that the source of variation reflects a nationwide expansion, allowing us to study local versus national content effects on the general population.[3]

We also build on a strand of literature that links media content to political accountability. Mass media connects voters and politicians through the information it provides, allowing citizens to evaluate political competence and act on that knowledge at the ballot box (Strömberg, 2015). When national news shifts the attention of voters away from their local candidates, the resulting disengagement weakens accountability by distorting how voters perceive and respond to politician performance. While some studies attribute these patterns to a voter selection mechanism (Ferraz and Finan, 2008; Snyder and Strömberg, 2010; Larreguy et al., 2020), our results point instead to a disincentive effect: in districts exposed to nationalized content, politicians face weaker re-election incentives and become less responsive to their constituents (Besley and Burgess, 2002; Snyder and Strömberg, 2010; Drago et al., 2014; Le Pennec, 2024).[4] Our analysis offers a new lens on political accountability by linking the nationalization of media content to the localism of legislative speech, a pattern we trace through to legislative behavior of MPs, where reduced localism in speech is accompanied by greater party loyalty in roll call voting.

Interestingly, our finding that exposure to nationally oriented television programming amplifies the incumbency advantage is ostensibly at odds with a well-established body of political science research. In the American presidential system, nationalization of electoral behavior—often observed through straight-ticket voting—has reduced the value of incumbency (Jacobson, 2015; Carson et al., 2020). The nationalization of U.S. elections has been linked to factors such as rising negative partisanship (Abramowitz and Webster, 2016) and the consolidation of local media markets by national conglomerates (Martin and McCrain, 2019). Most relevant to our study is the substitution of local political coverage for national news, which limits a citizen's ability to evaluate their local candidates independently of national party narratives (Moskowitz, 2021; Angelucci et al., 2024).

Our contribution to this literature is to show that the relationship between nationalized media and the incumbency advantage functions differently in a parliamentary democracy. In Canada, the national government is formed through the election of local MPs, where the party that wins the majority of seats in the legislature forms the executive branch. In other words, national leadership is achieved through local

[3] Durante et al. (2019) and Bursztyn et al. (2023) similarly study media content effects by comparing outcomes among television viewers, though their analyses do not focus on the geographic orientation of content.

[4] Sustaining re-election incentives may require dynamic monitoring (Bobonis et al., 2016), and with the rise of digital media, some incumbents rely on social media to maintain support among loyal constituencies rather than responding to offline incentives (Bessone et al., 2022).

representation, meaning that nationalized political news limits exposure to local candidates—especially challengers—leaving voters with little information to exercise at the ballot box beyond the platforms of party leaders. Without local political knowledge, voters appear to default to the incumbent as the familiar option (Prior, 2006; Dal Bó et al., 2009; Jankowski and Müller, 2021). By weakening the informational link between voters and their local representatives, nationalized programming has distinct consequences for accountability, reinforcing the need for local media to sustain electoral engagement and MP responsiveness.

Finally, our measure of expected signal strength offers a new way to account for the non-random placement of television transmitters. Most studies using signal strength as the treatment will control for free-space signal decay, which assumes a smooth inverse-square distance decay over flat terrain (see Olken, 2009; Enikolopov et al., 2011; Yanagizawa-Drott, 2014; DellaVigna et al., 2014; Adena et al., 2015; Bursztyn and Cantoni, 2016; Wang, 2021, among others). However, the counterfactual assumption of flat terrain is likely violated in our context, since television transmitters are typically placed on elevated terrain. Treatment is also more likely in districts near large economic centers, introducing a complication due to non-random proximity. Thus, even if the timing of a transmitter's placement is conditionally random when adjusting for free-space signal strength, the timing of a district's exposure may not be. Drawing on the methodology introduced by Borusyak and Hull (2023), our measure of expected signal strength accounts for a district's non-random timing of exposure without having to make an assumption about the topography of the Canadian landscape. While both estimation strategies produce similar results, covariate balance improves only with our expected signal strength measure, underscoring the potential value of our approach for future research.

2 Background

2.1 History of Canadian Broadcasting

Canadian broadcasting developed as a hybrid system, combining elements of the British Broadcasting Corporation's public service model with the commercially driven, market-oriented approach dominant in the United States. This institutional design reflected a strategic response by the federal government to two core challenges: Canada's geographically dispersed population and the cultural influence of American media. Since the earliest days of radio, these challenges featured prominently in parliamentary debates and became central to how the state designed and regulated the national television system. Understanding the context behind television's entry into Canada therefore requires attention to the structural constraints that policymakers faced.

Challenges Canada's vast geography and uneven population distribution posed a fundamental challenge to the development of a cohesive national broadcasting system. Given the high fixed costs of building stations, early private radio broadcasters concentrated in large urban centers, where dense audiences promised higher advertising revenues (Royal Commission on Broadcasting, 1957). In contrast, sparsely populated rural areas remained largely underserved due to weak commercial incentives. The profit motive of private broadcasters also tethered Canada culturally to the United States: popular American programs drew larger audiences and higher advertising returns, and the cost of licensing American programs was typically less than the cost of producing original Canadian content (Rutherford, 1990).

As legislators confronted these challenges in developing a nationwide television network, Canada's cultural adolescence further stoked fears of American influence, placing national identity squarely in the government spotlight (Armstrong, 2010). Policymakers worried that unregulated television development would replicate the failings of radio broadcasting: a fragmented system that lacked nationwide coverage and relied heavily on American programming. The government concluded that only a publicly led, centrally coordinated system could ensure both rapid national expansion and the sustained production of Canadian programming.[5]

Structure and Policy When the federal government announced its television broadcasting plan in 1949, it emphasized continuity by maintaining the same structural relationship between public and private stations which had governed radio broadcasting (Weir, 1965; Peers, 1979). This relationship was first legislated by the 1932 *Radio Broadcasting Act*, which defined broadcasting in Canada as a public service rather than merely a commercial enterprise, and allowed private participation under conditions of public oversight. The 1936 *Broadcasting Act* further institutionalized this mixed public-private model by creating the Canadian Broadcasting Corporation (CBC)—Canada's public broadcaster. The CBC was mandated both to deliver a national programming service and to oversee the broader broadcasting system as its regulator. Privately owned stations were licensed as affiliates of the CBC within this national network, although they retained substantial autonomy.[6] This institutional arrangement remained in place until the passage of the 1958 *Broadcasting Act*, which came just five months after the last election covered in our empirical analysis.

Shortly after announcing its intention to develop a nationwide television network, the federal government appointed the Royal Commission on National Development in the Arts, Letters and Sciences—commonly known as the Massey Commission—to assess the country's cultural needs and recommend principles for regulating radio and television broadcasting (Royal Commission on National Development in the Arts, Letters and Sciences, 1951, p. xii). After two years of extensive public consultation, the Commission's 1951 report warned against permanent dependence on American programming and called for state-sponsored development of Canadian television (Rutherford, 1990). Prime Minister Louis St. Laurent embraced these recommendations, adopting the report as a blueprint for Canadian television policy. The federal government affirmed that broadcasting was a public service essential for national unity and cultural development, mandating the CBC to develop a national programming service as an expression of Canadian identity, a tool for national cohesion, and a bulwark against the commercial interests of private broadcasters.

[5]The Minister of Transport Lionel Chevrier explained to the 1953 Special Committee on Broadcasting that American programs were welcome in Canada, but it must remain an objective of the government that a substantial portion of television programming be about Canada and produced by Canadians. He underscored this point in defense of the state-sanctioned, national system: "It is perfect nonsense for anyone to suggest that private enterprise in Canada, left to itself, will provide Canadian programs. People who invest their money [...] will certainly invest it where it will make the most profit—by importing American programs" (Chevrier, 1953, p. 3011).

[6]Despite their formal affiliation with the CBC, private stations exercised considerable control over programming. The CBC "imposed little control on its affiliates" (Filion, 1996, p. 455). Rutherford (1990) reiterates, "[The CBC] had proved an exceedingly lenient, and generous, master of private television." (p. 60) In fact, an early criticism of the CBC's regulatory authority was an apparent lack of control over the content aired on private stations (Raboy, 1990).

The Single-Station Policy A key innovation in television policy—and central to our empirical design—was the implementation of the single-station policy. Designed in response to the tendency of private radio broadcasters to cluster in densely populated markets, the policy limited each market to a single television station. The policy's purpose was to extend coverage to as many communities as possible, rather than duplicating service in larger cities. Recognizing the substantial cost of establishing a nationwide network, the government also viewed the policy as a means to coordinate the actions of the public broadcaster and its private affiliates, enabling a rapid and geographically expansive rollout of the national television network. For all the challenges previously discussed, a joint effort was viewed as essential for delivering Canadian content to a truly national audience. The single-station policy similarly remained in place until its repeal by the 1958 *Broadcasting Act*.

2.2 A Nationwide Television Network Expansion

Television broadcasting began in Canada in September 1952, with two public stations launched in Montreal and Toronto under the direction of the CBC. In line with the Massey Commission's recommendations, the federal government prioritized a phased and public-led rollout, while also beginning to welcome applications from private broadcasters. In a December 1952 address to Parliament, Minister of National Revenue J. J. McCann affirmed this policy vision:

> "*The government believes [television] should be so developed in Canada that it is capable of providing a sensible pattern of programming for Canadian homes with at least a good portion of Canadian content reflecting Canadian ideas and creative abilities of our own people and life in all parts of Canada. [. . .] The objective will be to make national television service available to as many Canadians as possible through co-operation between private and public enterprise. [. . .] Since the objective will be to extend services as widely throughout Canada as is practicable, no two stations will be licensed at the present to serve the same area. [. . .] It is desirable to have one station in as many areas as possible before there are two in any one area.*" (McCann, 1952, p. 409)

In the months following the announcement, a flood of applications poured in from private interests—mostly radio and newspaper owners (Ellis, 1979). Although the CBC Board of Governors exercised regulatory oversight, it did not have exclusive authority over where public or private stations could be located (Peers, 1979). Reflecting this limited control, private stations ultimately served six of ten provincial capitals during the single-station era, despite the CBC's locational advantages in Toronto and Montreal. Licensing procedures for private stations followed norms established in radio: applications were screened for technical feasibility by the Department of Transport, published in the Canada Gazette, and subject to public hearings before the CBC Board. The Board's recommendations were then forwarded to the Minister of Transport and finalized by the Governor in Council (Royal Commission on Broadcasting, 1957).

The single-station policy served its intended purpose, leading to rapid, nationwide television expansion. Within two years, television reached 75 percent of Canadian households (Peers, 1979). By 1958, a full coast-to-coast network had been established, reaching approximately 90 percent of Canadians and becoming, at the time, the world's largest television network in geographic coverage (Rutherford, 1990;

Cole, 2002). In just six years, a national network took shape, comprising 58 transmitter and rebroadcasting towers (12 public and 46 private). Audience growth was equally remarkable. Canadians purchased 82,000 television sets in September 1954 alone (Rutherford, 1990), and by 1955, Canadians had spent an estimated half billion dollars on television sets, and Canada ranked second only to the United States in the number of stations, coverage area, sets per capita, and program production (Raboy, 1990). By early 1958, more than three million receivers were in use (DBS, 1959), households were watching nearly five hours of television daily (DBS, 1961), and the rate of television uptake was nearly double that of the United States (Weir, 1965).

2.3 Public and Private Television Content

To interpret the findings of our empirical analysis, we make a key assumption that public and private television stations differed primarily in the geographic focus of their informational content. In this section, we summarize evidence supporting this claim. Drawing from parliamentary transcripts (i.e., Hansard), programming schedules and the historical record, we demonstrate that public stations adhered closely to the national programming service, while private stations, shaped by commercial and regulatory incentives, bundled required national content with programming tailored to local audiences.

National Programming Service In the early days of Canadian television, the national programming service was produced by the CBC and distributed across the country. Mandated to showcase Canadian talent and address national issues, network programming aimed to unify the country's diverse population through a shared national consciousness. To this end, the national service featured not only news and political affairs but also dramatized entertainment, educational shows, children's programming and more. Meeting this broad cultural mandate demanded substantial content volume, which proved increasingly costly for the public broadcaster. Moreover, many standard production costs were effectively doubled by the need to produce separate English- and French-language services. To manage these financial pressures, the CBC concentrated television production in Montreal and Toronto throughout the 1950s (Rutherford, 1990). This centralized model—rooted in radio practices dating back to at least the 1940s (Raboy, 1990)—offered a cost-efficient means of fulfilling national service obligations, but it inevitably skewed content production toward national rather than local concerns.[7]

All television stations carried some portion of the national service, but programming records indicate that the CBC relied on national programming substantially more than private stations in both languages of service (Smythe, 1957). This divergence—where the CBC relied more heavily on national programming and private stations more on local content—reflected both the structural role assigned to private stations and the financial incentives they faced to produce locally relevant material.

Local Content Development Private stations routinely packaged the national programming service with local newscasts, farm reports, community-interest shows and other programming designed to appeal to local audiences. The need to carry a portion of the national service each week was part of the

[7]For instance, the CBC's daily national newscast, launched in 1953, focused on national and international affairs and aired coast to coast. Local bulletins such as CBC Toronto's *Metro News* and CBC Montreal's *Edition Métropolitain* did not appear until the late 1950s (Rutherford, 1990).

public service obligation outlined in their licensing agreements (Armstrong, 2010). To balance this obligation with their commercial viability, "private stations concentrated on local production, happy to leave the expensive evening shows to the CBC" (Rutherford, 1990, p. 86). Indeed, only 2 percent of the national programming service was non-CBC produced in the late 1950s (Rutherford, 1990). By relying on advertising revenue from local businesses, private stations had a direct financial stake in appealing to the tastes and interests of their surrounding communities, since retaining local viewership was essential to securing advertising dollars and remaining profitable. This financial incentive, coupled with the centralized production model of the CBC, left local content production largely to private stations, who were better positioned to serve regional audiences. The report of the Royal Commission on Broadcasting speaks directly to this comparative advantage in local content production:

> "*Knowledge of local conditions and adaptability to local needs can best be provided by having a number of independent local units in the system. This is one of the principal reasons why we are strongly of the opinion that the continued presence of private elements in the system should be recognized and placed beyond uncertainty and doubt.*" (Royal Commission on Broadcasting, 1957, p. 147)

The divergence in public and private television content also stemmed from the government's structural priorities. When the CBC was established, it was tasked with delivering national programming, effectively prioritizing national interests over local ones (Weir, 1965). This conception of the public broadcaster's role ceded local concerns to private stations, which were cast in a supporting role. Over time, this public/national versus private/local distinction became institutionalized in both policy and practice. Parliamentary debates and government discourse from the period often reinforced this dichotomy. For example, at a public hearing of the Massey Commission, counsel to the Commission noted that every parliamentary committee on broadcasting had endorsed a "nationally-owned radio system [with] full and complete national control over all broadcasting," while acknowledging that private stations served the "particular needs of community areas" (Raboy, 1990, p. 96). Davidson Dunton, then-chair of the CBC Board of Governors, echoed this view of private broadcasters, stating: "our field is in national network broadcasting, whereas their [private] field is local community broadcasting" (Raboy, 1990, p. 97). Summarizing its two-year investigation of the public-private system, the 1957 Royal Commission concluded that "a large majority of witnesses, even including some ardent champions of public broadcasting, agreed that there was a place in Canada for the private broadcaster, even though many felt that place should be restricted to the local level" (Royal Commission on Broadcasting, 1957, p. 42).

Quantifying the Divergence in Content What matters most for our analysis is the extent to which public and private television content diverged in two key respects: (i) the relative emphasis on informational versus entertainment programming, and (ii) the degree to which informational content reflected local rather than national concerns. To shed light on this, we draw on Appendix XIV of the Royal Commission on Broadcasting Report (Smythe, 1957), the most comprehensive study of early Canadian television programming. All evidence summarized here is drawn solely from this source.[8]

The balance of informational and entertainment programming was broadly similar across public and private stations (Table 1). Informational content accounted for about 26 percent of total airtime across all

[8] The report's analysis is based on the week of January 15-21, 1956, selected as representative because no major events disrupted normal programming.

stations and viewing hours, with *news and weather* and *political and public affairs* (hereafter jointly referred to as *news and politics*) comprising 7.3 percent of all programming, or roughly 28 percent of informational content (Table A.1). Public stations devoted 29 percent of airtime to informational programming, compared to 25 percent on private stations (Table A.2, Panel A). This small difference is driven almost entirely by public stations on the French-language network (Panel C), where a 7 percentage-point gap reflects the gap in *youth educational programming*—content that neither targets nor informs voters. If anything, this difference would bias against our findings, though we view it as inconsequential. Disaggregated by audience type, public stations allocated a greater share to informational content during general audience hours, while private stations devoted slightly more during adult audience hours. But neither is particularly large, and on net the opposing patterns effectively cancel each other out. Consistent with this, the Commission's report speaks to both station types devoting comparable airtime to *news and politics* during these periods, with no such programming during hours aimed at children or daytime audiences. Overall, informational content, including *news and politics*, aired at similar times and in similar amounts across public and private stations.

By contrast, the extent to which informational content reflected local concerns varied sharply by station type. About 63 percent of informational programming originated from the CBC's national *network* service, while 29 percent was produced as *local* live content (Table A.1). Disaggregating by station type reveals a substantial divergence: on English-language stations, public broadcasters aired nearly ten times as much *network* content as *local* content, whereas private stations aired less than four times as much (Table 1). The relative share of *network*-to-*local* content on public stations was about 2.5 times greater than on private stations, underscoring the stark difference in the geographic focus of programming. The contrast was especially pronounced on the French-language network, where the public broadcaster produced no *local* live content (Table A.3). Because program logs did not distinguish between *recorded* content that was locally produced and that which was imported, the comparison of *local* live and *network* programming likely understates local production on private stations and biases downward the measured divergence from the public broadcaster (Table A.3).

These records confirm that public and private stations primarily differed in the geographic focus of their content, not in the quantity or timing of informational programming. While the data reflect a single week, they align with the historical record and the policy intentions of the period. Importantly, they represent the most detailed comparative evidence available for our sample period and provide a credible foundation for analyzing systematic content differences between station types—particularly in the early years of Canadian television, when programming was limited and relatively uniform. Given the absence of major policy or structural changes during this period, we have little reason to expect substantial deviations from these patterns in the few years immediately before or after. On this basis, we proceed under the assumption that public television content was distinctly national in character, relative to the more local focus of private broadcasters.

3 Data

In this section, we describe the main variables used throughout the empirical analysis. Section D in the Appendix provides additional details about data construction and sources.

Structure Throughout the analysis, our spatial unit of observation is a federal electoral district. Canada is a parliamentary democracy, making federal elections an appropriate jurisdiction for our study because local *and* national news coverage may be relevant to voters in this context. While the act of voting is local in a Canadian federal election, the implication of a vote is national, and national media coverage bridges this gap by informing voters about the larger stakes of their local choice. At the same time, local news may be most relevant to voters because it can link the coverage of national issues to local contexts, or highlight constituency-specific issues and profile the candidates running for local office. A well-informed voter is thus an individual who is discerning of both the local candidates of their district and the political party they wish to see form the federal government.

We collect and digitize four sets of district maps for our extended sample period of 1935-1968, due to the redrawing of electoral districts in 1947, 1952 and 1966. We crosswalk these digitized maps using the procedure outlined in Eckert et al. (2020), giving us a consistent spatial unit of observation over the entire sample period.

We use the 1952 distribution of electoral districts as our reference map, the same year television arrives, and re-aggregate the other reporting maps to the 1952 distribution in the crosswalk. There are 265 electoral districts in the 1952 redistribution, to which we can match signal strength data for all but two districts. Our baseline sample runs from the establishment of the CBC to the end of the single-station policy (1935-1958), a time period that includes 7 general election cycles (4 pre-treatment and 3 post-treatment), implying a total of 1,841 observations for the 263 districts. Voter turnout data is occasionally missing for some districts in the historical record, so our final sample consists of 1,795 district-election-year observations (97.5 percent of possible observations). Missing district characteristics further reduces our sample to 1,764 observations when covariates are included in a specification (95.8 percent of possible observations). We do not include by-elections in the analysis.[9]

Television Signal Strength We gathered archival records of television transmitter installations from *Library and Archives Canada*. The complete set of records come from three different collections. With these archival records, we piece together all of the needed information for the complete set of transmitter installations between 1952 and 1968—i.e., the station call sign, latitude-longitude coordinates and opening date; whether a station is publicly or privately owned; and transmitter features such as height and service power.

To obtain an accurate estimate of television signal strength at the district level, we follow a two-step procedure of estimation and aggregation. First, we use the Irregular Terrain Model (ITM) to estimate the attenuation of signal strength across space, based on the location, height and power of television transmitters across the landscape of Canada. ITM estimates take into account the elevation profile between sender and receiver to adjust each estimate for any topographic interruption of a signal. See Figure A.1 as an example of the ITM output.

Second, we aggregate these signal strength contours to our unit of observation. We start by aggregating our ITM estimates to the smallest available statistical area in Canada: the census subdivision (CSD). We use the 1951 CSD map, which is comprised of 4,987 non-overlapping units. We match 1951 cen-

[9] In the 1935-1968 extended sample, we add data for 4 additional general elections, implying a total of 2,893 observations for the 263 districts. We match voter turnout data for 2,832 observations (97.9 percent of possible observations), or 2,764 observations (95.5 percent of possible observations) for specifications that include the full set of covariates.

sus population data to these CSDs to use as weights when aggregating from CSDs to electoral districts. This procedure guarantees that even in large electoral districts we obtain accurate estimates of the signal strength received by the electorate, as densely populated CSDs are up-weighted in the aggregation, while sparsely populated CSDs are down-weighted. By design, this aggregation strategy overcomes the problem of aggregating by geographic unit, where such units tend to vary considerably in size and population, especially in a large country like Canada. Our final measure is an estimate of television signal strength at the electoral district level, which varies across time in accordance with the building of new television transmitters over our sample period.

The level of signal strength indicates whether the people residing in a district can watch television without noise. At baseline, we apply a minimum threshold for a district's average signal strength of 50 dbμV/m.[10] With this transformation, signal strength increases continuously for values above 50 dbμV/m and is set to zero otherwise. We later show that our conclusions are robust to alternative cut-off thresholds, as well as to a binary treatment.

Voter Turnout Our main measure of citizen engagement is voter turnout. We source data from Election Canada's *Report of the Chief Electoral Officer* for each federal election between 1935 (18th general election) and 1968 (28th general election), although for most of the analysis we truncate our panel at 1958 (24th general election)—the last year the single-station policy was in effect. For every election, Election Canada's *Report* summarizes results by electoral districts, including the total votes cast, the size of the electorate and population. We calculate voter turnout as the ratio of votes cast relative to the size of the electorate.

Other Voting Outcomes We construct several additional voting outcomes using data scraped from the Parliament of Canada's Parlinfo website. For each district in every general election, we collect the full list of candidates, their party affiliations, and the number of votes cast for each candidate. Using these data, we calculate vote shares by political party, aggregate vote shares across the left–right political spectrum, and incumbent margins of victory.[11]

Speech Localization Index We construct an index of political responsiveness based on the geographic orientation of speeches delivered by MPs in the House of Commons. This requires two types of data: digitized transcripts of all floor speeches (Beelen et al., 2017), and a comprehensive list of populated places in Canada with associated latitude and longitude coordinates (CGNDB, 2021). To identify geographic references in the speeches, we apply a Named Entity Recognition algorithm to the full text of each MP's speeches. For every reference extracted, we calculate the distance between the mentioned location and the centroid of the MP's electoral district. This allows us to determine whether the MP is speaking about a location within their own district or elsewhere.

[10] dbμV/m captures the field strength of an electromagnetic signal, expressed in decibels relative to one microvolt per meter. Our threshold of 50 dbμV/m is based on the Government of Canada's minimum requirement of 47 dbμV/m for a Grade B service contour, which by definition is a signal level the Government of Canada deems "to be adequate, in the absence of man-made noise or interference from other stations, to provide a picture which the median observer would classify as of satisfactory quality." (ISED, 2016, p. 12)

[11] Table A.9 in the Appendix documents our classification of left- and right-leaning parties.

We use this algorithm to develop three related measures. Our first measure, *speech locality*, is the fraction of total speeches given by a MP in a parliamentary session where they mention a populated place within their own district, conditional on mentioning any populated place. This is an extensive measure of speech localization. The second measure, *place locality*, is a measure where the numerator is the number of populated places mentioned within the MP's district, relative to the total number of populated places mentioned in that speech, and averaged across all speeches during each sitting of Parliament. This is an intensive measure of speech localization. Our third measure, *mention local*, is an indicator equal to one if an MP ever mentions a populated place within their district in a parliamentary session, and zero otherwise. In all instances, these measures uniquely define an electoral district in a sitting of Parliament, and thus exhibit the same variation as the rest of our data. The localization of a speech is also increasing in all three measures, capturing an MP's willingness to speak on behalf of the constituents they represent—our proxy for the responsiveness of an elected politician.

We combine these three measures into a single composite variable which captures the extent to which an MP's parliamentary speeches focus on geographic locations within their own district. To construct the index, we rely on the procedure outlined in Anderson (2008), where each variable is standardized to mean-zero with a variance of one, thus ensuring each variable is measured on the same scale. We combine these by summing the standardized variables, weighting each variable by the inverse of the covariance matrix of the standardized outcomes. We refer to this as the *speech localization index*. The use of this index addresses concerns of multiple hypothesis testing and aggregate changes in an MP's behavior that individual variables cannot completely capture.

Party Dissent Index We construct a measure of political accountability based on an MP's willingness to deviate from party-line voting in the House of Commons. Using roll-call vote records for all parliamentary votes during our sample period (Godbout and Høyland, 2017), we develop an index from two related measures. The first, *vote count dissent*, captures the total number of times an MP votes against the majority of their party in a given parliamentary session. To account for the large number of zeros, we apply the inverse hyperbolic sine transformation. The second measure, *any dissent*, is a binary indicator equal to one if an MP casts at least one such vote in a session. We combine these using the procedure in Anderson (2008) to construct a standardized index, which we refer to as the *party dissent index*. We interpret this measure as a proxy for legislative accountability—specifically, an MP's willingness to prioritize constituency interests over party loyalty (Snyder and Strömberg, 2010).

District Controls We collect various district-level characteristics as control variables for the empirical analysis. For each characteristic, we locate data observed as close to the 1935 start date of our sample and interact these "initial conditions" with year fixed effects. We obtain 1931 population data at the electoral district level from the Election Canada's 1935 *Report of the Chief Electoral Officer*, which comes from the 1931 decennial census. We calculate the area of each electoral district in ArcGIS, and construct a measure of population density as the ratio of population to area in squared kilometers. We obtain information on average earnings, age, literacy rates and urbanization rates from the 1911 Census of Population, which is available at the CSD level.[12]

Pre-Television Radio Coverage We measure pre-treatment, cross-sectional variation in radio coverage using records of radio towers and their call signs from 1941, sourced from *Library and Archives Canada*. Because these records do not report precise tower locations, we supplement them with a second archival source: a 1971 document listing radio tower frequencies and locations. By cross-referencing call signs and cities, we match 72 radio stations to their exact towers, as these stations continued operating through 1971. For the remaining 13 stations, we match each to the main radio tower in the city where it was located. We use information on the location of stations to determine the number of radio stations within range of an electoral district, where range is determined by a radius of $\chi \in \{50\text{km}, 75\text{km}, 100\text{km}\}$. The result is a cross-sectional measure of radio station coverage within χ-kilometers of an electoral district.

Joint Radio and Television Ownership We compile a complete list of private radio and television stations in 1956, including their individual owners and ownership shares (Royal Commission on Broadcasting, 1957, Appendix VIII). For each television station, we calculate the product of each owner's share in the television and radio station, summing these values across all owners. This measure reflects the extent to which television station ownership is tied to radio station ownership—i.e., the intensity of joint cross-media ownership at the station level. Figure A.3 plots the distribution of this measure. Our sample includes 34 private television stations with 58 distinct owners, 64% of whom also own a radio station. Most owners (80%) hold shares in only one television station, and 76% of these also own a radio station. For 62% of private television stations, all ownership shares are held by radio station owners, while just 3 stations have no ownership links to radio.

Newspaper Circulation We digitize circulation data for daily and weekly newspapers from 1945 to 1958, drawing on multiple editions of the *Canada Year Book*—an official statistical almanac of Canadian social and economic conditions. Until the 1954 edition, the *Year Book* reports circulation figures for every urban center with a population of at least 20,000; from 1954 onward, the threshold rises to 30,000. Our panel of daily newspapers includes 36 cities, and our panel of weekly newspapers includes 28 cities, covering both English- and French-language publications. The included cities account for 93 percent of all daily newspaper circulation in 1950, and 61 percent and 80 percent of English- and French-language weekly circulation, respectively (DBS, 1950). We construct five outcomes from these data, separately for daily and weekly circulation: (i) the log number of newspapers, (ii) the log of total circulation, (iii) the log of average circulation per newspaper, (iv) circulation per capita, and (v) circulation per household. To calculate per capita and per household variables, we use Census of Population data from 1941, 1951, and 1961, interpolating values for intervening years.

[12]The 1911 census is the last available digitized version of the decennial census. We use the CSD location of enumerated individuals in the 1911 census to aggregate up to the electoral district level.

4 Empirical Design

We examine how the national orientation of public television content, in contrast to the local orientation of private television content, influenced the political behavior of both citizens and politicians. This comparison is enabled by the single-station policy, which restricted each district to receiving either public or private television, but not both. While this setting offers a novel source of variation, it also raises two key identification challenges: the non-random rollout of the television network and potential selection into public or private coverage. In this section, we outline the empirical framework we used to highlight these challenges and describe our strategies for addressing them.

4.1 Two-Way Fixed-Effects Framework

We begin by motivating our empirical design with a standard two-way fixed-effects (TWFE) specification commonly used to study the political effects of television access. In this model, electoral districts receive a continuous treatment across different election years:

$$Y_{d,t} = \alpha_d + \alpha_t + \beta\, signal_{d,t} + \Phi\left(\boldsymbol{X_d} \times t\right) + \epsilon_{d,t}. \tag{1}$$

Here, $Y_{d,t}$ denotes a political outcome of interest in electoral district d for election-year t, and the treatment variable, $signal_{d,t}$, is a measure of television signal strength in district d for election-year t.[13] The vector $\boldsymbol{X_d}$ includes initial conditions of each electoral district d that are interacted with an election-year fixed effect, thereby absorbing any unobserved variation that correlates with the arrival of television and these initial conditions.[14] District fixed effects (α_d) capture time-invariant characteristics of an electoral district, and election-year fixed effects (α_t) capture any variation common to all districts for each election cycle. To account for serial dependence, standard errors are clustered at the district level.

The parameter of interest, β, captures the reduced-form estimate of television exposure in an electoral district. The fixed effects included in equation (1) imply that β is identified from variation in signal strength within each district over time—relative to other districts in the same election year—if the parallel trends assumption holds, and treatment effects are homogeneous over time and across districts (De Chaisemartin and D'Haultfœuille, 2020; Goodman-Bacon, 2021). Yet even if treatment is conditionally random, the estimate $\hat{\beta}$ may be biased if the *timing* of exposure to treatment is non-random (Borusyak and Hull, 2023). For example, suppose two districts (*A* and *B*), both sparsely populated and unlikely early adopters of television, yet *A* is located near Toronto and *B* is relatively remote. In any counterfactual scenario, Toronto would be an early adopter of television, where the relative timing of treatment for *A* and *B* is predictable in a non-random way, based on the proximity of each district to Toronto or any other major economic or population center. An unbiased estimator of β thus requires the dubious assumption that districts near the economic centers of the country do not differ in any relevant, time-varying way from more remote districts (e.g., political indifference or civic mindedness).

[13] We prefer a continuous measure of $signal_{d,t}$ because expected signal strength is measured along the same continuum, and its inclusion in a regression implies that actual signal strength is identified from variation above or below the expected value—a quasi-random source of variation. Discretizing both measures of signal strength necessarily reduces the identifying source of variation, however we later show that our results are robust when using an event-study design with a binary treatment.

[14] These district-level characteristics include population density, earnings, age, literacy rates and urbanization rates.

4.2 Expected Signal Strength

We forego this strong assumption and instead establish unbiasedness by accounting for a district's expected signal strength—a measure of the non-random and predictable variation in signal strength that results from the economic geography of the country. We provide a detailed discussion of the approach in Appendix B, which closely follows the insights of Borusyak and Hull (2023), who establish a generalized solution to this identification challenge. The intuition of our application is straightforward: the observed distribution of television signal strength is an outcome of the underlying data-generating process, which can be modeled and used to draw counterfactual distributions in such a way that they might as well have occurred. Each permutation is thus one realization of the underlying data-generating process. By permuting the television network many times, we can construct an average of the counterfactual realizations for each electoral district—i.e., a district's expected signal strength. In a regression, including *expected* signal strength as a control variable recenters an estimate of *actual* signal strength, effectively purging the non-random—and thus biased—component of our treatment effect. More intuitively, this approach works because the variation that we rely on is the difference between the observed and counterfactual network—signal strength above or below what is expected—and thus an outcome of chance.

Modeling Expected Signal Strength The set of transmitters that receive activation in a simulation are modeled as a function of (i) cross-sectional variation—i.e., each transmitter's sampling probability—and (ii) temporal variation—i.e., how many transmitters are actually active in a given year.

We generate the cross-sectional probability of sampling transmitter s as $(\bar{t} - t_s)/(\bar{t} - \underline{t})$, where $\underline{t}$ and $\bar{t}$ respectively denote the first and last year of all observed transmitter installations, while t_s denotes the commencement year that the station transmitter s becomes operational.[15] This probability linearly decays as a function of a station's commencement year, where transmitters established early receive a higher probability of activation than late-established transmitters.

To introduce temporal variation, we activate the correct number of transmitters for a given year, choosing transmitters with the highest cross-sectional probability in each permutation. Let $(1/a_t)$ be the probability any station is sampled in year t, where a_t be the correct number of activated transmitters for that year. This formulation implies that the probability of a station being activated is decreasing in years where many transmitters are activated. The combined cross-sectional and temporal probability implies that station s is sampled in each permutation of year t as follows:

$$\mathrm{Pr}_{s,t} = \frac{\bar{t} - t_s}{\bar{t} - \underline{t}} + \frac{1}{a_t} + \epsilon_{s,t}. \tag{2}$$

In our simulation we permute the television network 500 times, drawing a distribution of expected signal strength based on equation (2) each time. The inclusion of a normally distributed shock $\epsilon_{s,t}$ introduces stochastic variation in the set of active transmitters across network permutations and election years.[16] We derive our final measure of expected signal strength by averaging across all permutations

[15] In our data, $\underline{t} = 1952$ and $\bar{t} = 1968$. We rely on the complete set of transmitter installations throughout this time period as our set of potential activation locations.

[16] For this measure of expected signal strength, ϵ is drawn from a normal distribution with a mean of zero and a standard deviation equal to the standard deviation of the sampling probability in equation (2).

at the electoral district level, following the same aggregation procedure described in Section 3 for actual signal strength.

Model Validation Because the true data-generating process is unknown, we evaluate our approach using two testable criteria (Borusyak and Hull, 2023). First, if expected signal strength captures non-random variation, it should correlate with the residuals from model (1). Second, conditional on expected signal strength, actual signal strength should be orthogonal to any determinant of treatment—specifically, population density. We confirm that both conditions hold for our preferred measure of expected signal strength and report the results in Appendix B.1. Given the flexibility in our procedure, we also examine 23 alternative models of expected signal strength, as well as the conventional free-space approach. Eight of these alternatives satisfy the two criteria, while the free-space approach does not.[17]

4.3 Identification Strategy

Our empirical object of interest is the *relative change* in political behavior among citizens and politicians following the introduction of public versus private television. We identify this change using the following specification:

$$Y_{d,t} = \alpha_d + \alpha_t + \beta^{pvt}\left(signal_{d,t} \times private_{d,t}\right) + \beta^{pub} signal_{d,t} + \gamma private_{d,t} + f(\mu_{d,t}) + \Phi(\boldsymbol{X_d} \times t) + \epsilon_{d,t}. \quad (3)$$

Model (3) extends model (1) in two important ways. First, it includes an indicator variable, $private_{d,t}$, equal to one if district d receives a private television signal exceeding 50 dbμV/m in election year t. The interaction $signal_{d,t} \times private_{d,t}$ thus distinguishes districts with private television access from districts with public television access. Second, the function $f(\mu_{d,t})$ includes both the measure of expected signal strength, $\mu_{d,t}$, as well as its interaction with $private_{d,t}$, allowing us to isolate deviations from predicted reception quality. This adjustment recenters the variation used to estimate β^{pvt} and β^{pub} around quasi-random differences between actual versus expected signal strength.

The coefficient β^{pub} captures the average change in political behavior in districts that received public television, relative to those without any television coverage. We interpret this as the net effect of public television's introduction, which both reduced the overall volume of political information and shifted the geographic focus of content toward national concerns. A negative estimate of β^{pub} would be consistent with earlier work on television's political effects (e.g., Gentzkow, 2006); however, as in those studies, this estimate does not allow us disentangle the effect of reduced political information characteristic of television in general from the effect of nationalized coverage specific to public television in particular.

Our main parameter of interest, β^{pvt}, captures the differential effect of private versus public television in districts where television was available. This comparison holds constant the general decline in political information associated with television's rise and instead isolates differences in content between broadcasters—particularly the documented shift toward national programming on public television. In doing so, we exploit variation in broadcaster type *conditional* on access to television. Identification thus relies on the assumption that, controlling for expected signal strength and fixed effects, the kind of broadcaster received in a district was plausibly exogenous.

[17] Our benchmark estimates remain stable across all validated alternatives (see Appendix B.1).

Selection into Private Television The principal threat to our identifying assumption is that a time-varying district characteristic unaccounted for in our model might be correlated with both political participation and the licensing of a private station. To assess this threat, we estimate model (3) in the initial treatment period ($t = 1953$), regressing pre-treatment conditions of a district on $signal_{d,1953}$ (*selection into television access*) and the interaction term $signal_{d,1953} \times private_{d,1953}$ (*selection into private television access*). Figure 1 presents the results, where all covariates are standardized for comparability, and the reported coefficients are conditional on expected signal strength and provincial fixed effects.

We find that selection into television access is generally balanced, with a few exceptions: population density, urbanization, and average age all correlate with the signal strength treatment. However, these covariates are conditionally balanced with respect to private television access. This suggests that β^{pvt} is identified from plausibly exogenous variation in private station assignment, supporting a causal interpretation. Further, our primary outcome variables—voter turnout, political responsiveness, and accountability—are balanced across private and public districts in the pre-treatment period.

As a baseline safeguard against selection bias, all specifications include electoral district fixed effects, which absorb time-invariant confounders. We also control for pre-treatment district characteristics, including those correlated with television exposure, interacted with election-year fixed effects to account for time-varying trends. To address residual concerns about time-varying unobservables, we later show that our estimates are robust to excluding major cities, capital cities, and densely populated districts—locations where political or economic incentives for station placement are strongest. The insensitivity of our findings to these subsamples reinforces the credibility of a causal interpretation.

Another potential source of selection arises from patterns of media ownership. Using data from the 1957 Royal Commission on Broadcasting, we match private radio and television station owners and find that 64 percent of private television licenses went to existing radio proprietors (see Figure A.3). In these cases, private television infrastructure was built atop pre-existing radio operations, lowering the cost of entry in districts with prior radio presence. Selection into private radio broadcasting predating our sample period is absorbed by electoral district fixed effects, assuming the selection mechanism is time-invariant. We later show that our results are robust to including a pre-treatment cross-sectional measure of nearby radio stations interacted with election-year fixed effects, accounting for possible time-varying selection into private broadcasting.

Finally, the CBC's Board of Governors retained some discretion over private license allocations, raising the possibility that public authorities may have blocked private stations from entering the most desirable markets. If anything, this potential source of selection should bias against our findings, yet the historical record suggests limited scope for strategic interference. Even critics of the single-station policy recognized that substantial Canadian content production required stations in large, economically robust cities like Montreal and Toronto (Peers, 1979). Private licensees subsequently moved to fill coverage gaps in unserved areas—not necessarily politically salient ones—where the single-station policy conferred a de facto monopoly in local broadcasting. The balance of pre-treatment political outcomes across districts with private versus public television (Figure 1), along with the path dependence between private radio and television ownership (Figure A.3), reinforces the view that private television expansion was not politically targeted.

Taken together, our selection tests align with the historical record and provide no evidence that selection into private versus public television biases our estimates. These findings support our identifying assumption: conditional on television access and expected signal strength, district assignment to private treatment is plausibly exogenous.

5 Results

This section presents our main results. We begin by establishing baseline estimates and then examine heterogeneity by language of service. Next, we consider alternative interpretations of our findings. We conclude by assessing the robustness of our results and reinforcing our preferred interpretation.

5.1 Baseline Evidence

We begin by comparing districts served by public versus private television, examining changes in responsiveness among both citizens and politicians. Figure 2 plots first differences in voter turnout (left panel) and parliamentary speech localization (right panel) against television signal strength, conditional on television access. These plots reveal a clear divergence in political behavior between districts exposed to public versus private television. Since the principal distinction between the two station types lies in the national versus local orientation of their content, our interpretation of the proceeding analysis is already evident in these raw correlations.

Table 2 presents the ordinary least squares (OLS) estimates of equation (3) for voter turnout (columns 1–3) and the speech localization index (columns 4–6). Column (1) reports estimates that omit the private interaction term, capturing the average effect of television entry. At the treatment threshold of 50 dBμV/m—the minimum field strength for satisfactory reception—the estimated effect is a 2.8 percentage point decline in turnout, or roughly 37 percent of a standard deviation. While this finding is consistent with earlier work on television and voter turnout, it masks important heterogeneity in content that our setting allows us to uncover.

Columns (2) and (3) report estimates from the interaction model, revealing that voter disengagement is exclusive to districts with public television access. The estimate of β^{pub} in column (3) implies a 2.1 percentage point decline in turnout in public television districts at the treatment threshold, while the interaction coefficient suggests a relative 2.9 point increase in private television districts. Since this interaction term compares districts with television access, it reflects the political consequences of content differences between public and private broadcasters. Conversely, the net effect of private television's entry is statistically indistinguishable from zero ($p = 0.875$).

Figure 3 presents estimates from an event study, where the binary treatment is defined as crossing the minimum signal strength threshold for satisfactory reception. The figure shows no evidence of differential pre-trends, with or without covariates: treated and untreated districts follow parallel paths prior to treatment, with divergence emerging only in the post-treatment period. The magnitude of the post-treatment coefficients in the baseline model implies a decline in turnout of nearly five percentage points in the final post-treatment period—an effect equivalent to approximately two-thirds of a standard deviation in turnout.

Columns (4) through (6) repeat the analysis using the speech localization index as the outcome, revealing a parallel pattern among MPs. The benchmark estimate in column (6) indicates that the local orientation of parliamentary speech declines by 29 percent of a standard deviation following the arrival of public television. The positive and significant interaction term implies a relative increase in speech localization among MPs representing private television districts, but again the net effect of private television's entry is indistinguishable from zero ($p = 0.361$).[18]

Interpretation These results support the interpretation that nationally oriented media content weakens the informational link between voters and their local representatives. In districts served by the public broadcaster—whose programming prioritized national stories for a nationwide audience—voter turnout declined, and MPs made fewer references to their constituencies in Parliament. By contrast, these declines are absent in districts with private television access, where locally focused content remained more prevalent. The fact that these patterns appear only in public television districts underscores the central role of informational content—particularly its geographic focus—in shaping both citizen engagement and representative behavior.

5.2 Heterogeneity by Language of Service

In this section, we extend our baseline analysis by distinguishing between public and private stations according to their language of service. As a bilingual country, Canada required television programming in both English and French to fulfill the publicly defined role of broadcasting as a unifying force—a means of fostering national identity and cohesion among its diverse population. However, for the era of the single-station policy, the French-language network was substantially smaller and more regionally concentrated: by 1958, it comprised only nine stations, all located in Quebec except for a single CBC outlet in Ottawa.

Table A.4 presents our main findings by language of service. In our benchmark specification (column 2), the differential effects of public and private television on voter turnout appear only in districts with English-language service. We find little-to-no significant changes in engagement following the entry of French-language television, whether public or private. Column (4) reports estimates of the benchmark specification using the speech localization index as the outcome. While the estimates are less precise, the pattern remains: any significant effects are confined to English-language districts. These results suggest that the political effects of early Canadian television were concentrated among electoral districts with English-language programming.

Interpretation The evidence by language of service is consistent with our baseline interpretation that political behavior responds to the geographic orientation of media content. While the effects differ across English- and French-language stations, the contrast between public and private broadcasters follows a consistent pattern for each language of service: political disengagement is concentrated in districts served by the nationally oriented public broadcaster, with no comparable effect in districts with private television access.

The muted effect in French-language districts likely reflects both the limited departure of French television content from existing local media and the restricted variation in our sample, each of which

[18] Figure A.4 documents the robustness of these findings using individual variables comprising the speech localization index.

weakens our ability to detect a treatment effect. Both public and private French-language broadcasters had few options for importing recorded entertainment, as American programming was exclusively in English. As a result, they relied more heavily on domestic production and devoted a greater share of airtime to informational programming—one-third versus one-quarter on English-language stations (Table A.2). While the CBC aimed to offer a national service in both languages, its French division functioned in practice as a regional broadcaster. As late as 1977, the CBC president acknowledged the need to expand French-language services beyond the region, emphasizing that these services should reflect "the full diversity of the nation" and not just Quebec (quoted in Raboy, 1990, p. 250). These features—limited importable content and a regionally focused information service—meant that French-language television more closely resembled the local media it replaced. Moreover, our empirical design focuses on the single-station policy period, which necessarily limits identifying variation: by 1958, our final year of observation, only two public and seven private French-language stations were operating.

5.3 Alternative Interpretations

Although we attribute the political effects of television to differences in the geographic orientation of media content, we consider two alternative interpretations of our baseline evidence here.

Political Slant of Content One possibility is that the political slant of the public broadcaster discouraged participation among certain partisan groups in a way that private broadcasters did not. This would align with a well-established literature on the effects of biased media content on voter behavior (see DellaVigna and Kaplan, 2007; Enikolopov et al., 2011; Chiang and Knight, 2011; Martin and Yurukoglu, 2017; Durante et al., 2019; Ash et al., 2024, among others). In the Canadian context, the CBC has faced criticism for adopting a center-left position for as long as the public broadcaster has existed (Rutherford, 1990).[19] If politically misaligned voters responded by choosing apathy over swing voting, such bias could explain lower turnout in public television districts.

Data limitations preclude direct measurement of political slant throughout the 1950s, so we instead investigate differences in vote shares by political party and across the ideological spectrum. We re-estimate model (3) using these related outcomes, and Table 3 presents the results. Columns (1) and (2) report estimates showing no differential impact on vote shares for the Liberal or Conservative parties—Canada's two major parties and the only ones to have ever formed a federal government. Column (3) reports estimates for the vote share for all non-major parties, which also indicate no differential impact. Similarly, columns (4) and (5) reveal no significant effect across the broader ideological spectrum. Altogether, these findings imply a general reduction in engagement across the ideological spectrum, so it seems implausible that any difference in the political slant of public and private broadcasters can explain our findings.

Substitution Effect When television replaces newspapers, the overall volume of political information typically declines, and what remains focuses more on national than local concerns (Martin and McCrain,

[19]This view of the CBC continues to fuel debate among Canadian. For example, on 27 June 2017, Peter Mansbridge, the chief correspondent for CBC News from 1988-2017, addressed this issue on air during an episode of *The National*, CBC's flagship nightly news program.

2019; Moskowitz, 2021; Angelucci et al., 2024). The public broadcaster devoted an additional 4.2 percent of total airtime to informational content (Table 1), which we view as an inconsequential difference, since this would bias our estimates in the opposite direction, if at all. However, for our interpretation to hold, other key sources of information for voters—notably newspapers—must not change systematically across public and private television districts in either their availability or consumption.

We test this assumption by examining whether newspaper availability and consumption were balanced across public and private television districts. We measure availability by the number of newspapers in circulation, and consumption by total circulation, average circulation per newspaper, and per-capita and per-household rates. Table 4 presents our findings, based on an empirical specification similar to model (3), but with cities as the unit of observation and a yearly panel from 1945 to 1958. Accordingly, we replace electoral district fixed effects with city fixed effects, and election-year fixed effects with year fixed effects.

The entry of private or public television has little to no effect on newspaper availability or consumption during the sample period. The strongest evidence comes from daily newspapers: our panel of 36 cities—accounting for 93 percent of total daily circulation at the time—shows no systematic differences between district types. While the estimates in columns (2) and (3) show a weakly significant reduction in total and average circulation, the interaction term is insignificant, suggesting that this small decline was statistically indistinguishable across public and private districts, as shown in Panel A. We also report estimates for weekly newspapers, based on a panel of 28 cities and present the findings in Panel B. However, as noted in Section 4.1, data limitations make these estimates less representative—covering only 60 and 81 percent of all English- and French-language publications, respectively. Nevertheless, all estimates point to the same conclusion: the arrival of public or private television did not significantly alter access to information through other media sources, whether in absolute or relative terms across station types.[20]

5.4 Robustness

In this section, we summarize a variety of additional tests used to verify the robustness of our main empirical findings and preferred interpretation.

Selection into Radio A central concern for interpretation is that station type (public or private) was not randomly assigned across districts. Because most private television licenses were issued to existing radio proprietors during the initial rollout of the television network (Figure A.3), cross-media ownership may have influenced the placement of private television stations, introducing selection bias. To test for this, we add to model (3) a control for the number of radio stations within $\chi \in \{50\text{km}, 75\text{km}, 100\text{km}\}$ of each district—a cross-sectional measure interacted with election-year fixed effects. This specification allows us to flexibly account for the possibility of time-varying selection into private broadcasting. Even-numbered columns of Table A.5 report these estimates, while odd-numbered columns present our benchmark results for reference. Across all specifications, the television coefficients of interest remain

[20]Prior work finds that ideological shifts in television content do not significantly displace newspaper consumption (Durante and Knight, 2012), lending plausibility to the absence of a clear substitution effect in our setting. The short post-treatment period may also have been insufficient to detect meaningful changes in newspaper circulation.

statistically significant and retain the expected sign. The stability of these estimates suggests that our findings are not driven by selection into television via radio ownership.

Influential Districts While Figure 1 shows that observable covariates are balanced across district types, time-varying unobservables could still drive selection. To assess the robustness of our estimates to this possibility, we systematically exclude districts likely to possess unobserved characteristics that may have influenced the non-random adoption of a television station. Specifically, we drop districts with high population density and those containing major or capital cities, where political and economic incentives for station placement are likely to have changed over time. As shown in Figure A.5, the estimates remain stable across all sample restrictions, indicating that unobserved, time-varying characteristics in these markets cannot account for our findings. The reduction in districts (and thus observations) affects only the precision—not the magnitude—of the results.

Leave-One-Out Analysis To further address concerns about non-random placement of station types, we conduct a leave-one-out sensitivity analysis to assess whether our findings are driven by a small number of influential districts. Specifically, we re-estimate equation (3), dropping one electoral district at a time from the sample. Figure A.6 plots a histogram of the resulting coefficient estimates, expressed relative to the full-sample estimate. The distribution is tightly centered around 1, indicating that no single district meaningfully influences our results. While some subsample estimates deviate slightly, these differences are small—typically just a few percentage points.

Expected Signal Strength A different identification concern is the non-random timing of television access across districts. Our benchmark model addresses this potential bias using a measure of expected signal strength (Borusyak and Hull, 2023). However, modeling the data-generating process introduces many degrees of freedom, so we assess the robustness of our baseline measure by simulating 23 alternative processes (Appendix B). Of these, eight satisfy the criteria for a valid measure, as detailed in Appendix B.1.2. Figure B.3 shows that our benchmark estimates remain very stable across all validated alternatives, further reinforcing the credibility of our empirical design.

Parallel Trends We also address concerns related to the parallel trends assumption in Appendix C, including methodologies proposed by Goodman-Bacon (2021) and Sun and Abraham (2021). Event-study plots—both trimmed and including the never-treated—confirm parallel trends, indicating that our findings are robust to different treatment-control comparisons. We also decompose treatment cohorts to ensure that staggered adoption does not induce negative weighting, which could bias the estimated effects if they evolve over time (De Chaisemartin and D'Haultfœuille, 2020; Borusyak et al., 2024), which in principle could flip the sign of an estimate if the treatment effect grows over time (Goodman-Bacon, 2021). Across all checks, the parallel trends assumption holds and our coefficient estimates are comparable to our baseline estimates.

Alternative Identification Strategy We further assess identification by comparing our expected signal strength model to a conventional free-space signal model (Olken, 2009) and, for reference, a two-way fixed effects model without identification. As shown in Table A.6, the free-space and expected signal models yield qualitatively similar results. However, the free-space estimates are larger in magnitude, less precise, and occasionally lose significance. Figure B.1 shows that the free-space model fails to balance population density in the cross section, which likely explain the sensitivity of the free-space estimates.

Extended and Restricted Panel Tests To ensure that our findings are not driven by the time period of analysis, we replicate our baseline estimates using an extended panel covering 1935–1968 (Table A.7). Despite the end of the single-station policy in 1958, the results remain stable, reinforcing the credibility of our findings. We also re-estimate the model on the original 1935–1958 sample but truncate each district's observation period at the end of the initial treatment year, thereby excluding the possibility of treatment effects evolving over time. Across all specifications, the estimated coefficients remain consistent with baseline results, suggesting that our findings are not sensitive to the sample period or driven by cohort-specific dynamics.

Dual Treated Districts While the single-station policy ensures that no two stations serve the same market, television markets and electoral district boundaries do not always align. As a result, fifteen districts in our sample have an *average* non-zero signal strength for both public and private television, even though the underlying coverage areas within the district do not overlap. Dropping these districts yields slightly larger effect sizes (Table A.8), suggesting that their inclusion in our full sample, if anything, introduces measurement error and biases our estimates toward zero.

Signal Strength Threshold For our baseline measure, we set a minimum threshold for television signal strength of 50 dbμV/m, following federal broadcasting guidelines (ISED, 2016). While signal strength below this level may result in service interruptions, our measure is a district-level average, which is influenced by both the size of the district and the spatial distribution of its population. Although we use subdivision population weights to average signal strength across electoral districts, some misclassification may still occur if population values are measured with greater error in low-density areas, disproportionately affecting the district average. To test robustness, we vary the threshold from 25 to 75 dbμV/m in 5 dbμV/m increments (Figure A.7). Estimates remain stable across thresholds, although higher cutoffs reduce the number of treated districts and lower statistical precision.[21]

Non-Voting Political Activities We provide additional evidence that the geographic orientation of television coverage shaped voter engagement, drawing on all survey items classified as *Group Electoral Activities* in the 1974 *Canadian Election Study*. Each activity is measured through four related questions covering the last federal election, federal elections in general, provincial elections in general, and local elections in general, which we aggregate into a standardized index following Anderson (2008). Because these cross-sectional data postdate the single-station policy, we adapt our design by defining $public_d$ as an indicator for districts where public television signal strength in 1969 was at least 50 dbμV/m, and $private_d$ similarly for private television. Figure A.8 presents estimates of the effects of $public_d$ and

[21] For example, a threshold of 75 dbμV/m results in a 38 percent decrease in the number of treated private districts relative to our baseline threshold of 50 dbμV/m.

$private_d$, conditional on expected private signal strength, a full set of controls, and fixed effects for ethnicity, community size, country of birth, and province. The results show that respondents in public television districts were significantly less likely to engage in political discussion, campaign for a politician, display a political sign, contact a politician, or try to persuade friends how to vote, relative to those in other districts, while the estimated effects for private television districts are generally null or marginally positive. Although these findings should be interpreted with caution, given that the cross-sectional data preclude the use of our main identification strategy, they nonetheless reinforce our interpretation.

6 Mechanisms

To explain our findings, we draw on models that connect voter engagement and political accountability through the relevance of information (see Strömberg, 2015). The central idea is that *relevance* mediates the effect of political information: voters are more likely to engage when content helps them assess their electoral choices. In this context, national newscasts are politically less relevant—particularly in parliamentary democracies—as they offer little-to-no coverage of the local candidates appearing on a district's ballot (Snyder and Strömberg, 2010). This information gap was especially consequential in Canada prior to 1970, when ballots did not include party affiliations, making candidate-specific information critical for voter decision-making (Sevi, 2025). The observed decline in voter engagement in districts served by the public broadcaster's national programming is consistent with this mechanism, which can weaken political accountability through two channels: by limiting voters' ability to select high-quality candidates when relevant information is lacking, and by reducing competitive pressure on incumbents, who may then underperform due to weaker re-election incentives.

In this section, we first assess whether voter disengagement may increase the value of incumbency by comparing margins of victory across public and private television districts. We then examine whether these potential shifts in re-election incentives influence incumbent behavior, using a specification that leverages within-incumbent variation to account for selection effects tied to differences across politicians.

Electoral Competition To assess the incumbent's advantage at the polls, we estimate our baseline model (3) using the incumbent's margin of victory as an outcome. Table 5 reports the results. The estimate in column (1) reflects the average effect of television's entry, which is positive and statistically significant. At the treatment threshold of 50 dBμV/m, the estimated effect corresponds to a 3.7 percentage point increase in the incumbent's victory margin, or approximately 19 percent of a standard deviation.

Columns (2) and (3) report estimates from the interaction model, showing that the increase in incumbency advantage is concentrated in districts with public television access. The benchmark estimates in column (3) suggest that public television entry raises the value of incumbency by roughly 11 percent. By contrast, the estimated advantage declines by over 13 percent in private television districts, relative to districts with public television, but the net effect of private television on the incumbency advantage is statistically zero ($p = 0.898$).[22]

[22] All magnitudes are calculated by multiplying signal strength coefficient estimates by 50 dBμV/m.

We complement this evidence with a sharp regression discontinuity design (RDD), presented in Figure 4. To do this, we divide our sample into two groups: 77 districts with public television access and 101 districts with private television access. For each group, we plot the 1957 incumbent margin of victory against the 1953 margin to identify discontinuities in re-election rates at the threshold. In districts with public television (left panel), a clear discontinuity emerges: the 1953 incumbent has a significantly higher probability of re-election in 1957. Yet this pattern is absent in districts with private television (right panel), and this finding remains consistent across both linear and quadratic specifications.

These results reinforce the evidence on voter engagement and support our proposed mechanism. In private television districts, where engagement remained unchanged, the incumbency advantage similarly did not shift. Conversely, the disengagement associated with public television access appears to have benefited incumbents at the polls. Incumbents, by virtue of name recognition, typically enjoy an electoral advantage over challengers (Prior, 2006; Dal Bó et al., 2009; Jankowski and Müller, 2021)—an effect likely heightened in a period when ballots listed only a candidate's name and occupation, omitting party affiliation (Sevi, 2025). This advantage is presumably amplified when national newscasts fail to inform voters about local candidates—especially challengers, who lack the visibility conferred by prior office. The consistency of this pattern across both empirical strategies supports a causal interpretation and suggests that reduced voter engagement weakens accountability by diminishing the re-election incentives faced by incumbents.

Selection Versus Incentive Effects Having shown that public television weakens accountability by reducing electoral competition, we now ask whether this shift in voter engagement changes how incumbent politicians behave once in office, or whether it enables the election of less accountable representatives. Distinguishing between these two channels—incentives versus selection—is key to interpreting how media content affects political accountability. To assess their relative importance, we augment model (3) to include MP $\times$ district fixed effects, restricting variation to the same politician and district over time. If reduced accountability stems from voters selecting lower-quality MPs, the inclusion of these fixed effects should eliminate any observed effect. If, instead, accountability declines because incumbents respond to weaker electoral incentives, the estimated effect should persist.

Table 6 reports the results for both legislative outcomes: speech localization, which captures the local orientation of an MPs parliamentary speeches, and the dissenting vote index, which measures the frequency with which an MP breaks from party-line voting. Odd columns report estimates of the benchmark model, while even column estimates include MP $\times$ district fixed effects. A comparison of the interaction term estimates for β^{pvt}, reported in columns (1) and (2), suggests that changes in speech localization index are not driven by selection, but instead by MPs responding to the re-election incentives of electoral competition. We draw the same conclusion when comparing the estimates reported in columns (3) and (4): in private television districts, competitive pressure heightens an incumbent's incentive to seek re-election through accountable behavior, highlighting the role of local media in making their actions more visible to voters.

Whereas the estimates for β^{pub} suggest that selection plays a greater role in public television districts, since the corresponding coefficients lose significance once MP $\times$ district fixed effects are included. As previously noted, β^{pub} captures an across-medium comparison and may conflate the effects of receiving less total information with receiving less local information. Accordingly, we cannot isolate whether the observed selection effect arises from a decline in political content generally or in locally relevant content specifically.

These findings suggest that both political incentives and voter selection contribute to MP accountability. However, in the context of media content, our results point more strongly to re-election incentives as the dominant mechanism. In particular, the distinction between national and local media orientation appears to affect how incumbents behave once in office, not just who gets elected. Taken together, these findings reinforce our central claim: the geographic orientation of media content shapes political accountability primarily by altering the incentives faced by elected representatives.

7 Concluding Remarks

Understanding the informational role of media is vital to a healthy democracy. Prior research shows that the political effects of media often hinge on the medium itself. Different media types strike different balances between information and entertainment—an extensive-margin insight encapsulated by McLuhan's (1964) dictum that *the medium is the message*. Our study shifts attention to the intensive margin: the geographic orientation of content within a single medium. By distinguishing between locally and nationally focused content, we emphasize the importance of informational relevance to voters, suggesting that *the message is the message too*.

Our findings illustrate how this geographic variation in content helps explain television's divergent effects on voters and politicians. The locally oriented programming of private television preserves engagement and electoral competition, sustaining the re-election incentives of incumbent politicians and maintaining more accountable behavior. In contrast, the shift to nationally focused programming from the public broadcaster reduces voter engagement and weakens accountability. These contrasting effects trace a clear causal chain from the type of content exposure to voter behavior and legislative performance.

Our focus on Canada reflects not only the absence of systematic evidence for the country, but also the unique opportunity afforded by its public-private television system and single-station policy, which together enable a rare comparison of the political effects of national versus local content. Although Canada's policy setting was distinctive, the rollout of television mirrored that of other countries, and the average effect of television's entry aligns with evidence from the United States and beyond (Gentzkow, 2006; Ellingsen and Hernæs, 2018), reinforcing the external validity of our findings.

Viewed in historical context, our results highlight an unintended consequence of the federal government's effort to promote national unity and a collective consciousness through broadcasting. By mandating centrally produced, nationally focused content, policymakers inadvertently weakened the local accountability that underpins parliamentary representation. This points to a deeper tension in parliamentary democracies between the goal of forging national identity through mass media and the need to sustain robust local representation.

If history offers a cautionary tale, it also furnishes a framework for rethinking the role of media in sustaining democratic accountability in the digital age—particularly as national news continues to displace local reporting (Martin and McCrain, 2019; Angelucci et al., 2024). During the broadcast era, accountability often depended on journalists to speak out against misconduct or inaction by elected officials. Today, social media lowers the barrier to civic participation, giving citizens a direct voice and new tools to hold politicians to account. This shift has the potential to revive the accountability-enhancing effects of local information by enabling voters to engage their representatives in ways that were previously impossible.

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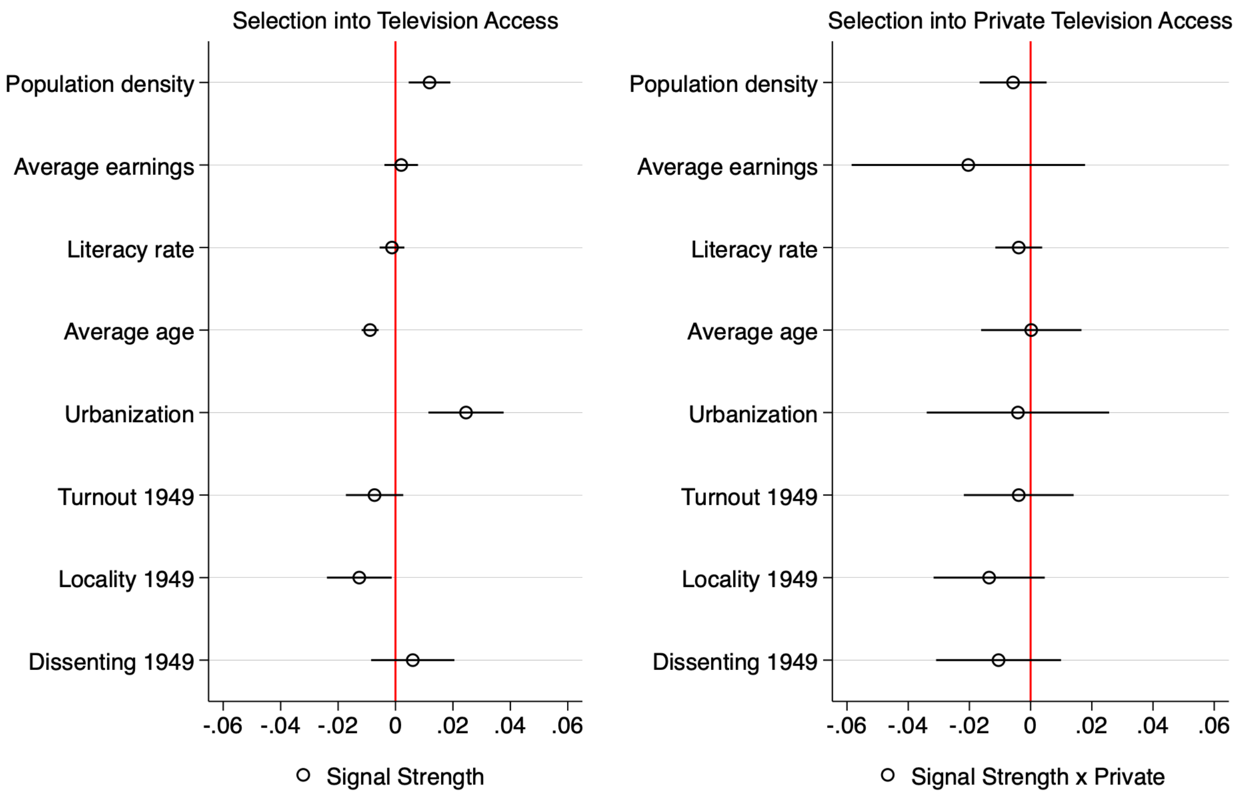
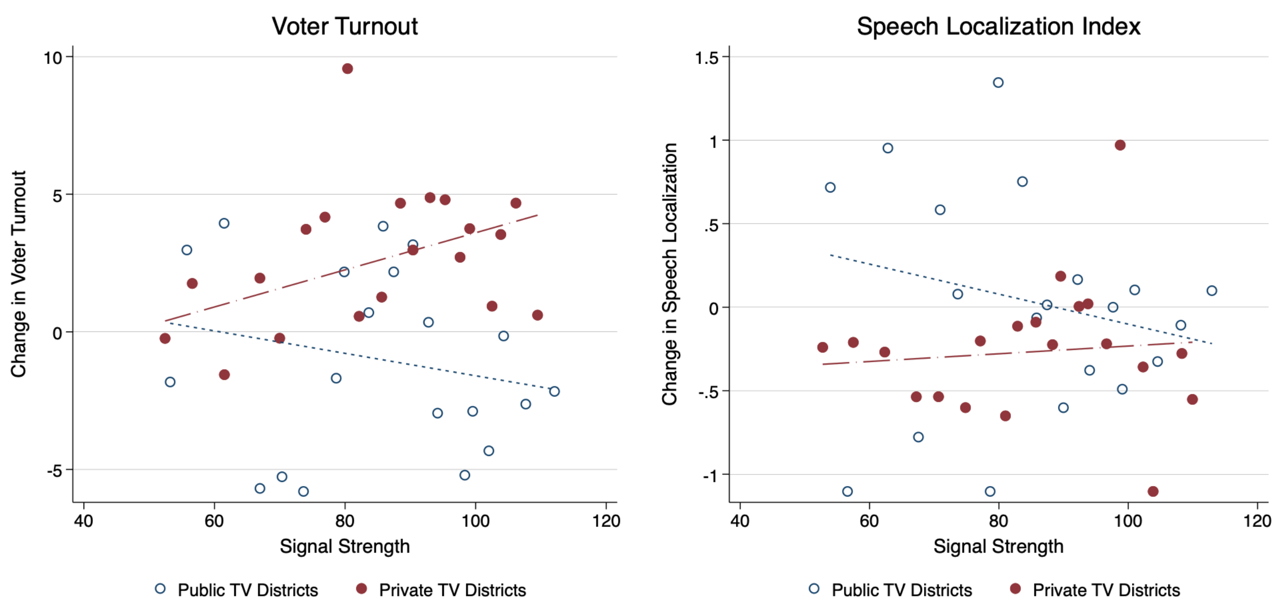
Figure 1: Covariate Balance by Signal Strength and Ownership Type



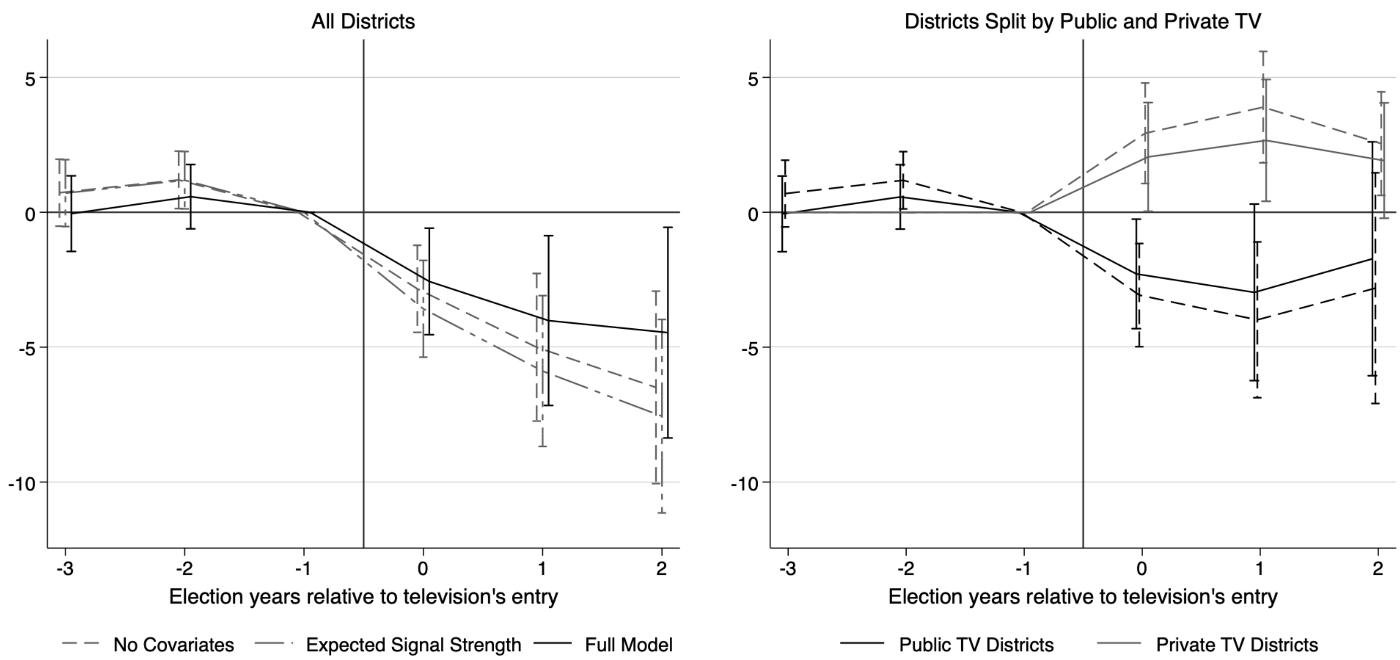
Notes: Observations are at the electoral district level. All outcome variables are standardized, and regressed on $signal_{d,1953}$ and $signal_{d,1953} \times private_{d,1953}$, including province fixed effects and expected signal strength. The left panel plots coefficient estimates for $signal_{d,1953}$ (selection into television access), while the right panel plots estimates for $signal_{d,1953} \times private_{d,1953}$ (selection into private television access). The right panel estimates are conditional on television access, and thus reflects the balance of covariates and pre-treatment outcomes between private and public television districts. Intervals reflect 95% confidence.

Figure 2: Changes in Voter Turnout and Parliamentary Speech Localization



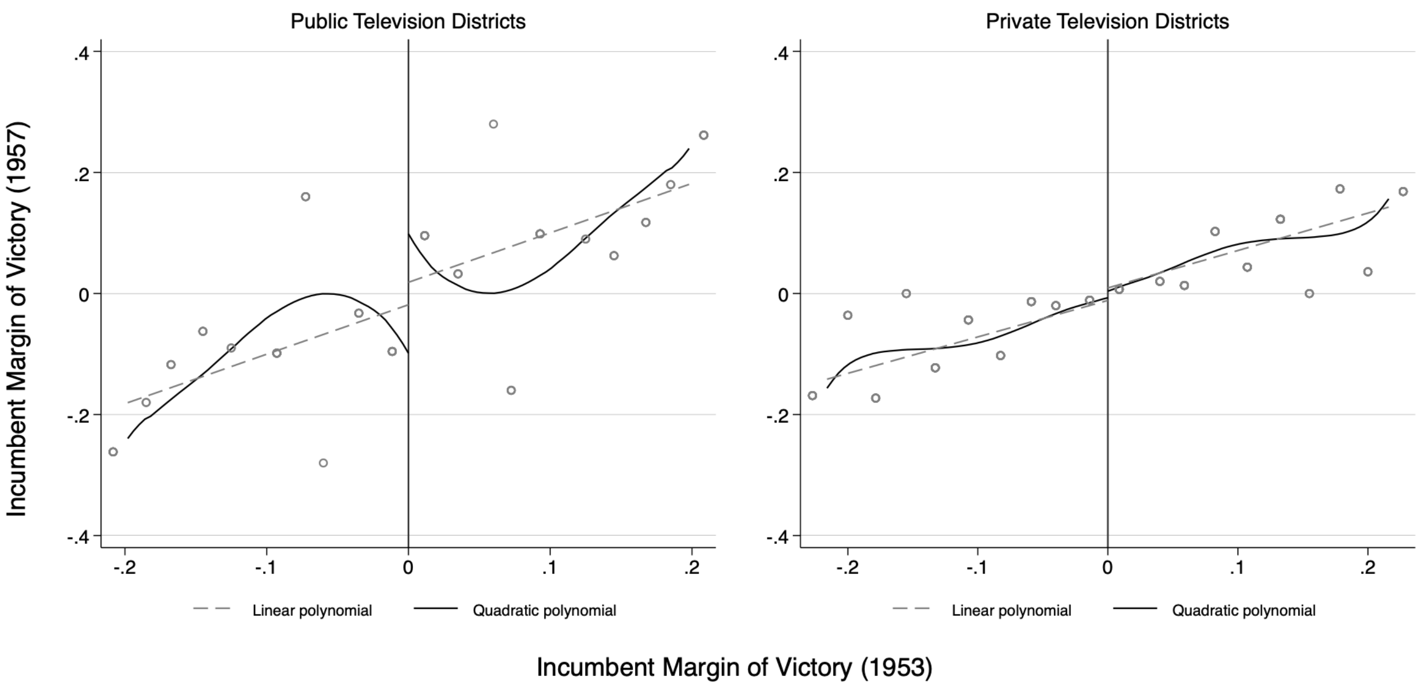
Notes: The figure shows first differences in the outcomes between the 1949 and 1953 election years, plotted against signal strength, separately for private and public television districts, conditional on television access. Observations are at the electoral district level. The outcomes include *Voter Turnout*, defined as total votes cast divided by the size of the electorate, and *Speech Localization*, which captures the geographic orientation of parliamentary speeches. Each point represents the within-district change in the outcome variable.

Figure 3: Event Study of Television Arrival on Voter Turnout



Notes: The figure presents event study estimates of the effect of television arrival on voter turnout. Observations are at the electoral district level. The left panel shows estimates from three specifications. *No Covariates* refers to a specification without covariates or expected signal strength. *Expected Signal Strength* includes a control for expected signal strength. The *Full Model* includes all covariates and expected signal strength. The right panel splits the treatment by type of television access, documenting the differential effect of private and public television content on voter turnout. Dashed lines correspond to the *Expected Signal Strength* specification; solid lines to the *Full Model*. Intervals reflect 95% confidence.

Figure 4: Incumbent Margin of Victory and Television Access by Station Type



Notes: The figure plots the 1957 incumbent margin of victory against the 1953 margin of victory in a regression discontinuity design setting. Observations are at the electoral district level. The sample is split by type of television access in 1957: 77 districts with public television access and 101 with private television access. The incumbent is defined as the district winner in 1953, and their 1953 margin of victory reflects the difference in vote shares with the largest opposition party. If the incumbent is re-elected in 1957, we calculate the margin as in 1953. Otherwise, we calculate the difference between the unseated incumbent's vote share and that of the winning candidate in 1957.

Table 1: Content Difference Across Private and Public Stations

	Share of Total Airtime		*Source of Production*			
	Entertainment	**Information**	**Recorded**	**Network**	**Local**	**Network / Local**
Public Stations	70.8%	29.2%	24.6%	68.3%	7.1%	9.62
Private Stations	75.0%	25.0%	31.2%	54.5%	14.3%	3.81
Public / Private Ratio	**0.94**	**1.17**	**0.79**	**1.25**	**0.50**	**2.52**

Notes: *Share of Total Airtime* denotes the proportion of weekly airtime allocated to each content type, relative to total airtime across public or private stations, including all English- and French-language stations. *Source of Production* describes the geographic origin of content: *Recorded* refers to total weekly airtime drawn from pre-recorded content (whether local or imported); *Network* refers to content from the CBC's national programming service; *Local* refers to content produced locally and broadcast live. These values reflect all viewing hours on English-language stations, while Table A.3 reports the *Source of Production* for French-language stations. The data cover the entire viewing week of January 15-21, 1956 (Smythe, 1957).

Table 2: Television's Impact on Voter Turnout and the Speech Localization Index

	Voter Turnout			**Speech Localization**		
	(1)	(2)	(3)	(4)	(5)	(6)
Signal Strength	-0.054***	-0.053***	-0.042***	-0.001	-0.004**	-0.005**
	(0.010)	(0.012)	(0.013)	(0.002)	(0.002)	(0.002)
Signal Strength $\times$ Private		0.052**	0.058**		0.012**	0.014**
		(0.023)	(0.024)		(0.005)	(0.005)
Private		0.182	-0.957		-0.510	-0.620*
		(1.569)	(1.635)		(0.357)	(0.362)
Covariates	No	No	Yes	No	No	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes
Election-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,795	1,795	1,764	1,674	1,674	1,646
Net Effect Private TV (p-value)		0.878	0.875		0.647	0.361

Notes: OLS estimates of model (3) are based on a panel of electoral districts observed in federal election years between 1935 and 1958. The outcomes are *Voter Turnout*, defined as total votes cast divided by the size of the electorate, and *Speech Localization*, which captures the local orientation of MP parliamentary speeches. All estimates are conditional on expected signal strength and its interaction with the private station indicator. When included, pre-treatment covariates—population density, earnings, age, literacy, and urbanization—are interacted with election-year fixed effects. Robust standard errors, clustered at the district level, are shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 3: Television's Impact on Vote Shares by Political Party and Ideology

	Liberal Vote Share	Conservative Vote Share	Non-Major Vote Share	Left Vote Share	Right Vote Share
	(1)	(2)	(3)	(4)	(5)
Signal Strength	-0.009	-0.029	0.038	-0.023	0.028
	(0.024)	(0.024)	(0.031)	(0.024)	(0.028)
Signal Strength × Private	-0.011	0.058	-0.047	0.031	-0.009
	(0.045)	(0.053)	(0.055)	(0.053)	(0.054)
Private	5.269*	-2.389	-2.880	2.248	-4.635
	(2.911)	(3.282)	(3.613)	(3.150)	(3.139)
Covariates	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes
Election-Year FE	Yes	Yes	Yes	Yes	Yes
Observations	1,764	1,764	1,764	1,764	1,764

Notes: OLS estimates of model (3) are based on a panel of electoral districts observed in federal election years between 1935 and 1958. The outcomes are *Liberal Vote Shares*, defined as the share of votes cast for the Liberal Party; *Conservative Vote Shares*, the share of votes cast for the Conservative Party; and *Non-Major Vote Shares*, the share of total votes cast for all other political parties. The outcomes also include *Left Vote Shares* and *Right Vote Shares*, which respectively denote the share of votes cast for all left-leaning and right-leaning political parties. All estimates are conditional on expected signal strength and its interaction with the private station indicator. Pre-treatment covariates—population density, earnings, age, literacy, and urbanization—are interacted with election-year fixed effects. Robust standard errors, clustered at the district level, are shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 4: Television's Impact on Newspaper Circulation

	Log # of Newspapers	Log Circulation	Log Average Circulation	Circulation Per Capita	Circulation Per Household
	(1)	(2)	(3)	(4)	(5)
Panel A: Daily Newspapers					
Signal Strength	-0.001	-0.002*	-0.001*	-0.001	-0.005
	(0.001)	(0.001)	(0.001)	(0.001)	(0.006)
Signal Strength × Private	-0.000	-0.000	0.000	0.001	0.000
	(0.003)	(0.003)	(0.002)	(0.003)	(0.012)
Private	0.082	0.175	0.079	0.047	0.573
	(0.322)	(0.190)	(0.259)	(0.159)	(0.751)
Covariates	Yes	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Observations	455	453	453	453	442
Panel B: Weekly Newspapers					
Signal Strength	0.005	0.002	-0.003	0.001	0.006
	(0.003)	(0.007)	(0.005)	(0.003)	(0.013)
Signal Strength × Private	-0.001	0.008	0.009	-0.000	-0.004
	(0.009)	(0.014)	(0.009)	(0.004)	(0.017)
Private	-0.303	-0.079	0.224	0.174	0.763
	(0.935)	(1.115)	(0.503)	(0.301)	(1.160)
Covariates	Yes	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Observations	258	258	258	258	252

Notes: OLS estimates of model (3) are based on a panel of cities observed annually from 1945 to 1958. The outcomes are *Log Number of Newspapers*, the log of the number of newspapers in circulation; *Log Circulation*, the log of total newspaper circulation in a year; *Log Average Circulation*, the log of total newspaper circulation divided by the number of newspapers in a city; *Circulation Per Capita*, total newspaper circulation divided by population; and *Circulation Per Household*, total newspaper circulation divided by households. All estimates are conditional on expected signal strength and its interaction with the private station indicator. Pre-treatment covariates—population density, earnings, age, literacy, and urbanization—are interacted with year fixed effects. Robust standard errors, clustered at the district level, are shown in parentheses. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 5: Television's Impact on Electoral Competition

	Incumbent Margin of Victory		
	(1)	(2)	(3)
Signal Strength	0.075**	0.205***	0.220***
	(0.035)	(0.041)	(0.049)
Signal Strength × Private		-0.241**	-0.265**
		(0.114)	(0.119)
Private		-2.370	2.914
		(8.852)	(9.290)
Covariates	No	No	Yes
District FE	Yes	Yes	Yes
Election-Year FE	Yes	Yes	Yes
Observations	1,794	1,794	1,763

Notes: OLS estimates of model (3) are based on a panel of electoral districts observed in federal election years between 1935 and 1958. The outcome is *Incumbent Margin of Victory*, which measures the incumbent's vote share relative to the opposition. All estimates are conditional on expected signal strength and its interaction with the private station indicator. Pre-treatment covariates—population density, earnings, age, literacy, and urbanization—are interacted with year fixed effects. Robust standard errors, clustered at the district level, are shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 6: Television's Impact on Political Behavior—Selection Versus Incentive Effects

	Speech Localization		Dissenting Vote	
	(1)	(2)	(3)	(4)
Signal Strength	-0.005**	-0.002	-0.006**	-0.007
	(0.002)	(0.002)	(0.003)	(0.005)
Signal Strength × Private	0.014**	0.018**	0.011**	0.019*
	(0.005)	(0.008)	(0.006)	(0.010)
Private	-0.620*	-1.241**	-0.100	-0.298
	(0.362)	(0.530)	(0.283)	(0.749)
Covariates	Yes	Yes	Yes	Yes
District FE	Yes	No	Yes	No
Election-Year FE	Yes	Yes	Yes	Yes
District × MP FE	No	Yes	No	Yes
Observations	1,646	1,145	1,509	979

Notes: OLS estimates of model (3) are based on a panel of electoral districts from federal elections between 1935 and 1958. The outcomes are *Speech Localization*, which captures the local orientation of MP parliamentary speeches, and *Dissenting Votes*, defined by how often MPs break from party-line votes in Parliament. All estimates are conditional on expected signal strength and its interaction with the private station indicator. Pre-treatment covariates—population density, earnings, age, literacy, and urbanization—are interacted with year fixed effects. Robust standard errors, clustered at the district level, are shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

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This appendix provides additional evidence in support of our main hypothesis that the geographic scope of information explains the direction of change in the behavior of voters and politicians. In Appendix A we document several additional robustness checks. We then summarize the proposed method of Borusyak and Hull (2023) in Appendix B, and show that alternative ways of modeling expected signal strength lead to the same conclusions and point estimates as our baseline. In Appendix C, we provide evidence in favor of the parallel trends assumption and evidence against treatment effect heterogeneity biasing our results. Finally, Appendix D describes the data and sources.

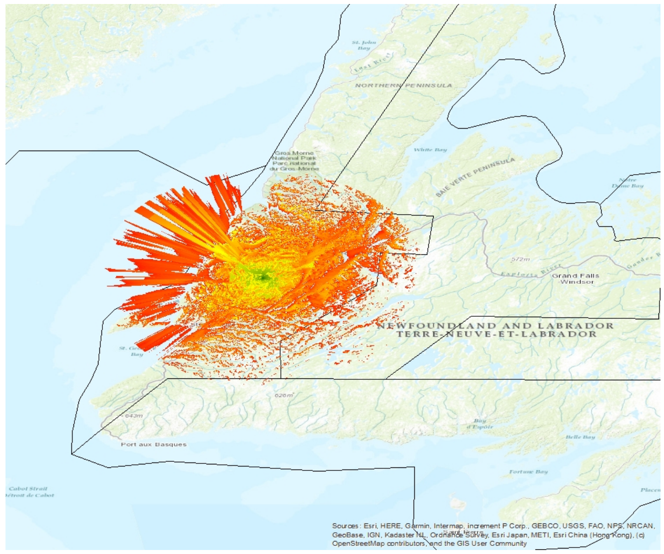
A Additional Empirical Evidence

In this section, we provide figures and tables that are supplementary to our main findings, including various robustness checks. We conclude that our estimates are robust to various alternative specifications and subsamples.

Appendix Figures

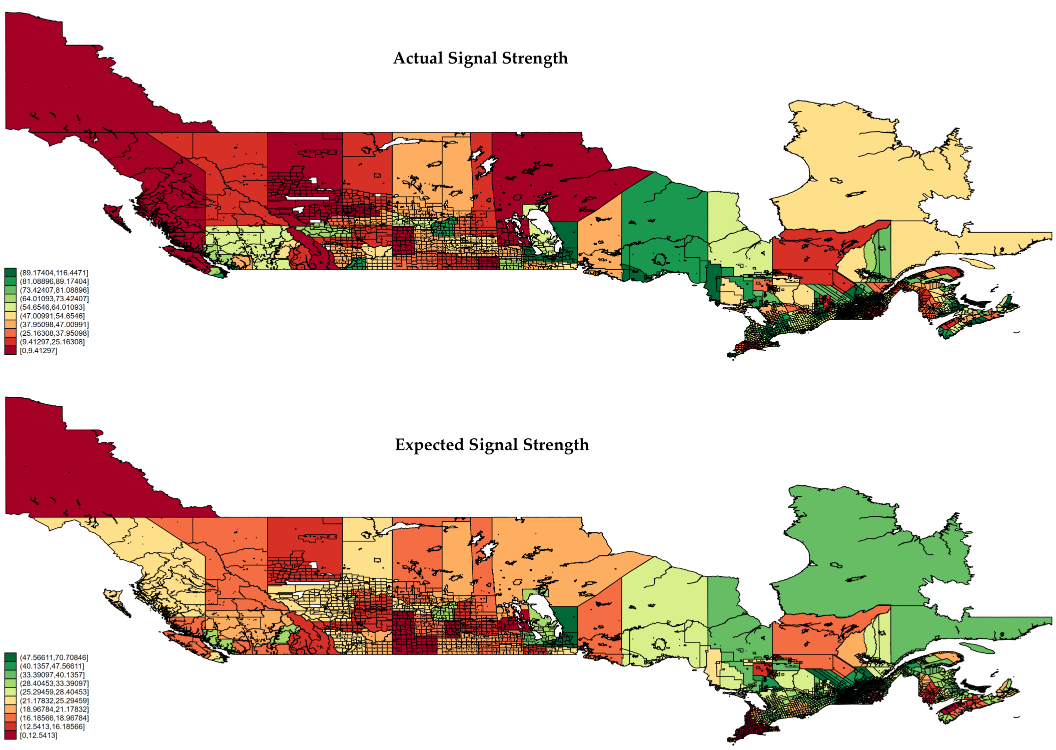
Appendix Tables

Figure A.1: Example ITM Signal Strength Estimate



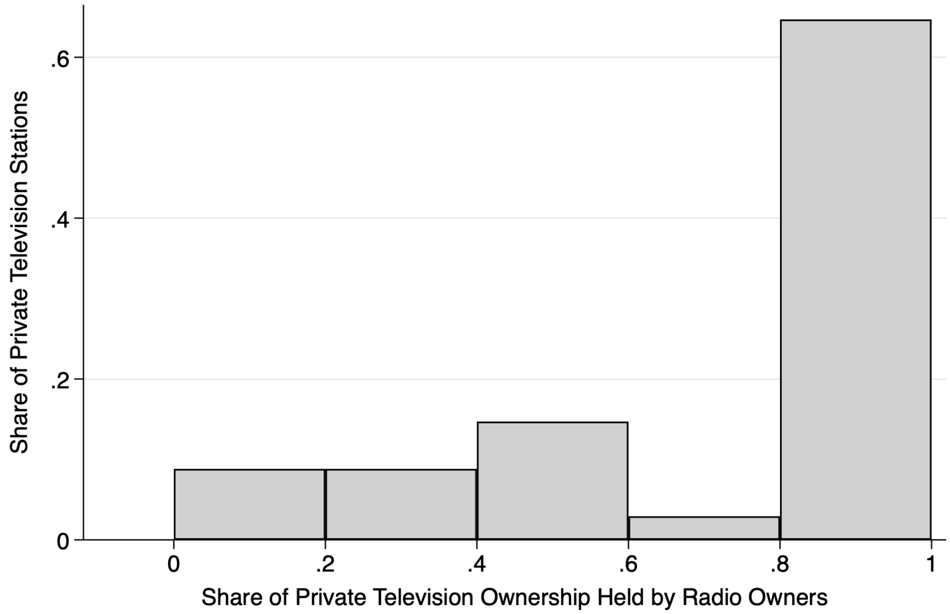
Notes: Irregular Terrain Model estimate for CBYT station, Corner Brook, Newfoundland. Green colors represent the strongest signal strength, with an attenuation is strength as the color gradient transitions to red. Black lines represent electoral district boundaries, with CBYT located in the Humber–St George electoral district.

Figure A.2: Example of Actual and Expected Signal Strength Estimates by Electoral Districts



Notes: This figure visualizes actual and expected signal strength at the electoral district level for public television.

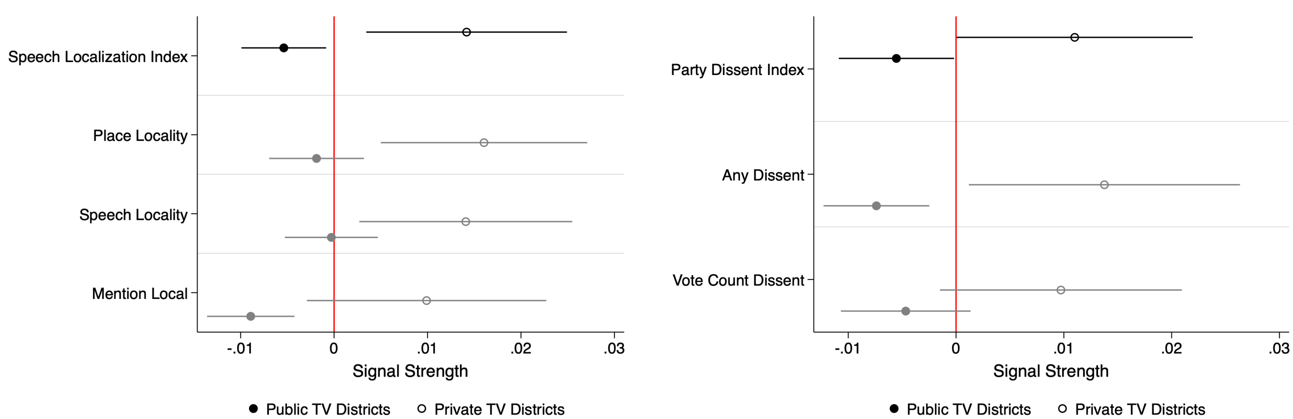
Figure A.3: Cross-Ownership of Private Television and Radio Stations



Notes: The histogram shows the fraction of private television stations by the degree of cross-media ownership with radio broadcasters. For each station, we calculate the product of each owner's share in the television and radio station, and sum these values across all owners. This measure captures the extent to which television station ownership is tied to radio station ownership—i.e., the intensity of joint cross-media ownership at the station level. Values are based on a complete list of private television stations in 1956 (Royal Commission on Broadcasting, 1957, Appendix VIII).

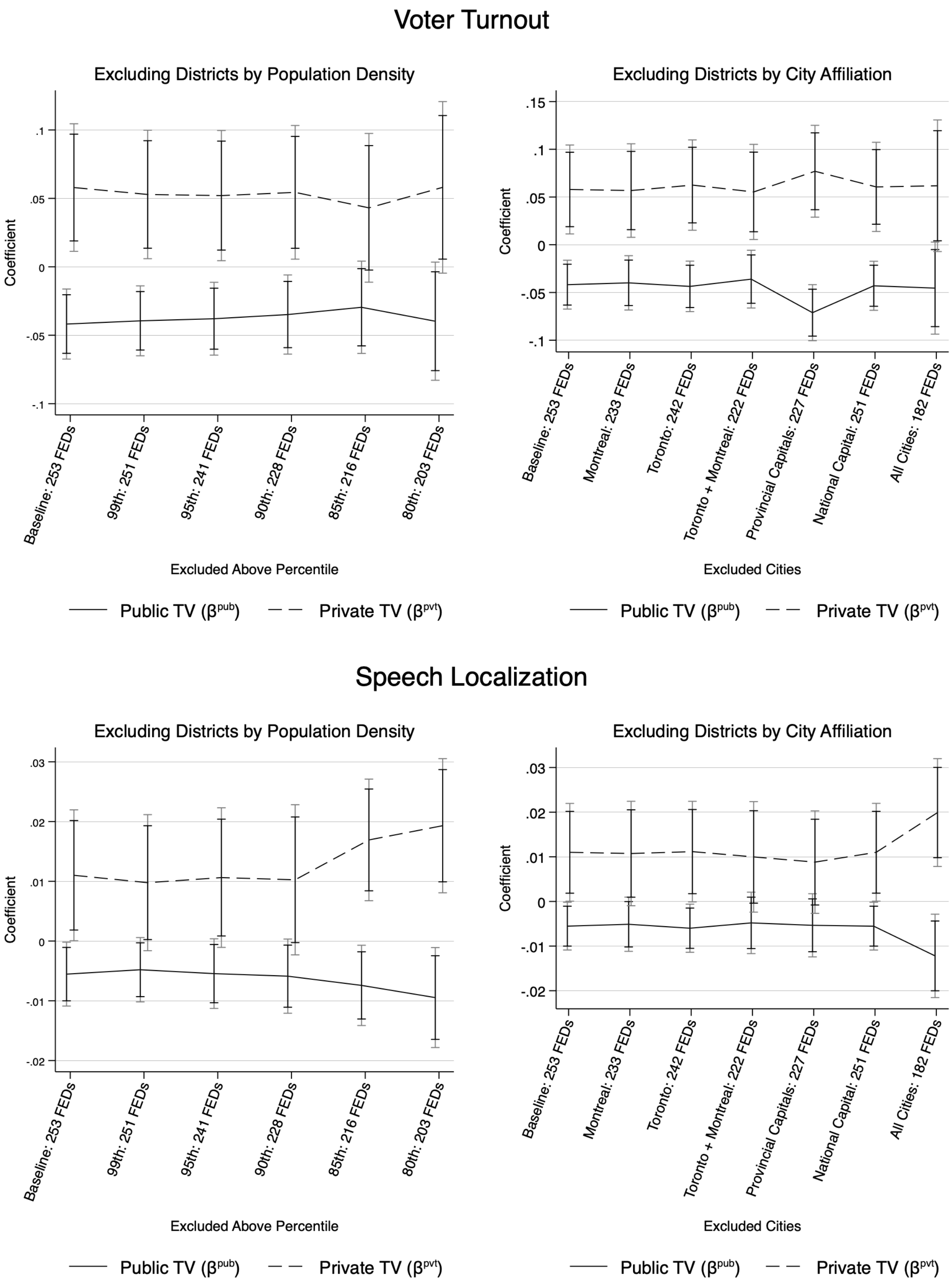
Figure A.4: Individual Estimates for the Speech Localization Index and Party Dissent Index

(a) Speech Localization **(b)** Party Dissent



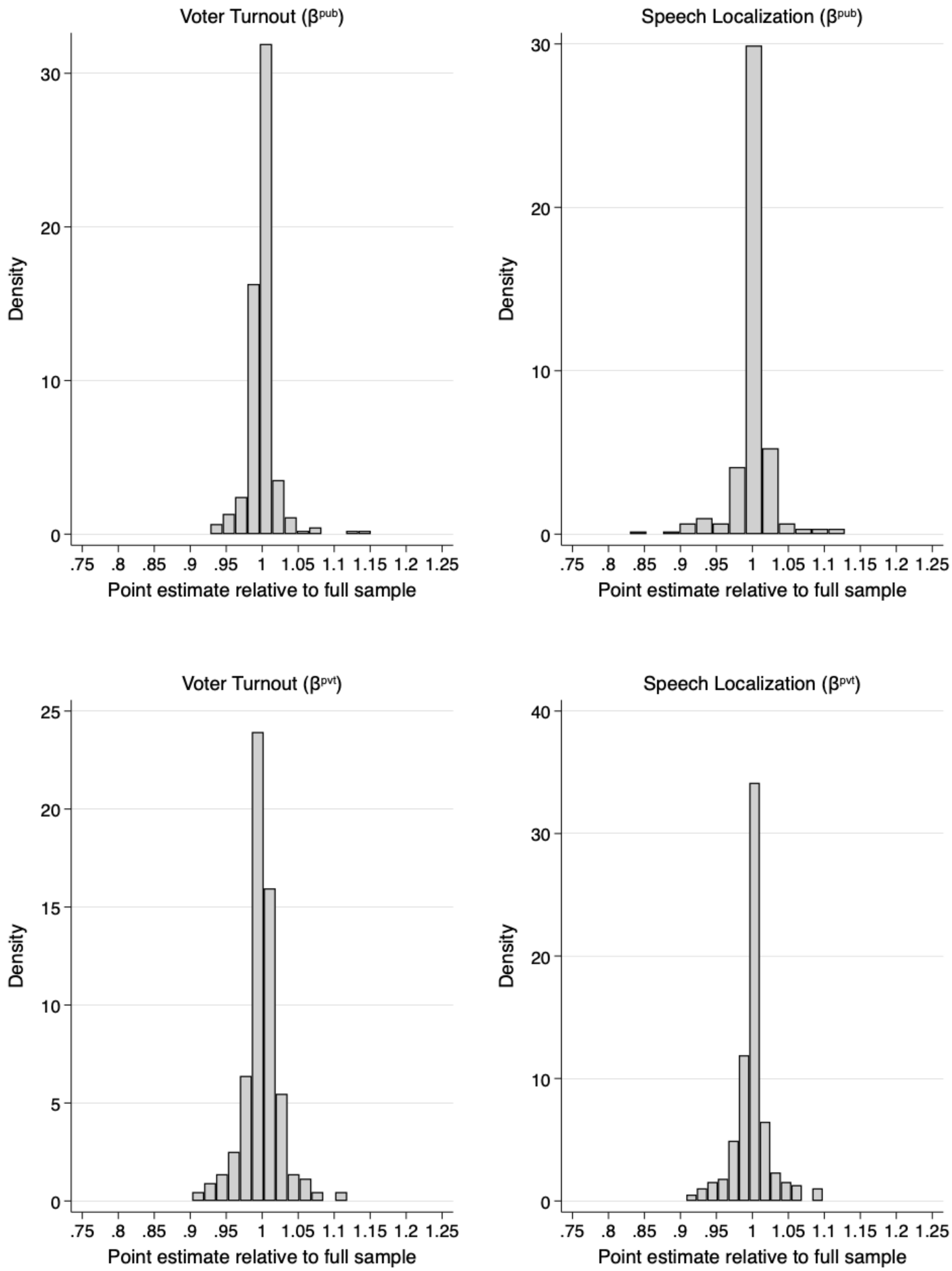
Notes: The figure reports OLS estimates of model (3), based on a panel of electoral districts observed in federal election years from 1935 to 1958. The outcomes include *Speech Localization*, which measures the geographic focus of parliamentary speeches, and *Dissenting Votes*, defined as the frequency with which MPs vote against their party. Additional outcomes reflect the individual components of each index. All specifications control for expected signal strength and its interaction with the private station indicator. We also control for electoral district and election-year fixed effects, as well as covariates—population density, earnings, average age, literacy, and urbanization rates—interacted with election-year fixed effects. The p-values for estimates of β^{pvt} are below 0.05 for *Speech Localization* and below 0.10 for *Dissenting Votes*. Robust standard errors are clustered at the electoral district level, and intervals reflect 95% confidence.

Figure A.5: Sensitivity Analysis — Excluding Large and Politically Influential Population Centers



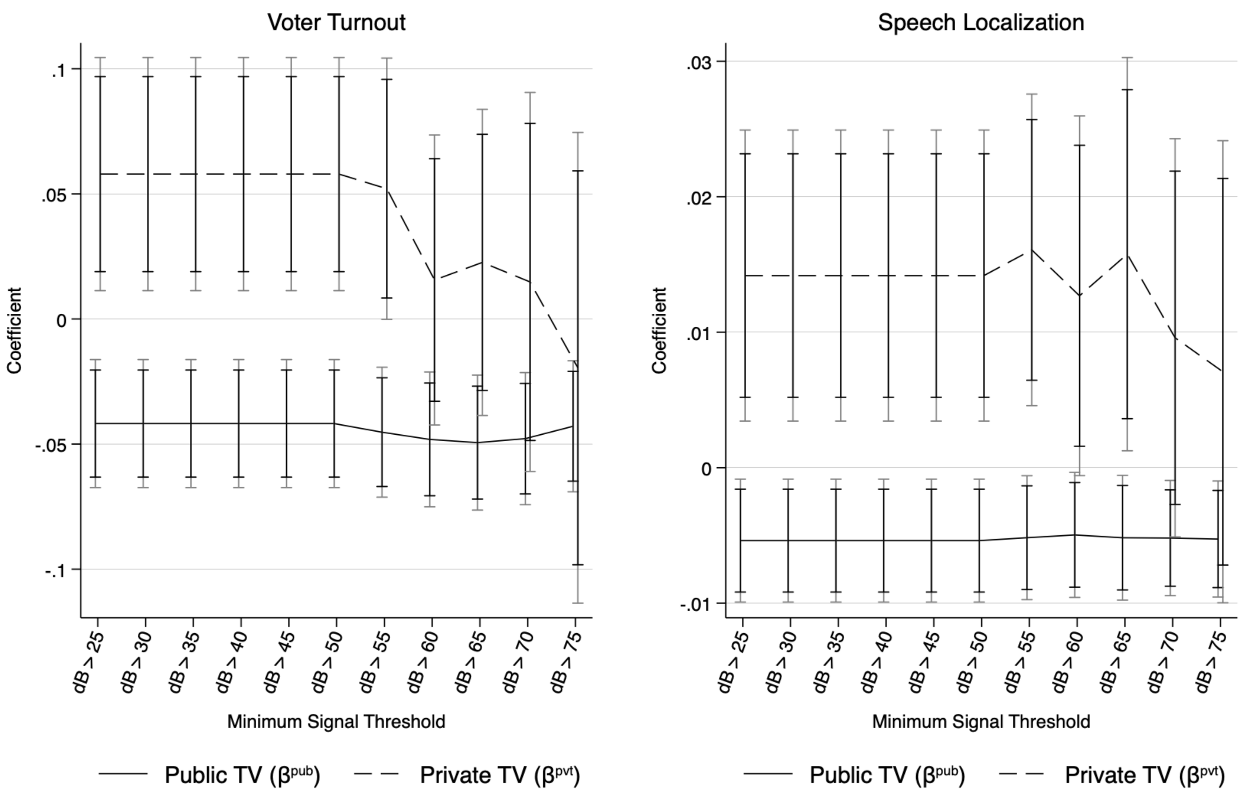
Notes: The figure reports OLS estimates of model (3), based on a panel of electoral districts observed in federal election years from 1935 to 1958. Each estimate excludes population-dense or politically influential districts. The outcomes include *Voter Turnout*, defined as total votes cast divided by the size of the electorate, and *Speech Localization*, which captures the geographic orientation of parliamentary speeches. In the left panel of each sub-figure, we plot estimates excluding districts above the noted percentile in population density. In the right panel, we plot estimates excluding districts based on city affiliation. All panels include the full-sample baseline estimate for reference. Provincial capitals are Victoria, Edmonton, Regina, Winnipeg, Toronto, Quebec City, St. John's, Fredericton, Halifax, and Charlottetown. The national capital is Ottawa. Large non-capital cities include Vancouver, Burnaby, Calgary, Hamilton, Windsor, York, and Montreal. All estimates include expected signal strength and its interaction with the private station indicator. We also control for electoral district and election-year fixed effects, as well as covariates—population density, earnings, average age, literacy, and urbanization rates—interacted with election-year fixed effects. Robust standard errors are clustered at the electoral district level. Light grey intervals reflect 90% confidence; darker intervals reflect 95% confidence.

Figure A.6: Sensitivity Analysis — Excluding Individual Districts



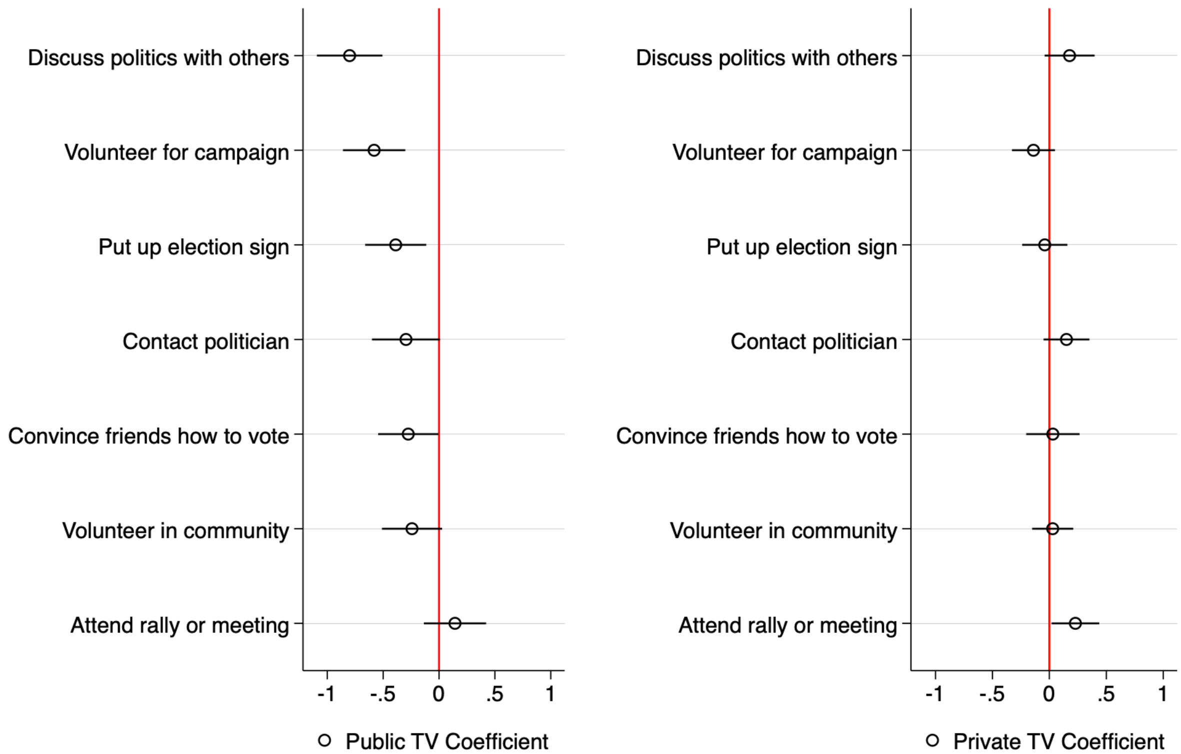
Notes: The figure reports OLS estimates of model (3), based on a panel of electoral districts observed in federal election years from 1935 to 1958. The top sub-figures plot estimates of β^{pub}, while the bottom sub-figures plot estimates of β^{pvt}. Each estimate is obtained by excluding one electoral district d at a time. We plot these estimates relative to the full-sample estimate to illustrate the robustness of our baseline results. A value of 1 indicates that excluding district d had no impact on the estimated treatment effect. The outcomes include *Voter Turnout*, defined as total votes cast divided by the size of the electorate, and *Speech Localization*, which captures the geographic orientation of parliamentary speeches. All estimates include expected signal strength and its interaction with the private station indicator. We also control for electoral district and election-year fixed effects, as well as covariates—population density, earnings, average age, literacy, and urbanization rates—interacted with election-year fixed effects. Robust standard errors are clustered at the electoral district level.

Figure A.7: Sensitivity Analysis — Varying the Minimum Threshold for Television Signal Strength



Notes: The figure reports OLS estimates of model (3), based on a panel of electoral districts observed in federal election years from 1935 to 1958. Each estimate adjusts the minimum threshold for television signal strength, ranging from 25 to 75 dBμV/m. The outcomes include *Voter Turnout*, defined as total votes cast divided by the size of the electorate, and *Speech Localization*, which captures the geographic orientation of parliamentary speeches. All estimates include expected signal strength and its interaction with the private station indicator. We also control for electoral district and election-year fixed effects, as well as covariates—population density, earnings, average age, literacy, and urbanization rates—interacted with election-year fixed effects. Robust standard errors are clustered at the electoral district level. Light grey intervals reflect 90% confidence; darker intervals reflect 95% confidence.

Figure A.8: Survey Evidence — Television and Non-Voting Political Activities



Notes: The figure reports OLS estimates of δ^{pub} and δ^{pvt} from the model $y_{i(d,p)} = \alpha_p + \delta^{pub}\ public_d + \delta^{pvt}\ private_d + \gamma\ \mathbf{x}_i + \epsilon_i$, where y denotes the standardized index for each non-voting political activity. Each respondent i resides in electoral district d, located in province p. The variables $public_d$ and $private_d$ are indicators for districts that exclusively received public or private television in 1969, based on estimated signal strength. The outcomes are constructed from survey questions in the 1974 *Canadian Election Study*, categorized as *Group Electoral Activities*. For each outcome shown on the y-axis, respondents were asked how often they engaged in the activity in four contexts: the last federal election, federal elections in general, provincial elections in general, and local elections in general. Responses use a four-point scale from "never" to "often." These are combined into a standardized index following the method in Anderson (2008). All specifications control for expected public and private signal strength, income, years of education, gender, age, age squared, ethnicity fixed effects, community-size fixed effects, country-of-birth fixed effects, and province fixed effects. Robust standard errors are clustered at the electoral district level. Intervals reflect 95% confidence.

Table A.1: Programming Categories by Total Airtime and Source of Production

Content Category	Total Airtime	*Source of Production*			
		Recorded	**Network**	**Local**	**Network / Local**
Panel A: Informational Programming					
News and Weather	5.8%	2.3%	39.8%	57.9%	0.69
Family Living and Shopping	4.2%	7.6%	21.8%	70.6%	0.31
Canadian Activities and Heritage	3.6%	6.3%	78.8%	14.9%	5.29
Youth Educational Programs	3.1%	3.2%	96.4%	0.4%	241.00
Religion	2.1%	12.4%	76.3%	11.3%	6.75
Foreign Lands and Peoples	1.6%	29.3%	68.5%	2.2%	31.14
Political and Public Affairs	1.5%	0.0%	95.4%	4.6%	20.74
Social and Human Relations	1.5%	2.0%	94.4%	3.6%	26.22
Nature and Science	0.9%	18.1%	80.2%	1.7%	47.18
Agriculture, Fisheries, etc.	0.8%	1.6%	85.0%	13.4%	6.34
Miscellaneous Information	0.7%	18.4%	76.2%	5.4%	14.11
Programme Promotions	0.3%	11.2%	39.0%	49.8%	0.78
All Informational Programming	26.1%	7.2%	63.5%	29.3%	2.17
Panel B: Entertainment Programming					
Drama Programs	42.6%	–	–	–	–
Variety	12.0%	–	–	–	–
Music Programs	7.4%	–	–	–	–
Sports Programs	7.3%	–	–	–	–
Quiz, Games and Contests	1.8%	–	–	–	–
Personalities	1.3%	–	–	–	–
Other Children Programs	0.7%	–	–	–	–
Fine Arts, Literature, etc.	0.6%	–	–	–	–
Dance	0.3%	–	–	–	–
All Entertainment Programming	73.9%	34.9%	59.0%	6.1%	9.64
All Programming	100%	27.5%	60.2%	12.3%	4.89

Notes: *Total Airtime* indicates the proportion of weekly airtime devoted to each programming class, relative to total airtime across all stations. *Source of Production* describes the geographic origin of content: *Recorded*, *Network*, and *Local* refer to pre-recorded content (whether local or imported), content drawn from the CBC's national programming service, and content produced locally and broadcast live, respectively. Source: Smythe (1957, p. 59, 65 & 80).

Table A.2: Informational and Entertainment Content by Station Type, Language of Service and Time Slot

Class of Station and Time Slot	*Share of Total Airtime* Entertainment	Information
Panel A: All Stations		
All Hours		
Public Stations	70.8%	29.2%
Private Stations	75.0%	25.0%
Public / Private Ratio	**0.94**	**1.17**
Panel B: English-Language Stations		
All Hours		
Public Stations	73.9%	26.1%
Private Stations	75.5%	24.5%
Public / Private Ratio	**0.98**	**1.07**
General Audience Hours		
Public Stations	65.0%	35.0%
Private Stations	73.4%	26.6%
Public / Private Ratio	**0.89**	**1.32**
Adult Audience Hours		
Public Stations	82.9%	17.1%
Private Stations	81.3%	18.7%
Public / Private Ratio	**1.02**	**0.91**
Panel C: French-Language Stations		
All Hours		
Public Stations	61.5%	38.5%
Private Stations	68.8%	31.2%
Public / Private Ratio	**0.89**	**1.23**
General Audience Hours		
Public Stations	51.0%	49.0%
Private Stations	63.9%	36.1%
Public / Private Ratio	**0.80**	**1.35**
Adult Audience Hours		
Public Stations	82.1%	17.9%
Private Stations	77.8%	22.2%
Public / Private Ratio	**1.06**	**0.81**

Notes: *Share of Total Airtime* denotes the proportion of weekly airtime allocated to each content type, relative to total airtime across all stations. *General Audience Hours* are Monday to Friday from 18:30 to 21:00, and from sign-on to 21:00 on weekends. *Adult Audience Hours* span 21:00 to sign-off, seven days a week. Source: Smythe (1957, p. 46, 95 & 107).

Table A.3: Content Origin by Station Type, Language of Service and Audience Time Slot

	Source of Production			
Class of Station and Time	**Recorded**	**Network**	**Local**	**Network / Local**
Panel A: English-Language Stations				
All Hours – Information & Entertainment				
Public Stations	24.6%	68.3%	7.1%	9.62
Private Stations	31.2%	54.5%	14.3%	3.81
Public / Private Ratio	**0.79**	**1.25**	**0.50**	**2.52**
General Audience Hours – Information Only				
Public Stations	6.8%	76.8%	16.4%	4.68
Private Stations	10.7%	59.9%	29.4%	2.04
Public / Private Ratio	**0.64**	**1.28**	**0.56**	**2.30**
Adult Audience Hours – Information Only				
Public Stations	3.7%	84.8%	11.5%	7.37
Private Stations	8.6%	70.4%	21.0%	3.35
Public / Private Ratio	**0.43**	**1.20**	**0.55**	**2.20**
Panel B: French-Language Stations				
All Hours – Information & Entertainment				
Public Stations	1.4%	98.6%	0.0%	∞
Private Stations	18.5%	64.2%	17.3%	3.71
Public / Private Ratio	**0.08**	**1.54**	**0.00**	**–**
General Audience Hours – Information Only				
Public Stations	2.9%	97.1%	0.0%	∞
Private Stations	8.0%	74.9%	17.1%	4.38
Public / Private Ratio	**0.36**	**1.30**	**0.00**	**–**
Adult Audience Hours – Information Only				
Public Stations	0.0%	100.0%	0.0%	∞
Private Stations	2.0%	77.6%	20.4%	3.80
Public / Private Ratio	**0.00**	**1.29**	**0.00**	**–**

Notes: *Source of Production* describes the geographic origin of content: *Recorded*, *Network*, and *Local* indicate the share of total weekly airtime drawn from pre-recorded content (whether local or imported), the CBC's national programming service, and locally produced live broadcasts, respectively. *General Audience Hours* are defined as Monday to Friday from 18:30 to 21:00, and from sign-on to 21:00 on weekends. *Adult Audience Hours* span 21:00 to sign-off, seven days a week. Source: Smythe (1957, p. 76 & 122).

Table A.4: Television's Impact by Language of Service

	Voter Turnout		Speech Localization	
	(1)	(2)	(3)	(4)
Signal Strength (E)	-0.043***	-0.027**	-0.002*	-0.002
	(0.009)	(0.011)	(0.001)	(0.002)
Signal Strength (E) × Private (E)	0.046**	0.046*	0.014***	0.013**
	(0.023)	(0.024)	(0.005)	(0.005)
Signal Strength (F)	-0.041***	-0.022*	0.002	0.002
	(0.010)	(0.013)	(0.002)	(0.002)
Signal Strength (F) × Private (F)	0.040	0.047	-0.010	-0.009
	(0.046)	(0.049)	(0.008)	(0.008)
Private (E)	-0.686	-1.423	-1.065***	-1.032***
	(1.797)	(1.833)	(0.381)	(0.387)
Private (F)	-3.197	-5.131	0.954	0.872
	(3.941)	(4.255)	(0.628)	(0.592)
Covariates	No	Yes	No	Yes
District FE	Yes	Yes	Yes	Yes
Election-Year FE	Yes	Yes	Yes	Yes
Observations	1,795	1,764	1,674	1,646

Notes: OLS estimates of model (3) are based on a panel of electoral districts observed in federal election years between 1935 and 1958. The outcomes are *Voter Turnout*, defined as total votes cast divided by the size of the electorate, and *Speech Localization*, which captures the local orientation of MP parliamentary speeches. Variable labels (E) correspond to English-language station signals, and (F) to French-language station signals. All estimates are conditional on expected signal strength and its interaction with the private station indicator. Pre-treatment covariates—population density, earnings, age, literacy, and urbanization—are interacted with election-year fixed effects. Robust standard errors, clustered at the district level, are shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.5: Robustness — Testing for Selection into Private Broadcasting

	Voter Turnout		Speech Localization	
	(1)	(2)	(3)	(4)
Panel A: Radio stations within 50km				
Signal Strength	-0.042***	-0.056***	-0.005**	-0.006**
	(0.013)	(0.014)	(0.002)	(0.002)
Signal Strength × Private	0.058**	0.059**	0.014**	0.014**
	(0.024)	(0.024)	(0.005)	(0.005)
Private	-0.957	-1.288	-0.620*	-0.636*
	(1.635)	(1.640)	(0.362)	(0.364)
Panel B: Radio Stations within 75km				
Signal Strength	-0.042***	-0.040***	-0.005**	-0.005**
	(0.013)	(0.013)	(0.002)	(0.002)
Signal Strength × Private	0.058**	0.052**	0.014**	0.014**
	(0.024)	(0.024)	(0.005)	(0.006)
Private	-0.957	-1.040	-0.620*	-0.640*
	(1.635)	(1.604)	(0.362)	(0.363)
Panel C: Radio Stations within 100km				
Signal Strength	-0.042***	-0.038***	-0.005**	-0.005**
	(0.013)	(0.013)	(0.002)	(0.002)
Signal Strength × Private	0.058**	0.051**	0.014**	0.014**
	(0.024)	(0.024)	(0.005)	(0.006)
Private	-0.957	-1.103	-0.620*	-0.642*
	(1.635)	(1.620)	(0.362)	(0.363)
# Radio Stations × Election-Year FE	No	Yes	No	Yes
Covariates	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes
Election-Year FE	Yes	Yes	Yes	Yes
Observations	1,764	1,764	1,646	1,646

Notes: OLS estimates of model (3) are based on a panel of electoral districts observed in federal election years between 1935 and 1958. The outcomes are *Voter Turnout*, defined as total votes cast divided by the size of the electorate, and *Speech Localization*, which captures the local orientation of MP parliamentary speeches. Each panel reports estimates using different definitions of radio station proximity, defined by a radius of $\chi \in \{50\text{km}, 75\text{km}, 100\text{km}\}$. Columns (1) and (3) report estimates for the benchmark specification, while columns (2) and (4) are conditional on the number of radio stations within χ-kilometers of a district, interacted with election-year fixed effects. All estimates are conditional on expected signal strength and its interaction with the private station indicator. Pre-treatment covariates—population density, earnings, age, literacy, and urbanization—are interacted with election-year fixed effects. Robust standard errors, clustered at the district level, are shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.6: Robustness — Different Identification Strategies

	Two-Way FE		Free-Space Signal		Expected Signal	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Voter Turnout						
Signal Strength	-0.043***	-0.031***	-0.050***	-0.042***	-0.053***	-0.042***
	(0.007)	(0.008)	(0.007)	(0.009)	(0.012)	(0.013)
Signal Strength × Private	0.038*	0.042**	0.066	0.048	0.052**	0.058**
	(0.019)	(0.020)	(0.056)	(0.058)	(0.023)	(0.024)
Private	0.068	-0.894	3.858	0.752	0.182	-0.957
	(1.566)	(1.638)	(6.650)	(6.860)	(1.569)	(1.635)
Observations	1,795	1,764	1,795	1,764	1,795	1,764
Panel B: Speech Localization Index						
Signal Strength	-0.002*	-0.002	-0.002	-0.002	-0.004**	-0.005**
	(0.001)	(0.002)	(0.001)	(0.002)	(0.002)	(0.002)
Signal Strength × Private	0.005	0.007	0.024**	0.022*	0.012**	0.014**
	(0.004)	(0.005)	(0.012)	(0.011)	(0.005)	(0.005)
Private	-0.526	-0.609*	1.828	1.275	-0.510	-0.620*
	(0.360)	(0.363)	(1.469)	(1.369)	(0.357)	(0.362)
Observations	1,674	1,646	1,674	1,646	1,674	1,646
Covariates	No	Yes	No	Yes	No	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes
Election-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1674	1646	1674	1646	1674	1646

Notes: OLS estimates of model (3) are based on a panel of electoral districts observed in federal election years between 1935 and 1958. Columns (1) and (2) report estimates from a two-way fixed effects specification that foregoes an identification strategy. Columns (3) and (4) condition on free-space signal strength, while columns (5) and (6) replicate the baseline estimates using expected signal strength for comparability. The outcome in Panel A is *Voter Turnout*, defined as total votes cast divided by the size of the electorate. The outcome in Panel B is *Speech Localization*, which captures the local orientation of MP parliamentary speeches. All estimates are conditional on expected signal strength and its interaction with the private station indicator. When included, pre-treatment covariates—population density, earnings, age, literacy, and urbanization—are interacted with election-year fixed effects. Robust standard errors, clustered at the district level, are shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.7: Robustness — Long and Short Panel Estimates

	Voter Turnout			Speech Localization		
	(1)	(2)	(3)	(4)	(5)	(6)
Signal Strength	-0.042***	-0.046***	-0.058***	-0.005**	-0.004**	-0.003
	(0.013)	(0.010)	(0.017)	(0.002)	(0.002)	(0.004)
Signal Strength × Private	0.058**	0.055***	0.067**	0.014***	0.009**	0.017**
	(0.024)	(0.019)	(0.030)	(0.005)	(0.004)	(0.007)
Private	-0.957	-0.568	0.574	-0.679*	-0.458**	-1.263**
	(1.635)	(1.297)	(2.194)	(0.362)	(0.222)	(0.504)
Sample Years	1935-1958	1935-1968	1935-1958	1935-1958	1935-1968	1935-1958
First Treatment Only	No	No	Yes	No	No	Yes
Covariates	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes
Election-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,764	2,764	1,489	1,646	2,534	1,401

Notes: OLS estimates of model (3) are based on a panel of electoral districts observed in federal election years (panel years noted in table). The outcomes are *Voter Turnout*, defined as total votes cast divided by the size of the electorate, and *Speech Localization*, which captures the local orientation of MP parliamentary speeches. Columns (2) and (5) extend the panel to include elections in 1962, 1963, 1965, and 1968 (post-single-station policy). Columns (3) and (6) estimate the average treatment effect for the first treatment period only; observations from treated districts are excluded after treatment occurs. These subsample estimates are therefore not affected by heterogeneous treatment effects that grow over time. All estimates are conditional on expected signal strength and its interaction with the private station indicator. Columns (1) and (4) report baseline estimates. Pre-treatment covariates—population density, earnings, age, literacy, and urbanization—are interacted with election-year fixed effects. Robust standard errors, clustered at the district level, are shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.8: Robustness — Drop Dual Treated Districts

	Voter Turnout		Speech Localization	
	(1)	(2)	(3)	(4)
Signal Strength	-0.042***	-0.043***	-0.005**	-0.006**
	(0.013)	(0.013)	(0.002)	(0.002)
Signal Strength × Private	0.058**	0.066***	0.014**	0.015***
	(0.024)	(0.024)	(0.005)	(0.006)
Private	-0.957	-1.545	-0.620*	-0.627*
	(1.635)	(1.685)	(0.362)	(0.360)
Drop Dual Treatments	No	Yes	No	Yes
Covariates	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes
Election-Year FE	Yes	Yes	Yes	Yes
Observations	1,764	1,660	1,646	1,549

Notes: OLS estimates of model (3) are based on a panel of electoral districts observed in federal election years between 1935 and 1958. The outcomes are *Voter Turnout*, defined as total votes cast divided by the size of the electorate, and *Speech Localization*, which captures the local orientation of MP parliamentary speeches. There are 15 districts in the sample where measures of local private and national public signal strength are both non-zero, even though these districts receive public and private television in non-overlapping space. These districts potentially contaminate the clean separation that the single-station policy otherwise guarantees. Columns (1) and (3) report baseline estimates for comparison, while columns (2) and (4) report estimates from the subsample that excludes these contaminated districts. All estimates are conditional on expected signal strength and its interaction with the private station indicator. Pre-treatment covariates—population density, earnings, age, literacy, and urbanization—are interacted with election-year fixed effects. Robust standard errors, clustered at the district level, are shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.9: Political Parties in Parlinfo Database by Left-Right Assignment

Political Spectrum	Political Party Name in Parlinfo
Left-Leaning	Liberal Party of Canada, New Democratic Party, Green Party of Canada, Progressive, Co-operative Commonwealth Federation, Independent Liberal, Liberal Progressive, Labour, Liberal Labour Party, Unionist (Liberal), Independent Progressive, Labor-Progressive Party, Nationalist Liberal, Independent Co-operative Commonwealth Federation, Bloc Québécois, Patrons of Industry, Independent Labour, United Farmers of Alberta, United Farmers of Ontario, United Farmers of Ontario-Labour, United Farmers, United Reform Movement, Unity, Labor-Progressive Party, Bloc populaire canadien, New Party, Rhinoceros Party, Rhinoceros Party of Canada, Marxist-Leninist Party of Canada, Canadian Action Party, Marijuana Party, Natural Law Party of Canada, Party for the Commonwealth of Canada, Union Populaire, Animal Protection Party of Canada, Communist Party of Canada, Independent Liberal Progressive, Liberal Labour Progressive, Liberal Protectionist, National Labour, National Unity, Opposition-Labour, Progressive Canadian Party, United Farmers-Labour, Radical Chrétien, Socialist, United Reform, Opposition, Farmer, Farmer Labour, Labour Farmer, Non-Partisan League, National Liberal Progressive, National Party of Canada, Parti Ouvrier Canadien, Protectionist, Trades Union, United Progressive, Verdun, Socialist Labour, Canadian Labour, Christian Liberal, Farmer-United Labour, National Socialist, Ouvrier Indépendant, Strength in Democracy, Animal Alliance, Environment Voters Party of Canada, First Peoples National Party of Canada, Ouvrier indépendent, Progressive Workers Movement, Work Less Party
Right-Leaning	Progressive Conservative Party, Conservative (1867-1942), Conservative Party of Canada, Social Credit Party of Canada, Liberal-Conservative, Conservative Party of Canada, Social Credit Party of Canada, Reform Party of Canada, Canadian Reform Conservative Alliance, Independent Conservative, Nationalist Conservative, Independent Progressive Conservative, New Democracy, Ralliement des créditistes, Unionist, McCarthyite, Nationalist, Reconstruction Party, Independent Reconstruction Party, Confederation of Regions Western Party, Social Credit Party of Canada, Libertarian Party of Canada, Abolitionist Party of Canada, Canadian Party, Candidate of the Electors, Conservative-Labour, Independent Nationalist, People's Party of Canada, People's Party of Canada, Union of Electors, National Liberal and Conservative Party (1921), Reform, Protestant Protective Association, Unité nationale, National Government, Parti Nationaliste du Québec, Candidat libéral des électeurs, Christian Heritage Party of Canada, Independent Social Credit, Maverick Party, Social Credit-National Unity, Democratic Advancement Party of Canada, Liberal Conservative Coalition, New Capitalist Party, Newfoundland and Labrador First Party, Prohibitionist, Technocrat, Free Party Canada, Canada Party, Western Block Party, Canadian Nationalist Party, National Citizens Alliance of Canada, Parti pour l'Indépendance du Québec

Notes: In this table we document our assignment of political parties across the left-right political spectrum. Each party name noted in the table is the exact name as listed in the Parlinfo database, and is affiliated with at least one politician in our data.

B Modeling Expected Signal Strength

Our empirical design is based on a comparison of outcomes across local and national television districts. This comparison presents two key empirical challenges. The first empirical challenge arises from the selection into public or private television and the informational content its viewers receive. The second empirical challenge arises from the non-random expansion of the television network: factors that determine the location and timing of television transmitter installations (e.g., population density) may correlate with our political outcomes of interest.

In this appendix, we focus on the second empirical challenge and adopt a solution from Borusyak and Hull (2023) to address the non-random expansion of the television network. The authors show that even if a treatment is conditionally random, it may still be biased if the *timing* of exposure to treatment is non-random. Our solution is to control for a time-varying measure of expected signal strength, which recenters the observed television network around simulated counterfactual networks that might as well have been realized. This yields an unbiased estimator of the expansion of the television network.

Omitted Variable Bias (OVB) Example Toronto and Montreal are the first two cities to receive television because they are the largest markets in the country. Nearby districts then receive television earlier than expected because of their proximity to either city. This suggests that *any* district near an economic or population center of the country is more likely to be treated earlier than a district on the periphery. In this instance, an estimate of our two-way fixed effects model will fail to identify our parameter of interest, unless we make the strong assumption that "central" districts do not differ from "peripheral" districts in any relevant, time-varying way. Such an assumption is equivalent to assuming that districts are homogeneous with respect to political discontent, civic mindedness or any other non-electoral political activity.

Stylized Model Assume model $y_i = \beta x_i + \varepsilon_i$, where the realized treatment, $x_i = f_i(g_s, w_i)$, combines variation in shocks g_s due to installation of television transmitter s with pre-determined variables w_i according to $f(\cdot)$, a known formula to the researcher. Borusyak and Hull (2023) show that (i) if shocks to g are exogenous to ε, given predetermined variables w, and (ii) the conditional distribution $G(g|w)$ is known, then a candidate expected treatment variable can be defined to solve the OVB problem.

Result Expected treatment $\mu_i = E\left[f_i(g_s, w_i)|w_i\right]$ is the sole confounder of the realized treatment, x_i. With this stylized model, we can show this result by looking at the correlation of model residuals with the realized treatment:

$$E\left[\frac{1}{N}\sum_i x_i\varepsilon_i\right] = E\left[\frac{1}{N}\sum_i E\left[f_i(g_s, w_i)\varepsilon_i|w_i\right]\right] \tag{B.1}$$

$$= E\left[\frac{1}{N}\sum_i \mu_i E\left[\varepsilon_i|w_i\right]\right] \tag{B.2}$$

$$= E\left[\frac{1}{N}\sum_i \mu_i\varepsilon_i\right] \tag{B.3}$$

The OVB problem is solved by recentering the treatment variable around its expected treatment, $\tilde{x}_i = x_i - \mu_i$, which is uncorrelated with residuals ε_i by construction. In practice, this equates to adding expected treatment as a control variable to the stylized model, thus providing an unbiased and consistent estimate of β. For our purposes, the realized treatment (x_i) is television signal strength at the electoral district level ($signal_{d,t}$), and the expected treatment (μ_i) is expected signal strength ($\mu_{d,t}$)—i.e., the non-random exposure of a district to realized treatment.

B.1 Criteria for a Valid Measure of Expected Signal Strength

To compute expected treatment, it is necessary to know the underlying data-generating process of our realized treatment. In our setting, function $f(\cdot)$, which combines the pre-determined variables with the underlying distribution of shocks to g, is the Irregular Terrain Model—the radio propagation model we use to estimate the attenuation of signal strength across space (see Section 3 for more details). While the underlying distribution of shocks g is exogenous, it is also unknown and has to be modeled.

Modeling the distribution of these shocks amounts to modeling the timing of activation for the complete network of television transmitters. We do this by assigning every television transmitter a probability of being activated in year t, and construct an average value based on 500 permutations of this process for each year. As this procedure allows us many degrees of freedom, we restrict ourselves to the following criteria:

(1) In each simulation, transmitters with an early realized activation date receive a higher probability of activation than transmitters activated later on.

(2) The measure of expected signal strength that is constructed from the 500 permutations should be correlated with the model residuals, as in equation (B.3). In other words, the residuals from a simple OLS regression,

$$Y_{d,t} = \alpha_d + \alpha_t + \beta signal_{d,t} + \epsilon_{d,t},$$

should be correlated with $\mu_{d,t}$.

(3) Expected signal strength $\mu_{d,t}$ should capture all of the predictive variation of the initial treatment on any observable pre-determinant of treatment (e.g., a district's initial population density in 1931). In other words, the point estimate δ from this example equation,

$$Pop_{d,1931} = \delta signal_{d,1953} + \gamma \mu_{d,1953} + \epsilon_d,$$

should be statistically no different from zero.

B.1.1 Alternative Shock Distributions

In this subsection, we describe 23 shock distributions that satisfy criteria (1) in Section B.1, which we use as alternatives to the shock distribution described in Section 4.2 of the paper. Table B.1 summarizes this information. The first column of the table denotes an identifier for the alternative shock distribution, ranging from 1-23. The activation process involves multiple steps for alternatives 2, 5, 14 and 15, so the second column outlines the order of these steps. The third column defines the modeled probability

Table B.1: Alternative Shock Distributions

Alt.	Step	Probability of Transmitter Activation	Activation Rank	Randomness	Selection Criteria
1		$\Pr = 1 - \frac{Dur.-min(Dur.)}{max(Dur.)-min(Dur.)} + \frac{1}{\#\ towers\ activated_t}$	Months	$g \sim Normal(\Pr, sd(\Pr))$	Highest g
2	i	LPM: $activated_t = f(Population,\ TransmittersActivated)_t$	-	$Active \sim Binomial(1, \hat{activated_t})$	Active = 1
	ii			$g \sim Normal(\hat{activated_t}, sd(\hat{activated_t}))$	Highest g
3		$\Pr = \frac{\#\ towers\ active_t}{\#towers}$	-	$Active \sim Binomial(1, \Pr)$	Active=1
4		$\Pr = 1 - \frac{Dur.-min(Dur.)}{max(Dur.)-min(Dur.)}$	Months	$g \sim Normal(\Pr, sd(\Pr))$	Highest g
5	i	$\Pr = 1 - \frac{Dur.-min(Dur.)}{max(Dur.)-min(Dur.)}$	Months	$Active \sim Binomial(1, \Pr)$	Active = 1
	ii			$g \sim Normal(\Pr, sd(\Pr))$	Highest g
6		$\Pr = 1 - \frac{Year-min(Year)}{max(Year)-min(Year)}$	Years	$g \sim Normal(\Pr, sd(\Pr))$	Highest g
7		$\Pr = \frac{1}{Duration}$	Year	$g \sim Normal(\Pr, sd(\Pr))$	Highest g
8		Lasso: $activated_t = f(Population,\ TransmittersActivated,\ Lat,\ Lon)_t$	-	$g \sim Normal(\hat{activated_t}, sd(\hat{activated_t}))$	Highest g
9		Lasso: $activated_t = f(Population,\ TransmittersActivated,\ Lat,\ Lon)_t$	-	$activated_t \sim Binomial(1, \hat{activated_t})$	Active = 1
10		$\Pr = 1 - \frac{Dur.-min(Dur.)}{max(Dur.)-min(Dur.)}$	Months	$g \sim Normal(\Pr, 2 * sd(\Pr))$	Highest g
11		$\Pr = \frac{\#\ towers\ active_t}{\#towers}$	-	$g \sim Normal(\Pr, 1)$	Highest g
12		$\Pr = 1 - \frac{Year-min(Year)}{max(Year)-min(Year)} + \frac{1}{\#\ towers\ activated_t}$	Years	$g \sim Normal(\Pr, sd(\Pr))$	Highest g
13		$\Pr = 1 - \frac{Dist(Toronto)-min(Dist(Toronto))}{max(Dist(Toronto))-min(Dist(Toronto))}$	Distance	$g \sim Normal(\Pr, sd(\Pr))$	Highest g
14	i	$\Pr = 1 - \frac{Dist(Toronto)-min(Dist(Toronto))}{max(Dist(Toronto))-min(Dist(Toronto))}$	Distance	$activated_t \sim Binomial(1, \Pr)$	Active = 1
	ii	$\Pr = 1 - \frac{Dur.-min(Dur.)}{max(Dur.)-min(Dur.)}$	Months	$g \sim Normal(\Pr, sd(\Pr))$	Highest g
15	i	$\Pr = 1 - \frac{Dist(Toronto)-min(Dist(Toronto))}{max(Dist(Toronto))-min(Dist(Toronto))}$	Distance	$g \sim Normal(\Pr, sd(\Pr))$	
	ii	$\Pr = 1 - \frac{Dur.-min(Dur.)}{max(Dur.)-min(Dur.)}$	Months	$g \sim Normal(\Pr, sd(\Pr))$	
	iii			randomly select step i) or ii)	Highest g
16		$\Pr = 1 - \frac{Pop.-min(Pop.)}{max(Pop.)-min(Pop.)}$	Population	$g \sim Normal(\Pr, sd(\Pr))$	Highest g
17		$\Pr = 1 - \frac{Rank(Pop.)-min(Rank(Pop.))}{max(Rank(Pop.))-min(Rank(Pop.))}$	Ranked Population	$g \sim Normal(\Pr, sd(\Pr))$	Highest g
18		$\Pr = \frac{1}{Rank(Pop.)}$	Ranked Population	$g \sim Normal(\Pr, sd(\Pr))$	Highest g
19		$\Pr = 1 - \frac{Dur.-min(Dur.)}{max(Dur.)-min(Dur.)}$	Months	$g \sim Normal(\Pr, sd(\sqrt{\Pr}))$	Highest g
20		$\Pr = 1 - \frac{Dur.-min(Dur.)}{max(Dur.)-min(Dur.)}$	Months	$g \sim Normal(\Pr, sd(\Pr^2))$	Highest g
21		$\Pr = \left(1 - \frac{Dur.-min(Dur.)}{max(Dur.)-min(Dur.)}\right) \times \left(1 - \frac{1}{\#\ towers\ activated_t}\right)$	Months	$g \sim Normal(\Pr, sd(\Pr)$	Highest g
22		-	Years	$g \sim Normal\left(Year, 1 - \frac{1}{\#\ towers\ activated_t}\right)$	Highest g
23		$\Pr = 1 - \frac{Dur.-min(Dur.)}{max(Dur.)-min(Dur.)} + \frac{1}{\#\ towers\ activated_t}$	Months	$g \sim Normal(\Pr, sd(\Pr))$	Highest g w/ no overlap

that transmitter j is activated in year t, with each being an alternative to the assumed probability in equation (2) from Section 4.2 of the paper. The fourth column describes how we rank the activation of the transmitters in our data—e.g., we take the approach of ranking transmitters by year of activation in Section 4.2. The fifth column describes how we transform each probability into a shock. Here, we either draw shocks from a normal or binomial distribution, using the probabilities calculated in the third column. The final column defines how we select the s number of transmitters active in year t. The "Highest g" criteria indicates that we sort across shock realizations g, selecting the s highest realizations until s is equal to the number of transmitters active in year t. "Active = 1" denotes that we simply select which ever transmitter has a shock realization of one. If there is a multi-step approach we first apply the selection method in step i), then step ii), and so forth.

As an example, consider the sampling probability for the Toronto and Montreal transmitters, based on alternative 1. Here, we rank the activation of transmitters by months, for our complete set of installations that ranges over 204 months. The Toronto and Montreal transmitters were both installed in September 1952—the first two transmitters built. Based on the formula for alternative 1, we assign the probability of activating either transmitter as $\Pr = 1 - \frac{0-0}{204-0} + 1/2 = 1.5$, where both the duration and minimum duration are 0, while the maximum duration is 204 for our sample of transmitters. Only two transmitters were activated in 1952, so $s = 2$ here. We truncate probabilities to one for any value greater than one. Here, we assume a random shock according to the distribution $g \sim Normal(\text{Pr}, sd(\text{Pr}))$, which guarantees a non-deterministic distribution of active transmitters in each permutation. We repeat this randomization process 500 times for every post-treatment year of our sample—i.e., separately for 1952, 1953, 1954, 1955, 1956, 1957, and 1958. We derive our final measure of expected signal strength by averaging across all permutations at the census subdivision (CSD) level, exactly as described in Section 3, and use CSD-level population data as weights to aggregate from CSDs to electoral districts. The result is $\mu^A_{d,t}$, an average measure of expected signal strength for district d in year t, based on alternative A.

In most alternatives, we model the probability of a transmitter being activated as a concave function of duration (alt 1), years (alt 6), distance (alt 13), or population, although we depart from this functional form in some specifications. In alternative 3 and 11, we assign every transmitter the same probability of being activated, calculated as a fraction of transmitters activated in year t. In alternative 2, we use a linear probability model to obtain predicted values of the probability of activation. In alternatives 8 and 9, we use a lasso model selection algorithm. To increase concavity and assign transmitters activated late a low probability, we calculate the probability as $^1/_{\text{Duration since first opened}}$ in alternative 7, $^1/_{\text{Population rank}}$ in alternative 17, and take the squared probability as an input in alternative 20. We do the opposite and decrease concavity, and assign later opened transmitters a higher probability in alternative 19, where we take the square-root of the calculated probability. In alternative 23, we model the same underlying probability as in alternative 1, but require that no selected television transmitter serves the same market. That is, if a transmitter with the third highest shock value serves a market that is already served by the transmitter with the second highest shock value, we skip this tower and proceed to the next highest shock value until the number of selected transmitters equals the true number in year t.

B.1.2 Evaluating the Alternative Shock Distributions

In this subsection, we evaluate the 23 alternative shock methods based on criteria (2) and (3), as described in Section B.1. We also evaluate free-space signal strength and our main measure of expected signal strength used throughout the main body of the paper, based on these two criteria. Alternatives ($\mu^A_{d,t}$) that satisfy *both* criteria are then used in place of $\mu_{d,t}$ in our main equation (3) to obtain unbiased estimates of our treatment effect (β). Finally, we use the set of alternatives that satisfy both criteria to assess the stability of our estimated treatment effect, and obtain an upper and lower bound on television's impact on voter turnout based on these valid alternatives.

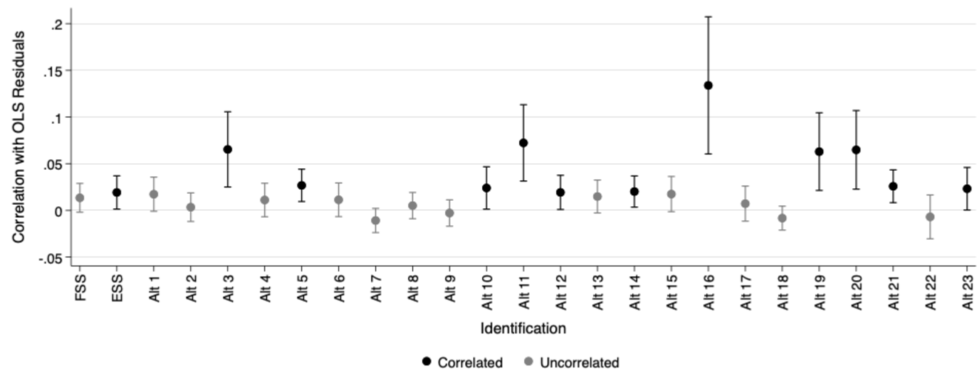
Criteria 2: Correlation of Expected Signal Strength with Residuals We begin by assessing which alternative measures of expected signal strength are correlated with the residuals from the following OLS regression:

$$Y_{d,t} = \alpha_d + \alpha_t + \beta\, signal_{d,t} + \epsilon_{d,t}.$$

For each alternative measure A, we regress these residuals on the corresponding expected signal strength:

$$\hat{\epsilon}_{d,t} = \alpha_d + \alpha_t + \eta^A \mu^A_{d,t} + \nu_{d,t},$$

Figure B.1: Correlation of Expected Signal Strength with Residuals



Notes: This figure reports regression estimates of the residuals from the simple OLS on the free-space method (FSS), our expected signal strength in the paper (ESS), and the 23 alternatives from Table B.1. Colors denote whether the point estimate is significantly different from zero at the 5% level.

and plot the resulting estimates $\hat{\eta}^A$ in Figure B.1.

We first show that free-space signal strength (FSS) is uncorrelated with the residuals from the OLS regression, and thus fails to meet criterion (2). By contrast, our main measure of expected signal strength (ESS) is correlated with these residuals and satisfies the necessary criterion. Furthermore, 11 of the alternative measures satisfy criterion (2) at the 5 percent level, as indicated by the black-coded point estimates in Figure B.1. The estimated correlation is particularly large for alternative 16, where the probability of tower activation depends solely on population. The channel here is clear: actual signal strength is highly correlated with population density because transmitters were strategically located near large population centers. It is therefore possible to construct an expected signal network that explicitly models population density and is, by design, correlated with the residuals.

Criteria 3: Correlation of Signal Strength with Population Density Next, we test which alternative measures of expected signal strength satisfy the conditional exogeneity of actual signal strength with respect to initial population density—a primary determinant of the timing of treatment (Figure 1). In Figure B.2, we plot the point estimates β^A from the regression:

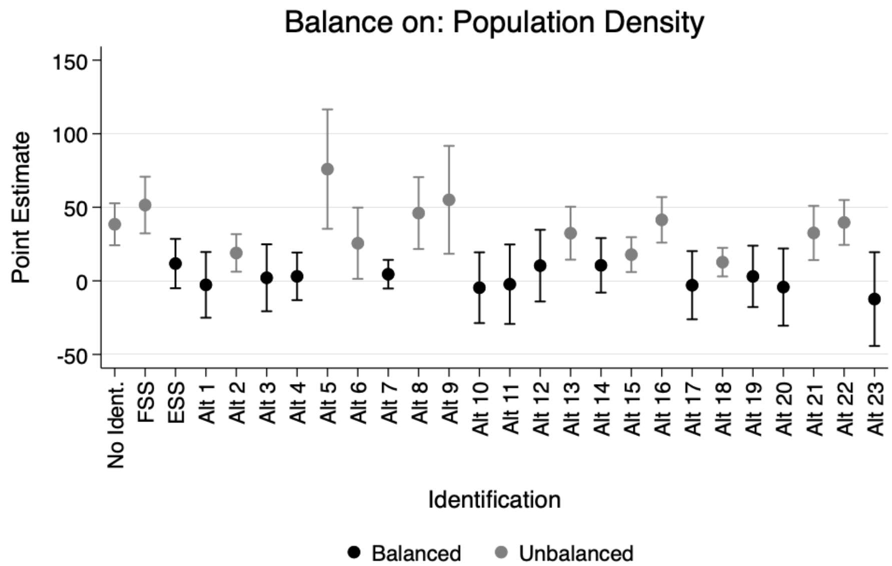
$$Pop_{d,1931} = \beta^A signal_{d,1953} + \eta^A \mu^A_{d,1953} + \epsilon_d.$$

By design, this specification is a test of whether recentering a regression estimate of *actual* signal strength around an expected signal strength alternative A balances our sample in the cross-section.

We begin by noting that neither the two-way fixed effect (no-ident) specification nor the free-space control variable (FSS) balance our treatment design, yet our main measure of expected signal strength (ESS) does. Moreover, 12 of the proposed alternatives balance population density at the 5 percent level and thus satisfy criteria (3), as indicated by the point estimates color-coded black in Figure B.2.

Stability of the Treatment Effect Here, we use the set of alternatives that satisfy both criteria to assess the stability of our estimated treatment effect, and obtain an upper and lower bound on television's

Figure B.2: Correlation of Signal Strength with Population Density in 1931



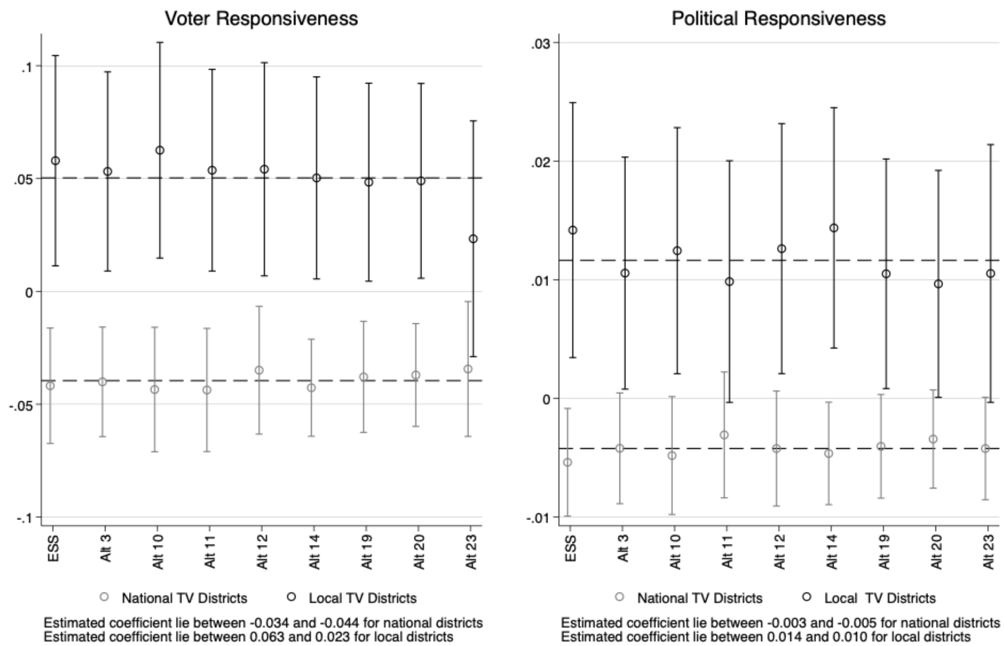
Notes: This figure reports regression estimates from the regression $Pop_{d,1931} = \beta^A signal_{d,1953} + \eta^A \mu^A_{d,1953} + \epsilon_d$, using the 23 alternatives from Table B.1. Colors denote whether the point estimate is not statistically different from zero at the 5% level.

impact on voter and political responsiveness, based on these valid alternatives. In particular, alternatives 3, 10, 11, 12, 14, 19, 20, 23 satisfy criteria (2) and (3) from Section B.1, and thus yield unbiased and consistent estimates of our treatment effect. Moreover, all point estimates for the private (local) television interaction term are significantly different from their public television counterparts.

The point estimates in both panels of Figure B.3 are remarkably stable and show a clear difference between private and public stations, despite the assumed differences in the modeled shock distribution. For example, at baseline we model the shock distribution of expected signal strength as a concave function of a transmitter's duration, and similarly do so for alternatives 12, 19 and 20. Whereas alternative 14 is modeled as a function of distance to Toronto, and alternatives 3 and 11 are simply random. Plugging these probabilities into a normal or binomial distribution similarly does not alter the point estimate. For voter responsiveness, estimates of β consistently lie within the interval $[-0.044, -0.034]$ and are significantly different from β^{Loc} in each instance, which is consistently estimated to lie within the interval $[0.023, 0.063]$. A similar pattern holds for political responsiveness.

Concluding Remarks We believe that the evidence in this section provides (i) strong support for our research design and (ii) a clear indication that our estimates are not sensitive to changes in modeling signal strength. We adopt the approach of Borusyak and Hull (2023) in our own context, laying out a set of criteria that a candidate measure of expected signal strength must satisfy for a valid research design. We show that our preferred measure of expected signal strength not only satisfies these criteria, but that many of the alternatives do as well. Importantly, we benchmark our preferred measure against all the alternative measures that satisfy these criteria, and show that the estimated treatment effect that each alternative yields is remarkably similar to our preferred measure. This body of evidence, and the

Figure B.3: Identified β and β^{Loc} on Signal Strength



Notes: This figure reports regression estimates from our baseline regression, based on the alternatives shock distributions described in Table B.1. We benchmark these estimates against ESS, our main measure of expected signal strength. The left panel plots the 8 alternatives that satisfy the necessary criteria (2) and (3), as described in Section B.1. The dashed line indicates the average point estimate across these specified alternatives.

absence of pre-trends that we document in Appendix C, provide strong support for our research design.

C Alternative Event-Study Designs and Parallel Trends

Our main estimating equation (3) is a two-way fixed effects model with an interaction term for the local television treatment of interest. In Appendix B, we document how the estimated treatment effect is conditionally random, after adjusting an estimate for its expected treatment effect. Yet the timing of this treatment varies across electoral districts, which could affect the interpretation of our coefficient of interest—most notably in terms of treatment effect heterogeneity, and whether the parallel trends assumption holds.[23]

Our coefficient of interest (β^{loc}) captures the effect of receiving local television relative to national television, conditional on receiving any television. Documenting parallel trends of this interaction term is not straightforward. First, a comparison between "ever local" and "never local" districts fails to account for the *conditional on receiving television* aspect of our identifying assumption. Second, a comparison between "ever local" and "ever television" fails to account for the time dimension of our panel. Instead, our identifying assumption requires that we compare the local television treatment to the national television treatment in the same election year. Thus, without an established rule on how to construct an event-study graph with an interaction model like ours, we proceed by comparing local television districts to national television districts in the same "lag," relative to all district values prior to receiving television.

Figure C.1 plots this event study, where the overall negative engagement effects of television are driven by the national content of the public broadcaster, with a significantly different and positive impact of local content in private television districts. Importantly, the figure provides evidence of parallel trends in a context that mirrors our main estimating equation.

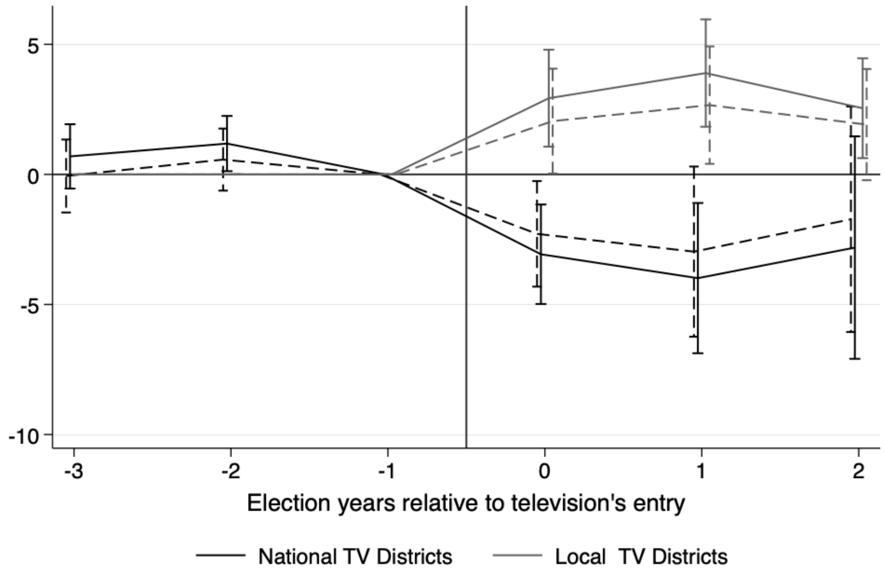
In what follows, we focus on the *average* effect of Canadian television on voter responsiveness, which we relate to a well-established set of findings that emphasize the negative impact of television on voter responsiveness in the United States (Gentzkow, 2006) and elsewhere (Ellingsen and Hernæs, 2018; Campante et al., 2022, among others). We find that the negative engagement effects of television can be replicated in the Canadian context and is robust to alternative event-study methodologies proposed by Goodman-Bacon (2021) and Sun and Abraham (2021)—both of which account for treatment effect heterogeneity. The empirical findings also conform with our expectations: the expansion and adoption of television was almost immediate in Canada, as discussed in Section 2, and so there is little reason to believe that our treatment effect should be growing over time. Somewhere between 75 percent Peers (1979) and 90 percent (Cole, 2002) of Canadians had access to television by our second observed treatment period—the 1957 federal election. Nevertheless, we proceed to show that the assumptions of parallel trends and homogeneous treatment effects hold in our context.[24]

Motivating Evidence of Parallel Trends We plot our main event study in Panel (a) of Figure C.2. Here, we rely on a standard trimmed event-study plot, without and with covariates. In Panel (b), we reproduce

[23]These concerns reflect the burgeoning literature on the interpretability of two-way fixed effects models and event-study designs. The main insights that we have in mind here come from De Chaisemartin and D'Haultfœuille (2020); Goodman-Bacon (2021); Sun and Abraham (2021); Borusyak et al. (2024) and more.

[24]Throughout this section, we discretize our treatment variable to equal one for signal strength values greater than 50 dbμV/m.

Figure C.1: Event-Study Plot



Notes: Event study of model (3) with election-year t-1 as the omitted year, based on a panel of electoral districts across election-years (1935-1958). Treatment is a discrete variable equal to one if television signal strength is greater than 50 dbμV/m. The outcome is *Voter Responsiveness*—the total votes cast relative to the size of the electorate, or voter turnout. Dashed lines reflect estimates conditional on model covariates. Covariates include pre-treatment measures of population density, earnings, age, literacy and urbanization, all interacted with election-year fixed effects. Intervals reflect 95% confidence.

this plot but add the never-treated from the trimmed sample as a comparison group in the last period before treatment.

The inclusion of the never-treated serves two purposes. First, it enables more efficient estimation of the leads and lags by reducing the size of our estimated standard errors. Second, it alters the composition of the control groups and thus allows us to gauge the effect of different treatment-control comparisons. While panel (a) only compares early- to late-treated districts, the right panel adds the comparison of early-control and late-control. If the inclusion of the never-treated significantly changes either the leads or lags, then it would provide evidence of treatment effect heterogeneity across groups (Sun and Abraham, 2021). The absence of any meaningful change in estimates across panel (a) and (b) provides evidence in favor our empirical design.

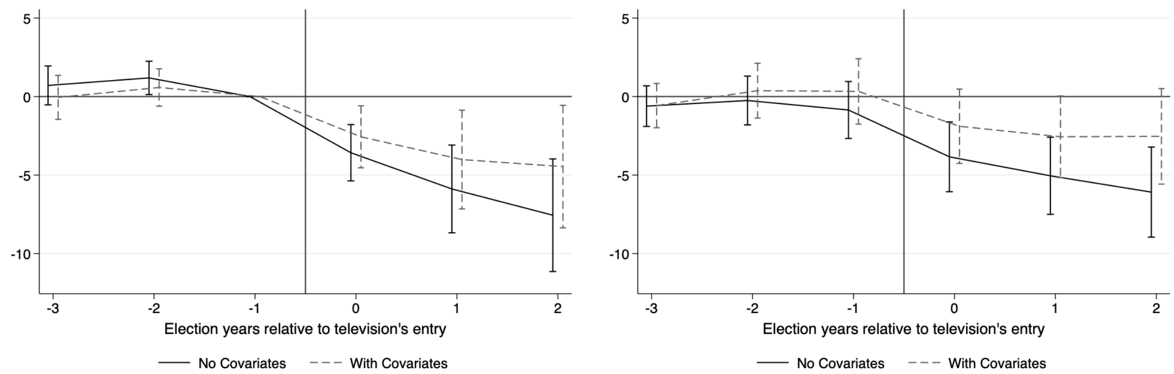
C.1 Decomposition of Treatment Cohorts

Our panel of electoral districts includes three potential treatment cohorts, based on the timing of Canadian federal elections: 1953, 1957 or 1958. This implies districts receive treatment at different times and that the same district may serve as a control district and a treated district in our difference-in-differences framework, depending on the timing of treatment. Recent research shows that, in a similar framework to ours, the staggered introduction of treatment can put negative weights on cohort treatment effects (De Chaisemartin and D'Haultfœuille, 2020; Borusyak et al., 2024). In principle, this could switch the sign of the estimate if the treatment effect grows over time (Goodman-Bacon, 2021).

We thus proceed by decomposing our estimate into cohort treatment effects, as suggested by Goodman-

Figure C.2: Event-Study Plots

(a) Without never-treated **(b)** Including never-treated



Notes: Event study estimates based on a panel of electoral districts across election-years (1935-1958). Treatment is a discrete variable equal to one if television signal strength is greater than 50 dbμV/m. The outcome is *Voter Responsiveness*—the total votes cast relative to the size of the electorate, or voter turnout. Panel (a) excludes electoral districts that never receive television in our sample, while Panel (b) includes them at period $t-1$. Both figures provide evidence in favor of parallel trends and support our research design. Covariates include pre-treatment measures of population density, earnings, age, literacy and urbanization, all interacted with election-year fixed effects. Intervals reflect 95% confidence.

Bacon (2021), to assess the weights associated with each treatment comparison. Panel (a) of Figure C.3 plots our findings from this decomposition, where we color-code cohort treatment effects relative to never-treated districts in grey, and early-treated versus late-treated cohort comparisons in black. The dashed horizontal line represents the average treatment effect on the treated (-2.046, s.e. 0.537), which we estimate using the Goodman-Bacon (2021) decomposition.

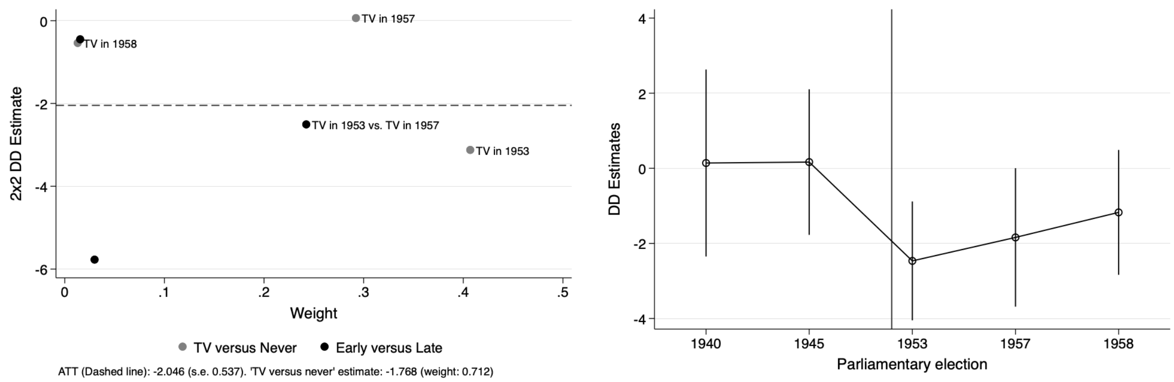
The largest weights are for the 1953 cohort—the earliest treatment cohort. We estimate a treatment effect of -3.122 for the 1953 cohort relative to the never-treated, and -2.510 relative to the 1957 cohort—the second treatment cohort. In total, these two treatment effects make up 65 percent of the variation in the average treatment on the treated. If we abstract from early-late comparisons and focus only on comparison of the treated versus never-treated, we find a slightly smaller coefficient of -1.768. In this instance, the 1953 cohort weights make up 71 percent of estimated treatment effect alone, indicating a valid research design.

In Panel (b) of Figure C.3, we make a similar point in a different way. We abstract from multiple treatment periods—focusing on the 1953 treatment cohort—in a simple difference-in-differences setting, where we document near-perfect evidence of parallel trends prior to television's arrival, and a dynamic effect similar to our event-study estimates in Figure C.2.

Next, we compare Sun and Abraham's (2021) interaction weighted (IW) estimator to our traditional trimming estimator without and with our baseline set of covariates. The IW estimator accounts for treatment effect heterogeneity by weighting treatment cohort effects by their sample shares. Thus, comparing these estimates to the traditional trimming estimator allows us to draw inference about treatment effect homogeneity (Sun and Abraham, 2021, Proposition 4, Equation 19). Figure C.4 plots an event study, and includes estimates from (i) Sun and Abraham's (2021) IW estimator, (ii) a trimming estimator without covariates and (iii) a trimming estimator with covariates. All three estimators produce no evidence of a concerning pre-trend, suggesting that in terms of our outcome—voter turnout—electoral districts ex-

Figure C.3: Goodman-Bacon Decomposition

(a) Decomposition **(b)** Pre-trends for 1953 treatment cohort



Notes: Treatment is a discrete variable equal to one if television signal strength is greater than 50 dbμV/m. The outcome is *Voter Responsiveness*—the total votes cast relative to the size of the electorate, or voter turnout. Panel (a) subfigure reports the Goodman-Bacon (2021) decomposition weights and point estimates associated to the three treatment groups 1953, 1957, and 1958. Panel (b) figure plots the leads and lags for the 1953 treatment cohort compared to the never treated units. The dashed horizontal line represents the average treatment effect on the treated (-2.046, s.e. 0.537), which we estimate using the Goodman-Bacon (2021) decomposition. Covariates include pre-treatment measures of population density, earnings, age, literacy and urbanization, all interacted with election-year fixed effects. Intervals reflect 95% confidence.

hibit parallel trends prior to treatment. All estimators also estimate the same immediate treatment effect when television is introduced (period 0). This is especially true when comparing the IW estimator to the trimming estimator with controls, where we observe almost no difference in treatment effects over time.

In summary, we believe that our research design is valid. The IW estimator provides no evidence of treatment effect heterogeneity across time, and the weighted average of cohort treatment effects that we estimate at baseline is largely derived from the early adopters of television. Negative weights are also unlikely to affect our estimator for two reasons: the rapid expansion and uptake of television suggests there is little reason to believe that our treatment effect should be growing over time, and this intuition is validated by the decomposition of our estimate into weights, where our treatment effect is mainly derived from a clean comparison of the treated to the never-treated cohort (Goodman-Bacon, 2021).

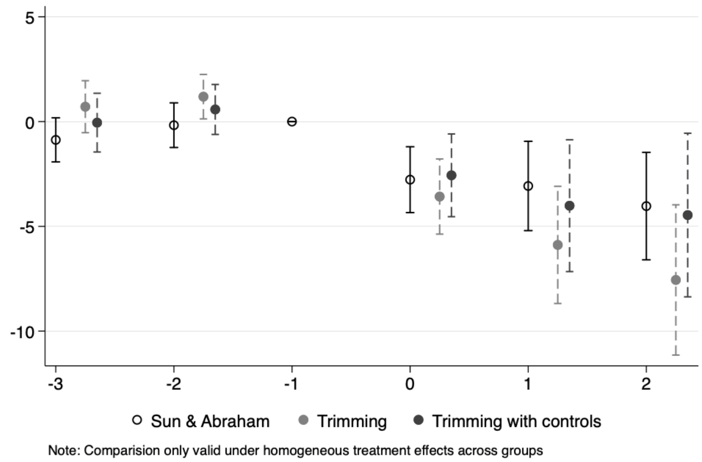
C.2 Extended Panel Event-Study Design

Our sample period is defined by the single-station policy that remained in effect between 1952-1958, with federal elections—and thus treatment cohorts—occurring in 1953, 1957 and 1958.[25] At the time of the 1953 election, 98 out of 263 electoral districts receive treatment (i.e., television). By the 1957 election, 83 additional districts are treated and finally 6 more in 1958. Yet, the need to truncate the data in 1958 implies that the last lag of our event-study specification is only estimated from the first 98 electoral districts.

In this section, we extend our panel to 1968, which includes four additional election years: 1962, 1963, 1965 and 1968. We fix each district to its 1958 treatment status, thus allowing us to observe *all* cohorts for three lags after treatment—something that is not possible for the 1957 and 1958 treatment cohorts in our baseline sample. We can thus increase the precision of our estimates with this sample extension.

[25] Refer to Section 2 for details of the policy.

Figure C.4: Event Study with Sun and Abraham's (2021) IW Estimator



Notes: Sun and Abraham's (2021) interaction weighted (IW) estimator, based on a panel of electoral districts across election-years (1935-1958). Treatment is a discrete variable equal to one if television signal strength is greater than 50 dbμV/m. The outcome is *Voter Responsiveness*—the total votes cast relative to the size of the electorate, or voter turnout. The plot is a comparison of the trimming estimator without and with our baseline set of covariates. Covariates include pre-treatment measures of population density, earnings, age, literacy and urbanization, all interacted with election-year fixed effects. Intervals reflect 95% confidence.

Panel (a) of Figure C.5 plots an event study for this extended panel with added precision in the pre- and post-period estimates, relative to Figure C.2. In panel (b), we again observe no differential pre-trends prior to treatment and a significant post-treatment fall in voter turnout after the arrival of television.

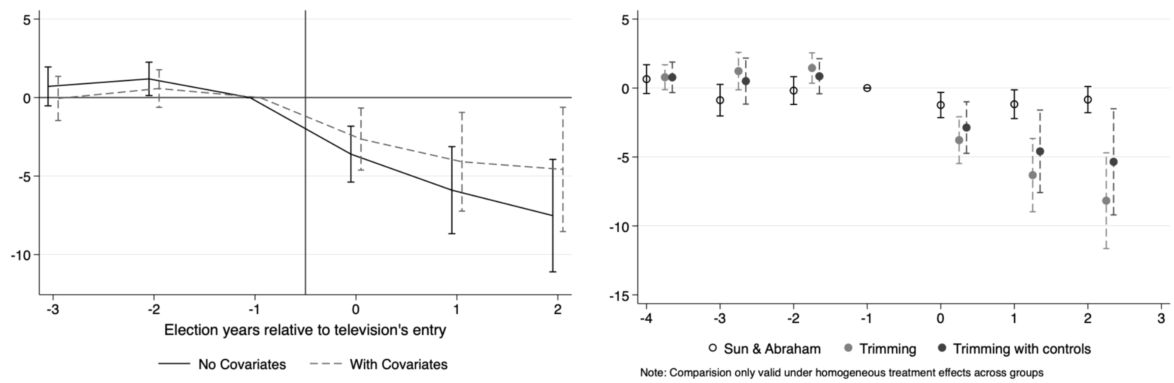
The extended panel also allows us to trace the effects of the single-station policy to later elections. Here, we consider two alternative but related estimation strategies: (i) hold the 1958 treatment status fixed ("single-station policy treatment") and (ii) use the complete set of treatments after 1958, despite the fact that any subsequent transmitter installations were the by-product of endogenous market forces between 1959-1968. In Panel (a) of Figure C.6, we compare strategies (i) to (ii), noting that when including the full set of treatments in (ii), the point estimates remain remarkably stable over time within a range of -0.037 and -0.030, and are precisely estimated. This result suggests that the single-station policy continued to affect turnout in later elections in a similar way. Moreover, the fraction of never-treated observations decrease to only 12 percent in (ii), as a significant fraction of the never-treated in (i) become not-yet-treated observations instead. Altogether, this provides evidence against heterogeneous treatment effects across cohorts.

Finally, in panel (b) of Figure C.6, we report the point estimates separately by public and private television to test whether a crowding out is indeed affecting the estimates in Figure C.6. Again, the point estimates of the single-station policy is lower, yet remain significant over time. Especially the impact of private TV remains stable in a range 0.040-0.046.

Concluding Remarks The evidence we present in this section supports the necessary assumptions of our research design, including an absence of differential trends and heterogeneous treatment effects. We also believe that our ability to replicate the negative engagement effects of television that have been documented elsewhere is further validation of our empirical design in the Canadian context.

Figure C.5: Extended Panel Analysis

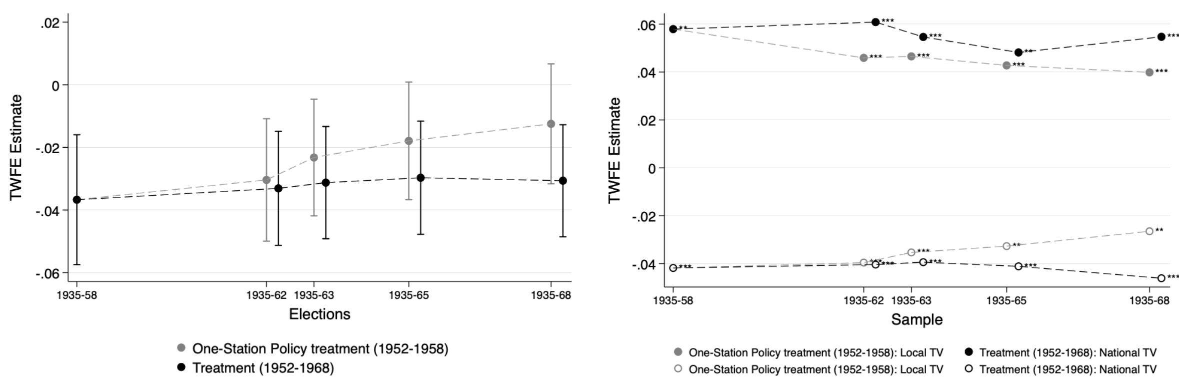
(a) Baseline Event-Study Design **(b)** Sun and Abraham's (2021) IW-Estimator Design



Notes: Sun and Abraham's (2021) interaction weighted (IW) estimator, based on a panel of electoral districts across election-years (1935-1968). Treatment is a discrete variable equal to one if television signal strength is greater than 50 dbμV/m. The outcome is *Voter Responsiveness*—the total votes cast relative to the size of the electorate, or voter turnout. Panel (a) is a replication of the baseline event study estimator. Panel (b) plots a comparison of the trimming estimator without and with our baseline set of covariates. Importantly, we fix treatment according to the 1958 treatment status, but estimate the reported effects from the extended 1935-1968 panel, thus allowing us to observe three periods before and after treatment for the later treatment cohorts. Covariates include pre-treatment measures of population density, earnings, age, literacy and urbanization, all interacted with election-year fixed effects. Intervals reflect 95% confidence.

Figure C.6: Coefficients in the extended panel

(a) Television Treatment **(b)** Public v Private Television Treatment



Notes: Equation (3) estimates, based on a panel of electoral districts across election-years (panel years noted in figure). Treatment is a discrete variable equal to one if television signal strength is greater than 50 dbμV/m. The outcome is *Voter Responsiveness*—the total votes cast relative to the size of the electorate, or voter turnout. Panel (a) reports estimates from our main specification with covariates, based on the two alternative estimation strategies. Panel (b) plots the equivalent estimates for national (public) television and local (private) television. Covariates include pre-treatment measures of population density, earnings, age, literacy and urbanization, all interacted with election-year fixed effects. Intervals reflect 95% confidence.

D Data Description and Sources

Federal Electoral District Maps: We digitized federal electoral district (FED) maps for all years relevant to our extended sample period, 1935-1968. Over this sample period, FED boundaries were redrawn three times, so we collected and digitized the following set of FED boundaries:

- The Representation Order of 1933-1947
- The Representation Order of 1947-1952
- The Representation Order of 1952-1966
- The Representation Order of 1966-1976

For each Representation Order, we digitize FED boundaries from scanned maps using ArcGIS. We crosswalk these maps using the procedure outlined in Eckert et al. (2020), thus giving us a consistent spatial unit of observation for the sample period. We use the 1952 distribution as our "reference map" because this is the same year television arrives, and all other distributions as our "reporting maps," which we re-aggregate to the reference map.
Source: Scanned maps of the 1933 Representation Order were acquired from two sources, the University of Toronto's *Map and Data Library* and the University of Alberta's *Digital Repository and Data Services*. Scanned maps of the 1947 Representation Order are from Western University's *Map and Data Centre* as well as University of Alberta's *Digital Repository and Data Services*. Scanned maps for both the 1952 and 1966 Representation Orders were acquired directly from *Library and Archives Canada*.

Television Signal Strength: We require a variety of information on television transmitters before we can estimate signal strength. In addition to the installation date of a transmitter, we require information on the height and service power of each transmitter, as well as their latitude and longitude coordinates. We piece these data together from three archival documents located at *Library and Archives Canada*.

1. *List of Television Stations in Canada*: This set of records was produced by the Stations Relations division of the CBC and is the starting point of our data. It documents basic information about every television transmitter installed between 1952-1969, including station call signs, public or private ownership, service power of the transmitter and its opening date, among other details. This gives us information on all 323 transmitters and rebroadcasters installed by 1969.

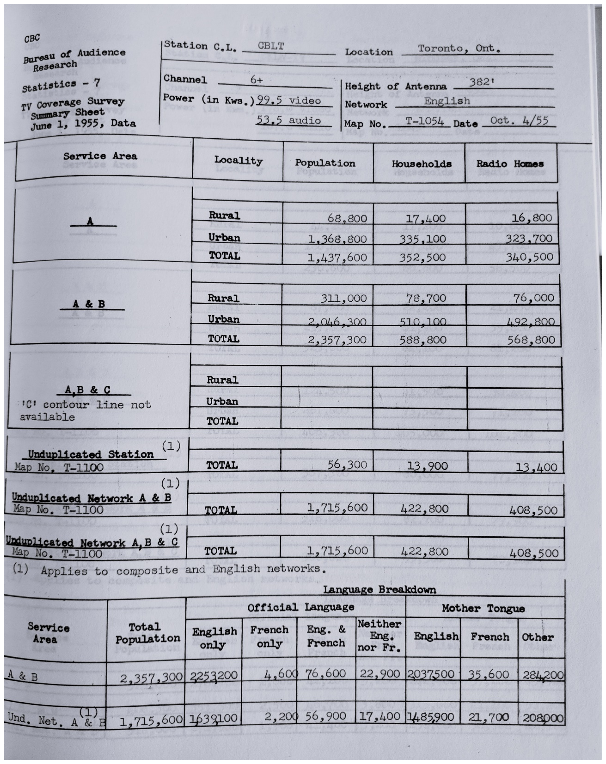
2. *Television Coverage in Canada*: This set of records was produced by the Statistics Division of the Bureau of Audience Research at the CBC, and includes additional details for television transmitters, including antenna height, channel number and network information. Panel (a) of Figure D.1 provides an example from this set of records for CBLT Toronto.

3. *List of Broadcasting Stations in Canada*: This set of records was produced by the Canadian Radio-Television Commission, and includes information on latitude and longitude coordinates for radio broadcast stations, among other details. Especially in the early days of television, radio and television signals were broadcast from the same transmitters, allowing us to deduce the location coordinates for each television station. Panel (b) of Figure D.1 provides an example from this set of

records, where CBC station CBL (radio) was broadcast from the same transmitter as CBC station CBLT (television).

Figure D.1: Example Archival Records

(a) CBLT Transmitter Details



CBC
Bureau of Audience Research
Statistics - 7
TV Coverage Survey Summary Sheet
June 1, 1955, Data

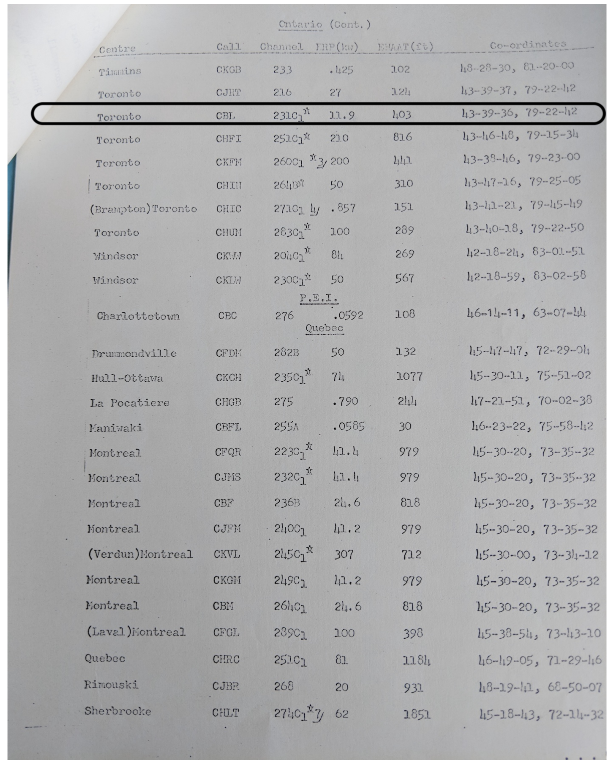
Station C.L. CBLT Location Toronto, Ont.
Channel 6+ Height of Antenna 382'
Power (in Kws.) 99.5 video Network English
53.5 audio Map No. T-1054 Date Oct. 4/55

Service Area	Locality	Population	Households	Radio Homes
A	Rural	68,800	17,400	16,800
	Urban	1,368,800	335,100	323,700
	TOTAL	1,437,600	352,500	340,500
A & B	Rural	311,000	78,700	76,000
	Urban	2,046,300	510,100	492,800
	TOTAL	2,357,300	588,800	568,800
A,B & C 'C' contour line not available	Rural			
	Urban			
	TOTAL			
Unduplicated Station (1) Map No. T-1100	TOTAL	56,300	13,900	13,400
Unduplicated Network A & B (1) Map No. T-1100	TOTAL	1,715,600	422,800	408,500
Unduplicated Network A,B & C (1) Map No. T-1100	TOTAL	1,715,600	422,800	408,500

(1) Applies to composite and English networks.

		Language Breakdown						
		Official Language				Mother Tongue		
Service Area	Total Population	English only	French only	Eng. & French	Neither Eng. nor Fr.	English	French	Other
A & B	2,357,300	2253200	4,600	76,600	22,900	2037500	35,600	284200
Und. Net. A & B (1)	1,715,600	1639100	2,200	56,900	17,400	1485900	21,700	208000

(b) CBLT Transmitter Location



Ontario (Cont.)

Centre	Call	Channel	ERP(kw)	EHAAT(ft)	Co-ordinates
Timmins	CKGB	233	.425	102	48-28-30, 81-20-00
Toronto	CJRT	216	27	124	43-39-37, 79-22-42
Toronto	CBL	231C1*	11.9	403	43-39-36, 79-22-42
Toronto	CHFI	251C1*	210	816	43-46-48, 79-15-34
Toronto	CKFM	260C1 *3/	200	441	43-38-46, 79-23-00
Toronto	CHIN	264B*	50	310	43-47-16, 79-25-05
(Brampton)Toronto	CHIC	271C1 4/	.857	151	43-41-21, 79-45-49
Toronto	CHUM	283C1*	100	289	43-40-18, 79-22-50
Windsor	CKWW	204C1*	84	269	42-18-24, 83-01-51
Windsor	CKLW	230C1*	50	567	42-18-59, 83-02-58
P.E.I.					
Charlottetown	CBC	276	.0592	108	46-14-11, 63-07-44
Quebec					
Drummondville	CFDM	282B	50	132	45-47-47, 72-29-04
Hull-Ottawa	CKCH	235C1*	74	1077	45-30-11, 75-51-02
La Pocatiere	CHGB	275	.790	244	47-21-51, 70-02-38
Maniwaki	CBFL	255A	.0585	30	46-23-22, 75-58-42
Montreal	CFQR	223C1*	41.4	979	45-30-20, 73-35-32
Montreal	CJMS	232C1*	41.4	979	45-30-20, 73-35-32
Montreal	CBF	236B	24.6	818	45-30-20, 73-35-32
Montreal	CJFM	240C1	41.2	979	45-30-20, 73-35-32
(Verdun)Montreal	CKVL	245C1*	307	712	45-30-00, 73-34-12
Montreal	CKGM	249C1	41.2	979	45-30-20, 73-35-32
Montreal	CBM	264C1	24.6	818	45-30-20, 73-35-32
(Laval)Montreal	CFGL	289C1	100	398	45-38-54, 73-43-10
Quebec	CHRC	251C1	81	1184	46-49-05, 71-29-46
Rimouski	CJBR	268	20	931	48-19-41, 68-50-07
Sherbrooke	CHLT	274C1*7/	62	1851	45-18-43, 72-14-32

Notes: These example documents provide insight into how we piece together the necessary information for each television station in our data. Panel (a) includes information for CBLT Toronto, including the service power, antenna height and more. Panel (b) includes information about CBL—the radio station affiliate of CBLT—with latitude and longitude coordinates for the transmitter that broadcast CBL's radio signal and CBLT's television signal. Together with the *List of Television Stations in Canada* document, these two documents provide the information needed to estimate signal strength with the Irregular Terrain Model.

We use the Irregular Terrain Model (ITM) to estimate the attenuation of signal strength across space, based on the timing and location of television transmitter installation. The ITM approach takes into account the elevation profile between a transmitter and its surrounding region, adjusting estimates for any topographic interruption of a signal. Television signal strength is thus an outcome of a transmitter's features, net of topographic interruptions. We use CloudRF to make these ITM estimates, a cloud-based service for modeling signal propagation across space.

Our extended sample runs until 1968, which includes the following election years after television's arrival: 1953, 1957, 1958, 1962, 1963, 1965 and 1968. Based on our ITM estimates and the timing of a transmitter's installation, we can determine the spatial coverage of television signal strength in any given election year. We map these data onto electoral districts using the digitized maps described above to construct an average measure of district signal strength.

Source: The *List of Television Stations in Canada* is available from the *Library and Archives Canada* as a standalone file, with reference number RG41-B-II-2, Volume number: 590, File number: 236, File part: 1. Whereas both *Television Coverage in Canada* and *List of Broadcasting Stations in Canada* come from a series of textual records titled *Canadian Broadcasting Corporation (C.B.C.)*, with reference number R2551-1-6-E, MG30-E273.

Aggregating Signal Strength to Electoral Districts: An average measure of signal strength can introduce measurement error for large districts with few people living across large swathes of land. Districts of this type are common in a large country like Canada, where outside of major cities the size of a district is quite large. We overcome this aggregation problem using a population-weighted method, where we first aggregate our ITM estimates to the smallest available statistical area in Canada: the census subdivision (CSD). We match 1951 census population data to these CSDs to use as weights when aggregating from CSDs to electoral districts. We successfully match 1951 population data to 92.4 percent of CSDs, and supplant missing values with the last available year, starting with 1941, then 1931 if 1941 is not available, and so on. This procedure guarantees that even in large electoral districts we obtain accurate estimates of the signal strength received by the electorate, as densely populated CSDs are up-weighted in the aggregation, while sparsely populated CSDs are down-weighted. This procedure gives us a measure of television signal strength at the electoral district level, which varies across election years in accordance with the building of new television transmitters over our sample period.

Because television markets do not necessarily overlap with electoral districts, some districts are assigned a value of signal strength well below what any viewer would deem of satisfactory quality, and in some instances simply unwatchable. At baseline, we apply a minimum threshold for a district's average signal strength of 50 dbμV/m. This threshold is based on the Government of Canada's minimum requirement of 47 dbμV/m for a Grade B service contour, which by definition is a signal level the Government of Canada deems "to be adequate, in the absence of man-made noise or interference from other stations, to provide a picture which the median observer would classify as of satisfactory quality." (ISED, 2016, p. 12) With this transformation, signal strength increases continuously for values greater than 50 dbμV/m and is set to zero otherwise.
Source: The harmonized decennial census population data we match to CSDs are at `https://borealisdata.ca/file.xhtml?fileId=277432&version=2.10`.

Voter Turnout: We calculate voter turnout as the ratio of total votes cast in electoral district relative to the size of the electorate, for every district d in election year t. We do not include by-elections.
Source: Election Canada's Report of the Chief Electoral Officer, Table 5, Summary of General Election Results by Electoral District.

Political Party Vote Shares: We calculate party vote shares as the votes cast for a given party divided by all votes cast, for each electoral district d in election year t. In our analysis, we report results based on two different shares:

1. Liberal party vote share.
2. Conservative party vote share.
3. Non-major party vote shares; i.e., the aggregate vote share for all parties excluding the Liberal and Conservative parties.

Source: Information on candidates, party affiliation and total votes was scraped from Parliament of Canada's Parlinfo website, https://lop.parl.ca/sites/ParlInfo/default/en_CA/.

Vote Shares for Politically Left and Right Parties: We calculate the share of votes for left-leaning and right-leaning political parties as a fraction of all votes cast, for each electoral district d in election year t. We assign political parties as "left" or "right" through a variety of methods. Institutional knowledge of the Canadian political system makes the assignment of some parties non-controversial, particularly the parties that receive most of the votes; e.g., the Liberal party is left-leaning and the Conservative party is right-leaning. For lesser-known fringe parties, we use party websites, and various online sources such as Wikipedia to deduce the political alignment. Any possible measurement error introduced here is assumed to be minimal, since these fringe parties make up a tiny portion of the total votes cast, and typically only have a candidate on the ballot in only a few districts in a given election year.
Source: Information on candidates, party affiliation and total votes was scraped from Parliament of Canada's Parlinfo website, https://lop.parl.ca/sites/ParlInfo/default/en_CA/.

Incumbent Win Margin: We calculate an incumbent's win margin in district d in election year t based on vote shares from the 1953 and 1957 elections. We focus on the 1953 and 1957 elections because the majority of the television network expansion occurred between these election years. To account for Canada's multiparty system, we compare vote shares between the 1953 incumbent and the strongest opposing party in each district. If the incumbent was re-elected in 1957, we use the same comparison; if not, we compare the incumbent's 1957 vote share to that of the new winner. While the opponent is defined by party affiliation, the incumbent is identified by prior electoral success, regardless of party. This approach thus captures an individual incumbency effect, not a party effect.
Source: Information on candidates, party affiliation and total votes was scraped from Parliament of Canada's Parlinfo website, https://lop.parl.ca/sites/ParlInfo/default/en_CA/.

Speech Localization Index: We construct an index capturing the local orientation of speeches delivered by Members of Parliament (MPs) in the House of Commons, based on three related measures. These measures, derived from the full universe of floor speeches over our sample period, quantify the frequency and intensity with which MPs refer to geographic locations within their own electoral districts.

Our starting point is the Canadian Geographical Names Database, which provides latitude and longitude coordinates for all named locations in Canada. Using the *Generic Category* variable, we retain only entries classified as populated places—i.e., locations with permanent human settlements. From this list, we build a dictionary of place names and implement a Named Entity Recognition algorithm to identify every populated place mentioned in a given speech. For each extracted reference, the algorithm calculates the distance between the mentioned location and the centroid of the speaker's electoral district. This process yields the following information, which varies across MPs and parliamentary sessions:

(i) The number of speeches in which an MP mentions any populated place;

(ii) The number of speeches in which an MP mentions a populated place within their own district.

From this, we construct two extensive-margin measures:

(1) *Mention local*: an indicator equal to one if an MP ever mentions a populated place within their district during a parliamentary session, and zero otherwise (i.e., when (ii) > 0).

(2) *Speech locality*: the share of place-based speeches that mention a location within the MP's own district, calculated as (ii) divided by (i).

In addition, for each speech, we extract:

(iii) The total number of populated places mentioned;

(iv) The number of those places located within the MP's district.

Using this, we define one intensive-margin measure:

(3) *Place locality*: the share of within-district places mentioned in a speech, averaged across all speeches by an MP that mention any populated place. This is computed as the average ratio of (iv) to (iii) for each speech.

Finally, we combine these three measures into a composite index following the procedure of Anderson (2008). Each variable is standardized to have mean zero and unit variance, then combined using the inverse of the covariance matrix of the standardized variables to produce a single index. This *speech localization index* captures the extent to which an MP's speeches focus on the geographic communities they represent.

Sources: Parliamentary speech transcripts are obtained from Beelen et al. (2017). The Canadian Geographical Names Database is available at `https://natural-resources.canada.ca/earth-sciences/geography/download-geographical-names-data/9245`.

Party Dissent Index: We construct a measure of political accountability based on an MP's willingness to deviate from party-line voting in the House of Commons. Using roll-call vote records for all parliamentary divisions during our sample period (Godbout and Høyland, 2017), we derive two related measures of legislative dissent.

The first measure, *vote count dissent*, records the total number of times an MP votes against the majority of their party in a given parliamentary session. To address the skewed distribution and prevalence of zeros, we apply the inverse hyperbolic sine transformation. The second measure, *any dissent*, is a binary indicator equal to one if an MP casts at least one such vote during the session, and zero otherwise.

We combine these two measures into a single index using the procedure outlined in Anderson (2008). Each variable is standardized to have mean zero and unit variance, and we aggregate them by weighting each component with the inverse of the covariance matrix of the standardized variables. The resulting composite measure, which we refer to as the *party dissent index*, captures the extent to which an MP breaks with party ranks during legislative votes.

Source: Roll-call voting records are from Godbout and Høyland (2017).

Population Density: We measure population density as the ratio of an electoral districts total population divided by area. Electoral district population is based on 1931 data from the decennial census.
Source: Election Canada's 1935 Report of the Chief Electoral Officer, Table 5, Summary of General Election Results by Electoral District.

Earnings: We construct a measure of district-level earnings, based on a five percent sample of the 1911 decennial census. The census contains two variables, EARNINGS_AT_CHIEF_OCC and EARNINGS_AT_OTHER_OCC, which are measures of the total amount of money earned by the person being enumerated at their chief occupation and other occupation, respectively. From these, we construct an aggregate measure of total earnings of each enumerated individual in the census, and then calculate the average total earnings at the CSD level, based on census ID variable CCRIUID_CSD_1911. We then intersect our digitized CSD and electoral district maps in ArcGIS to determine the share of area for a CSD that corresponds to an FED, and aggregate our earnings measure up to the electoral district level using the shares as weights. This gives us our final measure of average district-level earnings.
Source: Census of Population, 1911, https://doi.org/10.5683/SP3/MDTWGJ, Borealis, V2.

Average Age: We construct a measure of district-level average age, based on a five percent sample of the 1911 decennial census. The census contains a variable, DERIVED_AGE, which measures the age of the enumerated individual. We calculate the average age at the CSD level, based on census ID variable CCRIUID_CSD_1911. We then intersect our digitized CSD and electoral district maps in ArcGIS to determine the share of area for a CSD that corresponds to an FED, and aggregate our age measure up to the electoral district level using the shares as weights. This gives us our final measure of the average age in a district.
Source: Census of Population, 1911, https://doi.org/10.5683/SP3/MDTWGJ, Borealis, V2.

Literacy Rates: We construct a measure of district-level literacy rates, based on a five percent sample of the 1911 decennial census. The census contains two variables, CAN_READ and CAN_WRITE, which are both indicators equal to 1 if the enumerated individual can read or write, respectively. From these, we construct a literacy variable equal to one if an individual can read or write, and zero otherwise, and then calculate average literacy at the CSD level, based on census ID variable CCRIUID_CSD_1911. This approach yields the percent of literate enumerated individuals. We then intersect our digitized CSD and electoral district maps in ArcGIS to determine the share of area for a CSD that corresponds to an FED, and aggregate our literacy measure up to the electoral district level using the shares as weights. This gives us our final measure of a district's literacy rate.
Source: Census of Population, 1911, https://doi.org/10.5683/SP3/MDTWGJ, Borealis, V2.

Urbanization Rates: We construct a measure of district-level literacy rates, based on a five percent sample of the 1911 decennial census. The census contains a variable, CCRI_URBAN_RURAL_1911, which indicates if the geographic location where an enumerated individual lives is classified as urban or rural. We assign a new variable equal to one if urban, and zero otherwise, and then calculate average urbanization at the CSD level, based on census ID variable CCRIUID_CSD_1911. This approach yields

the percent of enumerated individuals living in an urban area. We then intersect our digitized CSD and electoral district maps in ArcGIS to determine the share of area for a CSD that corresponds to an FED, and aggregate our urbanization measure up to the electoral district level using the shares as weights. This gives us our final measure of a district's urbanization rate.
Source: Census of Population, 1911, https://doi.org/10.5683/SP3/MDTWGJ, Borealis, V2.

Newspaper Circulation: We digitize circulation data for daily and weekly newspapers from 1945 to 1958, drawing on multiple editions of the Canada Year Book, an official statistical almanac of Canadian social and economic conditions. The Year Book reports circulation figures for urban centers with populations of at least 20,000 until the 1954 edition, after which the threshold rises to 30,000. We assemble these data into panels covering 36 cities[26] for daily newspapers and 28 cities[27] for weekly newspapers, including both English- and French-language publications. The included cities account for 93 percent of total daily newspaper circulation in 1950, and for 61 percent and 80 percent of total English- and French-language weekly circulation, respectively (DBS, 1950).

We construct five outcomes from these data, separately for daily and weekly newspapers: (i) the log number of newspapers, (ii) the log of total circulation, (iii) the log of average circulation per newspaper, (iv) circulation per capita, and (v) circulation per household. To calculate per capita and per household measures, we use population estimates from the Canada Year Book, based on the 1941, 1951, and 1961 decennial censuses, and interpolate values for intervening years. The underlying circulation figures are reported in different years across Year Book editions, which we piece together to form a panel covering 1945 to 1958. A small number of urban centers drop out in early or late years due to the change in population threshold, but the majority appear throughout the panel.
Source: The 1947, 1950, 1951, 1954, 1956, 1957, 1959, and 1960 editions of the *Canada Year Book*.

Content Differences Across Public and Private Stations: Here we describe the data used to construct Table 1. Quantitative information on content differences across station types is drawn from a comprehensive study by the Royal Commission on Broadcasting. The underlying data cover the full broadcast week of January 15–21, 1956, and include all public and private stations then in operation. This specific week was selected "because it was in the winter season when programming is generally of better quality than in summertime and because it contained no unusual events which would make it unrepresentative of the normal broadcast fare" (Royal Commission on Broadcasting, 1957, p. 40).

We examine two categories of content characteristics. *Share of Total Airtime* refers to the proportion of total weekly broadcast time allocated to entertainment or informational programming, calculated relative to overall airtime across all English- and French-language stations. *Source of Production* captures the geographic origin of programming. Within this category, *Recorded* refers to all pre-recorded material, regardless of its source, due to limitations in program logs that did not distinguish between locally

[26]Including Brantford, Calgary, Edmonton, Fort William, Guelph, Halifax, Hamilton, Kingston, Kitchener, London, Moncton, Montreal, Moose Jaw, New Westminister, Niagara Falls, Oshawa, Ottawa, Peterborough, Port Arthur, Quebec, Regina, Saint John, Sarnia, Saskatoon, Sault Ste. Marie, Sherbrooke, St. Catharines, Sudbury, Sydney, Three Rivers, Timmins, Toronto, Vancouver, Victoria, Windsor and Winnipeg.

[27]Including Calgary, Edmonton, Hamilton, Hull, Kingston, Lachine, Moncton, Montreal, Moose Jaw, New Westminister, Oshawa, Ottawa, Peterborough, Quebec, Regina, Saint John, Sarnia, Shawinigan Falls, Sherbrooke, St. Laurent, Sudbury, Three Rivers, Timmins, Toronto, Vancouver, Verdun, Victoria and Winnipeg.

recorded and externally acquired content. *Network* refers to programming sourced from the CBC's national service, while *Local* includes all live, locally produced content.

We construct two summary ratios. The *Public / Private* ratio divides the value for public stations by that for private stations within each content category. The *Network / Local* ratio compares the share of *network* content to *local* live content separately by station type.
Source: *Canadian Television and Sound Radio Programs*, Appendix XIV, Royal Commission on Broadcasting (1957) (Smythe, 1957). Data on *Share of Total Airtime* are reported on p. 46; data on *Source of Production* are on p. 76.

Pre-Television Radio Coverage: To capture cross-sectional variation in media access prior to the expansion of television, we construct a measure of radio coverage based on records of operating radio towers and their call signs in 1941, obtained from *Library and Archives Canada*. As these historical records do not include precise geographic coordinates, we supplement them with a 1971 archival document listing the locations and frequencies of operating radio towers. By cross-referencing call signs and cities of operation, we successfully match 72 of the original 85 radio stations to exact tower locations, leveraging the fact that these stations remained active in 1971. For the remaining 13 stations, we assign location based on the main radio tower in the corresponding city of operation.

Using these locations, we construct a cross-sectional measure of radio coverage for each electoral district. Specifically, we count the number of radio towers within a given distance of the district centroid, where coverage radii are defined as $\chi \in \{50 \text{ km}, 75 \text{ km}, 100 \text{ km}\}$. This results in a pre-treatment measure of media exposure that varies by distance threshold.
Source: The *Categories of Input Data - Radio and Television Broadcasting Stations* is available from the *Library and Archives Canada*, with reference number RG57, Accession number: 1989-90/212 GAD, Box number: 11, File number: 1653-3-BCA, File part: 1.

Joint Radio and Television Ownership: We compile a comprehensive list of private radio and television stations operating in 1956, including all identified owners and their associated ownership shares, as reported in Appendix VIII of the Royal Commission on Broadcasting (Royal Commission on Broadcasting, 1957). For each television station, we calculate a cross-media ownership score by summing the product of each owner's share in the television and radio station. This measure reflects the intensity of joint ownership between radio and television media at the station level.

Figure A.3 presents the distribution of cross-media ownership across the 34 private television stations in our sample. These stations are collectively owned by 58 distinct proprietors, 64% of whom also own a radio station. Most owners (80%) are affiliated with only one television station, and among these, 76% also own a radio outlet. For 62% of private television stations, all ownership shares are held by proprietors who also control radio stations; only three stations lack any ownership links to radio broadcasting.
Source: *Radio and Television Stations in Canada*, Appendix VIII, Report of the Royal Commission on Broadcasting (Royal Commission on Broadcasting, 1957).