

IT'S A BIRD, IT'S A PLANE, IT'S SUPERMAN! USING MASS MEDIA TO FIGHT INTOLERANCE

Alex Armand, Paul Atwell, Joseph F.
Gomes and Yannik Schenk

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Using Mass Media to fight Intolerance*

Alex Armand

Paul Atwell

Joseph F. Gomes

Yannik Schenk

Abstract

This paper examines the impact of progressive radio programming on societal change during the early period of desegregation in post-World War II U.S. We investigate the influence of the popular radio show *The Adventures of Superman* on promoting tolerance and exposing the bigotry of the Ku Klux Klan (KKK) in 1946. Using state-of-the-art radio propagation models, we map the broadcast's exposure and analyze its effect on various socioeconomic outcomes. We find that counties with higher exposure to the broadcast experienced a significant decrease in support for KKK-affiliated political candidates and opponents of civil rights. Individuals potentially exposed to the Superman program during their youth exhibited more progressive attitudes towards civil rights, racial desegregation and African Americans later in life. These individuals were also less likely to participate in the Vietnam war. Additionally, we explore the long-term impact of the radio coverage by examining outcomes at the county level, such as the presence of active KKK branches, civil rights organizations, and accessibility of non-discriminatory services for African Americans listed in the "Negro Motorist Green Books." We find significant and progressive effects on all analyzed outcomes. These results underscore the potential of progressive radio programming as a catalyst for social change and contribute to our understanding of how media shapes societal attitudes and beliefs. (*JEL* D7, D83, J15, L82, N32, Z18)

Keywords: Mass Media; Radio; Segregation; Ku Klux Klan; Superman; Intolerance; Civil Rights; Racism.

***Armand:** Nova School of Business and Economics – Universidade Nova de Lisboa, CEPR, NOVAFRICA, and Institute for Fiscal Studies (e-mail: alex.armand@novasbe.pt); **Atwell:** University of Michigan (e-mail: patwell@umich.edu); **Gomes:** IRES/LIDAM, UCLouvain; and CEPR (e-mail: joseph.gomes@uclouvain.be); **Schenk:** IRES/LIDAM, UCLouvain (e-mail: yannik.schenk@uclouvain.be). The title is inspired by the opening of the radio show *The Adventures of Superman*: "Up in the sky! Look! It's a bird! It's a plane! It's Superman!." We would also like to thank Imran Rasul, and seminar participants at CUNEF and LISER for helpful comments. Armand acknowledges the funding from the Fundação para a Ciência e a Tecnologia (UIDB/00124/2020, UIDP/00124/2020 and Social Sciences DataLab - PINFRA/22209/2016), POR Lisboa and POR Norte (Social Sciences DataLab, PINFRA/22209/2016).

1 Introduction

Intolerant attitudes, prejudice and discrimination are often a matter of life and death for historically disadvantaged ethnic and racial minorities. They are consequential in social interactions, but also structure inequality before the state. Approximately one out of every 1,000 Black men in the United States (U.S.) are killed by the police during their lifetime in contrast to one out of every 3,000 white men and one out of every 7,500 Asian men experiencing deaths in the hands of the police (Edwards et al., 2019). Beyond the direct lives lost, such violence also has knock on negative effects on educational outcomes and the psychological well-being of minority children (Ang, 2021) and the mental health of the general minority population (Bor et al., 2018). Furthermore, a large body of research has additionally documented the negative consequences of prejudice and discrimination on education (Carlana, 2019), labour markets (Glover et al., 2017), health care (Alsan and Wanamaker, 2018) and income mobility (Chetty et al., 2020).

Despite the well-established and undeniable pernicious consequences of prejudice, effective policies for combating prejudice against minority individuals are shockingly scarce and difficult to devise (Bertrand and Duflo, 2017). In this context, we provide historical evidence of how a popular children’s radio program – *The Adventures of Superman* – broadcast in the 1940s U.S. was able to do just that by attacking intolerance and prejudice head on.

We focus on a period in history when television had not yet become widespread, and radio emerged as the dominant “mass medium” in the U.S., exerting significant cultural influence across society. In this context, the radio program *The Adventures of Superman*, featuring the popular DC Comics character Superman, began airing in 1940 on one of the largest American commercial radio networks, the Mutual Broadcasting System (known as Mutual or MBS). Airing three to five times a week, the program quickly became one of the most popular entertainment formats for children and young adults at the time.

In 1946, the MBS embarked on a remarkable experiment in the history of radio broadcasting called *Operation Intolerance*.¹ Following the decision of the show’s producers and its sponsoring company Kellogg’s, the show’s thematic content suddenly shifted to episodes centered around themes of justice and tolerance, embodying the foundational principles of an inclusive American society. The new episodes particularly emphasized communal harmony among children of all

¹This term does not appear in internal documents of the program. We adopt this term from the media. Appendix Figure B4 provides evidence on its use in local newspapers of that time.

racism and ethnic backgrounds. Some episodes explicitly targeted hate organizations such as the Ku Klux Klan (KKK) and their supremacist ideology. The KKK was “the most prominent hate-based organization in American history” (Fryer Jr and Levitt, 2012).² Those episodes specifically demystified the “secret” organization, exposing their rituals, code words, and bigotry to a national audience.

“Operation Intolerance” proved to be a tremendous success for the series, making *The Adventures of Superman* the highest-rated radio program for children. It even received an endorsement from former U.S. Vice President Henry A. Wallace, who stated that using Superman to teach children about the principles of tolerance and equal opportunity for all races, creeds, and colors was a crucial aspect of democracy. The effectiveness of the Superman radio program in 1946 – for instance, in obstructing the KKK’s progress in the U.S. – has also been discussed in academic circles (see, for example, Levitt and Dubner, 2005, pp.49-78, and Bowers, 2012). However, despite the popular belief of its effectiveness and anecdotal evidence, the effects remain unsubstantiated by empirical evidence. This paper aims to fill this gap.

We collected historical data from the U.S. and used state-of-the-art radio propagation models to create detailed maps of (plausibly exogenous) exposure to the broadcast of *The Adventures of Superman* on the MBS network. Employing Differences-in-Differences (DiD) at the U.S. county level as well as cohort study designs at an individual cohort level, we establish persistent short-term and long-term effects of the radio program on three distinct sets of outcomes.

First, we find that the programs boosted discussion around the KKK and other themes related to tolerance, increasing immediately during the broadcasts. A text analysis on 8.3 million pages from 1649 digitized newspapers shows that the Superman radio show increased the salience of terms associated with Superman, KKK and intolerance in public discourse. While the program targeted children, its impacts spilled over to adults through promoting a discourse around tolerance and progressive values in other spheres.

Second, we find that exposure to the Superman program also had an immediate effect on adults’ political behavior, reflected in voting decisions. In particular, we show that in areas where the broadcasts reached, candidates across the Deep South who were likely to be segregationists lost votes. In addition, the vote share of a candidate explicitly backed by the KKK declined in a famous gubernatorial race in Georgia. We hypothesize that the increased salience of topics of

²For further reading on the KKK refer to Kennedy (2011).

tolerance can explain why a children’s program affected voting decisions of adults.

Third, we find long-term persistent effects of the program on attitudes and preferences towards racial segregation among individuals who were exposed to these programs as children. In particular, we find that, later in life, individuals who were exposed to the series are less in favor of segregation, and have improved self-reported feelings towards African Americans compared to individuals who were either not exposed to the program or not targeted by the program. Furthermore, individuals exposed to the show also have more positive attitudes towards the eventual Civil Rights Movement, captured through self-reported feelings towards the civil rights leaders.

These effects on attitudes and preferences translated into long-run behavioral change as well. We find effects on social mobilization as measured by participation in the Vietnam War, one of the most important events for the generation born in the 1940s. Objections to the war were closely related to support for the Civil Rights Movement in 1960s America, with many civil rights leaders openly discouraging participation. We find that exposure to the Superman series in 1946 significantly reduces individual participation in the conflict. This is in line with the previous finding that Superman had practical political consequences, as shown in reduced votes for segregationist candidates.

Finally, we also show that Superman has an effect more broadly on social mobilization in the short and the very long run. Exposure reduces racial segregation in the short run, as captured by increases in the number of African American-friendly establishments. In addition, it reduces the presence of hate-based organizations such as the KKK, while increasing the presence of organizations championing civil rights. These effects persist to current times.

Our paper contributes to several distinct strands of the literature. First, we join a literature highlighting how film and media can alter societal attitudes and behavior. Many recent contributions document the intolerance- and hatred-generating effects of media. For instance, while the influential 1915 American motion picture – “The Birth of a Nation” was instrumental in the nation building efforts of the U.S. (Esposito et al., 2023), it also had a persistent negative influence on racial discrimination against African Americans (Ang, 2023).³ In addition, radio has been instrumental in fomenting exclusionary attitudes and behavior, promoting antisemitism in the U.S. (Wang, 2021), political mobilization in favor of the Nazi regime in Germany (Adena et al., 2015),

³It promoted the Lost Cause narrative – a revisionist and racist interpretation of the U.S. Civil War that romanticized the Confederacy and portrayed it as a noble defender of states’ rights, downplaying the role of slavery in the conflict.

ethnic hostility in Croatia (DellaVigna et al., 2014), and genocide in Rwanda (Yanagizawa-Drott, 2014). Recent studies have also documented a similar ability of social media to incite deleterious behaviors such as racial violence (Bursztyn et al., 2019; Müller and Schwarz, 2020, 2021). In sharp contrast, we demonstrate that radio can be a force for good. In particular, we show that *The Adventures of Superman* program had a short-term and long-run positive effect on tolerance and attitudes. To the best of our knowledge, no other papers have demonstrated the long-run consequences of a radio show on tolerance and positive racial attitudes.⁴

Our findings also align with the socially beneficial effects of *edutainment* programs on attitudes and behaviors documented in a growing literature (Gentzkow and Shapiro, 2008; Jensen and Oster, 2009; Chong and Ferrara, 2009; La Ferrara et al., 2012; Banerjee et al., 2015; Ravallion et al., 2015; Bursztyn and Cantoni, 2016; Kearney and Levine, 2015, 2019). In a related paper, Riley (2022) shows how role models in films can improve exam performance of female students. The documented impacts in these papers usually are unintended by-products of audience demand for amusement (DellaVigna and La Ferrara, 2015). In contrast we provide rare evidence of a radio-based intervention that promoted intergroup tolerance and reduced racial animus.

We also contribute to the literature that seeks policies for promoting intergroup tolerance. Most of this literature has focused on experimental interventions, for instance, of the type that increases intergroup contact, which in turn is expected to reduce intergroup antagonism and promote tolerance, in line with contact theory (Allport, 1954).⁵ Despite the fascinating insights of these experimental papers, the interventions are unfortunately not always scale-able. In contrast, our evidence points to a low-cost radio program (already at scale in the population targeted) that can shift attitudes and behavior with long-term persistent positive effects. Our research also relates to the recent lab-in-the-field evidence from developing countries on how media can be used to build inter-ethnic harmony (Blouin and Mukand, 2019; Paluck and Green, 2009; Paluck, 2009). However, compared to the existing literature, the intervention that is the focus of our research takes place in a real-world context, where external validity is assured by its nation-wide nature.

Finally, we contribute to a burgeoning literature on economic history that demonstrates the long-term persistent effects of historical natural experiments. For instance, Voigtländer and Voth

⁴For a review of the vast literature studying the effects of media on social and political outcomes see Strömberg (2015); DellaVigna and La Ferrara (2015) and Campante et al. (2022). For short run positive effects on rebel demobilization and conflict resolution see Armand et al. (2020). Likewise, Gagliarducci et al. (2020) show how BBC radio was instrumental in garnering anti-Nazi resistance in Germany.

⁵See Bertrand and Dufló (2017) for a review of the literature.

(2012) demonstrate the persistent effects of plague-era anti-Jewish pogroms on antisemitism in Nazi Germany. Similarly, Bazzi et al. (2020) highlight how frontier geography affects rugged individualism centuries later. Furthermore, Durante et al. (2019) demonstrates how the expansion of Berlusconi’s media network in Italy predicts the future success of his right-wing party. Lastly, closely related to our paper is the previously mentioned work by Ang (2023), which demonstrates the long-run effects of the American motion picture “The Birth of a Nation” on racial animus.⁶ We join these papers with evidence on a new type of experiment.

2 Background

2.1 Racial segregation in the 1940s U.S. and the rise of the Civil Rights Movement

During the 1940s, severe racial segregation persisted throughout most of the U.S. Resistance to integration was engrained in mass attitudes among many white Americans, resulting in diffused discrimination, violence and intimidation. Segregation was also often encoded in law. The Jim Crow laws in the Southern states, ratified in the late 1800s, imposed segregation in public facilities and imposed harsh voting restrictions on African Americans. The combined effect was the persistence of economic, social, and political disenfranchisement among the formerly enslaved and other minority groups.

The ultimate expression of this racial animus is the KKK, a white supremacist hate group and terrorist organisation. After its operations curtailed for the second time during WWII, the KKK experienced a revival during the later 1940s, thriving on the uncertainties and fears of the post-war period.⁷ Commonly referred to as the “third Klan” in the late 1940s, 50s and 60s, several branches emerged opposing the Civil Rights Movement and desegregation. Although many public figures publicly opposed it, at the time there was limited understanding of the organization’s societal involvements, implicit objectives and internal operations.

In this period the KKK relied on partnerships with local politics and had deep rooted connections to local police and administrators (McWhorter, 2001). For instance, in 1946, the KKK

⁶A related literature has documented the importance of historical institutions on contemporary racial prejudice and intergroup conflict (Jha, 2013; Satyanath et al., 2017).

⁷The “second Klan” emerged in 1915 in Georgia, under the leadership of William Joseph Simmons, and was largely attributed to the success of the film *The Birth of a Nation* (see, e.g., Ang, 2023). Its membership reached an apex in the mid-1920s, ranging from three to eight million individuals.

openly supported and pledged 100,000 votes for Eugene Talmadge, a staunch opponent of civil rights who was running for governor, and mobilized its members to campaign and to intimidate African American voters and other groups that opposed his candidacy ([Equal Justice Initiative, 2018](#); [Mickey, 2015](#)).

Significant progress towards civil rights began to emerge in the subsequent decades, particularly during the Civil Rights Movement of the 1950s and 1960s. Key milestones included the landmark 1954 Supreme Court decision in *Brown v. Board of Education of Topeka*, which rendered racial segregation in public schools unconstitutional; the 1964 Civil Rights Act prohibiting discrimination in employment, education, and public accommodations; and the 1965 Voting Rights Act, which eliminated barriers to voting, such as literacy tests. These achievements marked pivotal advancements in dismantling racial segregation and advancing equal rights in the U.S.

The rise of the Civil Rights Movement in the 1960s is concomitant with one of the most polarizing events in the 20th century U.S., the Vietnam War (1955–1975). The U.S. government's deep involvement faced mass public dissent in the form of debates and protests questioning the moral and political grounds of its continued engagement from as early as 1963. Proponents of the war viewed it as a means to promote democracy and freedom, and protect American values by defeating communism. To some of these supporters, the Civil Rights Movement posed a parallel challenge to these values, as it confronted existing power structures and racial hierarchies, and invoked communism or communist principles. Opponents of the war saw it as a symbol of oppressive and unjust government policies, with clear links to injustices the Civil Rights Movement sought to rectify.

In this context, the Civil Rights Movement gained momentum as the conflict intensified in the 1960s, with the two becoming closely linked. Prominent civil rights leaders such as Muhammad Ali and Martin Luther King, Jr were openly opposed to the conflict.⁸ Several civil rights activists also criticized the war by arguing that the resources allocated for it could be better utilized to address poverty and inequality through domestic programs. For instance, in 1967, Martin Luther King, Jr. reported that “millions of dollars can be spent every day to hold troops in South Vietnam and our country cannot protect the rights of Negroes in Selma” ([King Encyclopedia](#),

⁸Ali famously said: “And shoot them for what? They never called me [n-word], they never lynched me, they didn't put no dogs on me, they didn't rob me of my nationality, rape and kill my mother and father. [...] Shoot them for what? How can I shoot them poor people? Just take me to jail” ([The Washington Post, 2018](#)).

2018). Further, prominent civil rights organizations officially opposed the Vietnam war.⁹

2.2 *The Adventures of Superman and Operation Intolerance*

Before the advent of television in the late 1950s, radio served as the predominant “mass medium” in the US, exerting significant cultural influence on the country reaching into the entire spectrum of American society. As of 1946, television ownership was limited to a mere 8,000 U.S. households (Anderson, 2005). Meanwhile, the proportion of households with a radio receiver grew to 96% by 1950 (Craig, 2004). During the “golden age” of radio, four major networks competed on a national scale for market shares, broadcasting original programming.

In this context, the radio program *The Adventures of Superman*, featuring the DC Comics character Superman, started airing in 1940. From August 31, 1942, to February 4, 1949, it was exclusively broadcast on Mutual Broadcasting System network (MBS), one of the four main American commercial radio networks, in operation from 1934 to 1999. The program targeted children and young adults and was broadcast in the after-school afternoon slot as a 15-minute serial that aired three to five times per week, with separate story arcs reaching from 15 minutes to over three hours. During the 40s, the show has consistently featured amongst the most popular entertainment formats of youth radio programming (Hooper Inc., 1947, 1948, 1949). The series was discontinued in 1951, having aired 2088 original episodes.

The year 1946 represented a unique experiment in the history not only of the series, but of radio broadcasting in general. In October 1945 the producers of *The Adventures of Superman* started looking for writers who would contribute scripts that would pitch Superman on “*crusades against intolerance, state a case and a solution in terms which children could understand, keep the character of Superman alive and combine exciting entertainment with a plain spoken message*”.¹⁰ In April 1946, MBS broadly announced the beginning of “Operation Intolerance”, a series of new episodes that had the clear goal of disseminating the values of tolerance and unity regardless race or religious backgrounds among young listeners. Amidst the resurgence of racial tensions following the conclusion of World War II, Superman assumed a significant role in advocating for

⁹For instance, according to the Student Nonviolent Coordinating Committee (SNCC), blacks should not “fight in Vietnam for the white man’s freedom, until all the Negro people are free in Mississippi.” (amistadresource.org). For further reading, see Harrison (1996); Lucks (2014); Shapiro (1989).

¹⁰Cited from Lewis, W., Vice President of the responsible production company Kenyon & Eckhardt, (1946, May 13). “Reformers Challenged by Superman.” Broadcasting, pp. 75. Appendix Figure B4 provides the full statement.

the concept of a united American society that embraces individuals irrespective of their creeds or racial origins.

The first sequence of episodes under the umbrella of “Operation Intolerance”, “*The Hate Mongers’ Organisation*”, centered around the attempt of an exemplary white supremacist group, the “Guardians of America”, to prevent the creation of a community center (Unity house) “where children of every race, ethnic background, and spiritual belief can play and interact to learn that all people are the same”.¹¹ With Superman’s assistance the hate mongers are defeated, allowing the establishment of Unity House to proceed. During the mid-1940s, when racial segregation enforced by the Jim Crow laws was still the prevailing practice in most states, it required little imagination to perceive the story arc as a deliberate political declaration, carefully designed to resonate with both the show’s young audience and adults alike.

Following the positive reception, the creators subsequently collaborated with Stetson Kennedy, a human rights activist who contributed to the infiltration of the KKK in the mid-1940s, to produce a story arc explicitly addressing the Klan and what it stood for. Over two weeks in June 1946, MBS broadcast a series of episodes of “*The Clan of the Fiery Cross*,” in which Superman directly battled the Klan. Using the information collected by Stetson Kennedy, the plot exposed the KKK’s rituals, code words, and bigotry to a national audience, trivializing their representation.

Another illustration of Superman addressing real-world issues related to racism and intolerance is depicted in the story titled “*George Latimer, Crooked Political Boss*”. In this narrative, the main antagonist, George Latimer, manipulates the governor of Metropolis to implement discriminatory practices during the hiring of veterans for state jobs. Latimer insists that only “native-born, white, Protestants” be considered (August–September 1946). The storyline’s resonance with the pertinent concerns surrounding the reintegration of veterans into civilian life was acknowledged and praised by the American Veterans Committee. This significant endorsement, despite the show’s primary target audience being juveniles, testifies to its reach beyond the realm of escapism, assuming a prominent role in reflecting and influencing contemporary culture.

Operation Intolerance was a huge success for the series. *The Adventures of Superman* became the highest-rated radio program for children. In an official statement, the former vice president of the United States, Henry A. Wallace, endorsed the plan “to use Superman for the purpose of teaching children that Democracy includes the idea of tolerance and equal opportunity for all

¹¹Cited from *The Adventures of Superman*, episodes 1254-1278, “The Hate Mongers’ Organisation”.

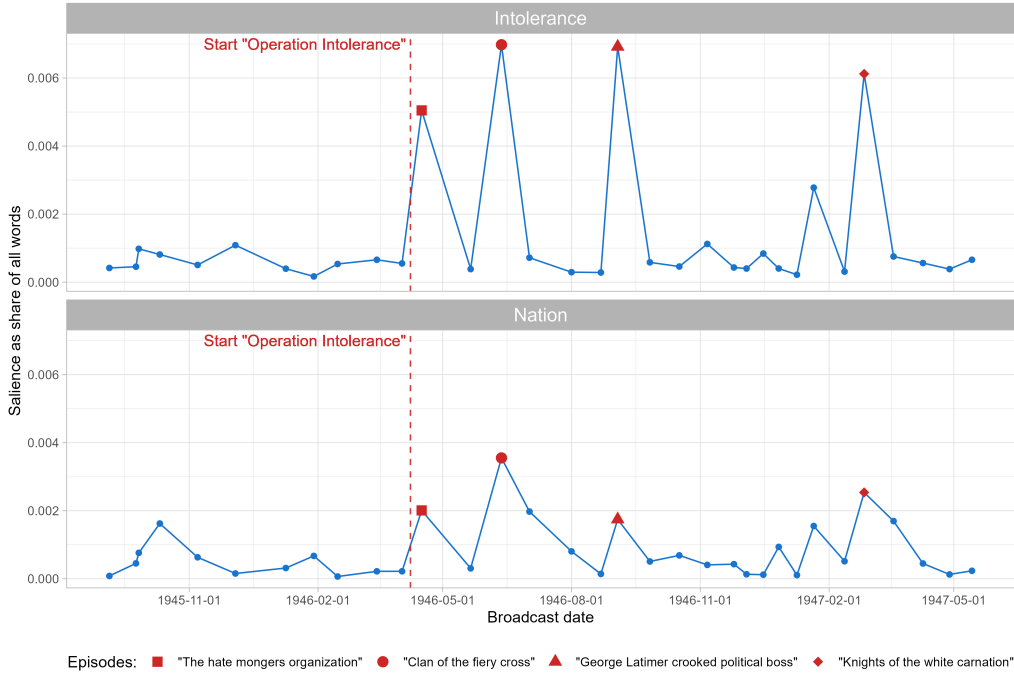
racess, creeds and colors.” Similar endorsements have been stated by various religious leaders, civil rights organizations and even president Truman.¹²

To provide quantitative evidence for the programming change, we perform a content analysis based on the transcripts of episodes. We use a bag-of-words approach using tailored lists of keywords to compute two indicators, *Intolerance* and *Nation*, capturing changes in content of the episodes. *Intolerance* captures words that are related to tolerance for racial, ethnic and religious differences. *Nation* captures content related to a collective American identity and unity. Figure 1 presents the share of Intolerance related or, respectively, Nation related words per episode.¹³ Considering six months before and after the launch of “Operation Intolerance,” the share of words related to intolerance increased by 370.46% and by 222.14% for nation related content. This confirms a sudden and stark change in the type of content the show’s young listeners were exposed to. Further, the correlation pattern in Figure 1 across the two distinct indicators highlights that the concept of America as a nation has been closely linked to racial, ethnic and religious tolerance in the story arcs. “Operation Intolerance” can therefore be seen as an attempt to redefine American values in the minds of a new generation of young Americans.

¹²Appendix B provides a detailed summary of the plot of key episodes and historical evidence from newspapers regarding the reception of the series by public opinion.

¹³We consider the period surrounding the programming policy change for which we have complete data, from September 1945 to May 1948. Appendix Figure B3 provides an analysis based on a prolonged time series.

Figure 1: Prevalence of topics by episode of *The Adventures of Superman*



Note. Figures indicate the share of words in each episode transcript that refer to intolerance (upper panel) or to nation (lower panel). We consider broadcast from September 1945 to May 1947. Data are derived from transcripts of the respective episodes. The keyword list for *Intolerance* contains bigotry, intolerance, tolerance, prejudice, discrimination, equality, race, hate, foreign, African, negro, ethnicity, jew, protestant, catholic, religion, creed, church, faith and variations of the aforementioned terms. The keyword list for *Nation* consists of America, un-American, American, nation, united, together, jointly, teamwork, collectively, community, United States and variations of the aforementioned terms. We remove stop words and apply basic stemming before calculating frequencies.

3 Data

3.1 Radio coverage

We digitize comprehensive data on the operating U.S. radio network in 1946 from the 1947 Broadcasting Yearbook. The Broadcasting Yearbooks serve as a comprehensive annual reference guide to the broadcasting industry in the U.S., providing detailed information about radio stations, broadcasting companies, and regulatory agencies. The publication includes listings of stations by state and city, along with information on station ownership, frequency, power, and programming. The entire digitized network consists of 986 individual antennas broadcasting radio programs on different frequencies and across different networks. Collected information include antenna location, network affiliation, transmitter power and frequencies. We also draw on detailed advertising records to identify when, and which radio stations broadcast *The Adventures of Superman*. Appendix Figure A2 provides the location of antennas.

To ensure accurate radio coverage calculations, it is important to note that in the 1940s the vast majority of radio broadcasting in the U.S. was based on amplitude modulation (AM) transmissions. AM stations have been very influential in U.S. starting from the 1920s (Strömberg, 2004). In 1940, they represented 99.6% of U.S. radio stations, and they still represent 74% of all stations at the beginning of the following decade (US Bureau of the Census, 1975). Although the FM network quickly expanded, actual listenership remained low: in 1960, 92% of all radio sets were AM only and it was only in 1979 that FM overtook AM in total listenership (Kleinfeld, 1979). Unlike frequency modulation (FM) transmission that depends on line-of-sight propagation (see, e.g., Olken, 2009; Yanagizawa-Drott, 2014; Armand et al., 2020), the propagation of the signal at lower frequencies, typically used for AM, is much less affected by the topography and other obstacles between the transmitter and the receiver. At lower frequencies, radio waves can pass through buildings, foliage and other obstructions and diffraction allows radio waves to bend over hills and other obstacles, traveling beyond the horizon following the contour of the Earth (see, e.g., Reed and Sander, 1987).

The propagation of AM transmission has two components: a ground wave that depends not only on topography, but also on the degree of soil conductivity, i.e., the ability of the soil to conduct electromagnetic waves, including moisture, soil composition, and mineral content; a sky wave that depends primarily on ionospheric refraction, i.e., the refraction or bending of radio waves by the degree of solar radiation in the ionosphere layer of the Earth's atmosphere. As such, topography-corrected radio coverage models like the Longley-Rice/Irregular Terrain Model (ITM) are not accurate predictors of actual coverage (Crabtree and Kern, 2018; Gagliarducci et al., 2020). Using a radio propagation model tailored to AM broadcasting in 1946, we estimate the precise radio coverage for each station, accounting for both ground and sky wave. The algorithm used to estimate signal strength considers a broad array of input values, including frequency, power, antenna type, topography, soil conductivity and sun spot number.¹⁴ The predictions produced a raster covering the continental U.S. at a resolution of 400 meters.

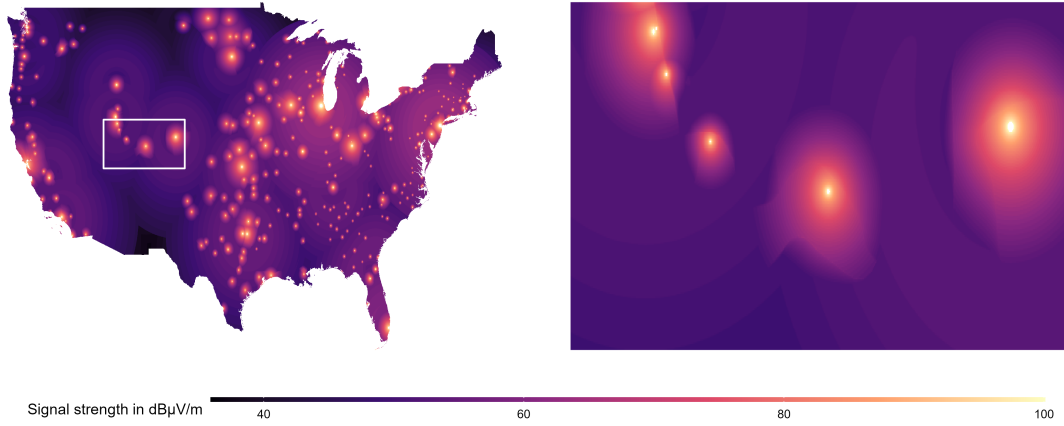
We overlay the signal strength of all stations affiliated with MBS. As many cells are covered by multiple stations, we assume listeners would tune into the station with the strongest signal and we keep that signal strength measure for those cells. This produces a single raster layer for the whole MBS network. The Left hand side of Panel A in Figure 2 shows the geographical

¹⁴While some open source tools for prediction are available, we collaborated with ATDI, a global leader in radio engineering, to ensure accuracy over the thousands of antennas broadcasting in our time period.

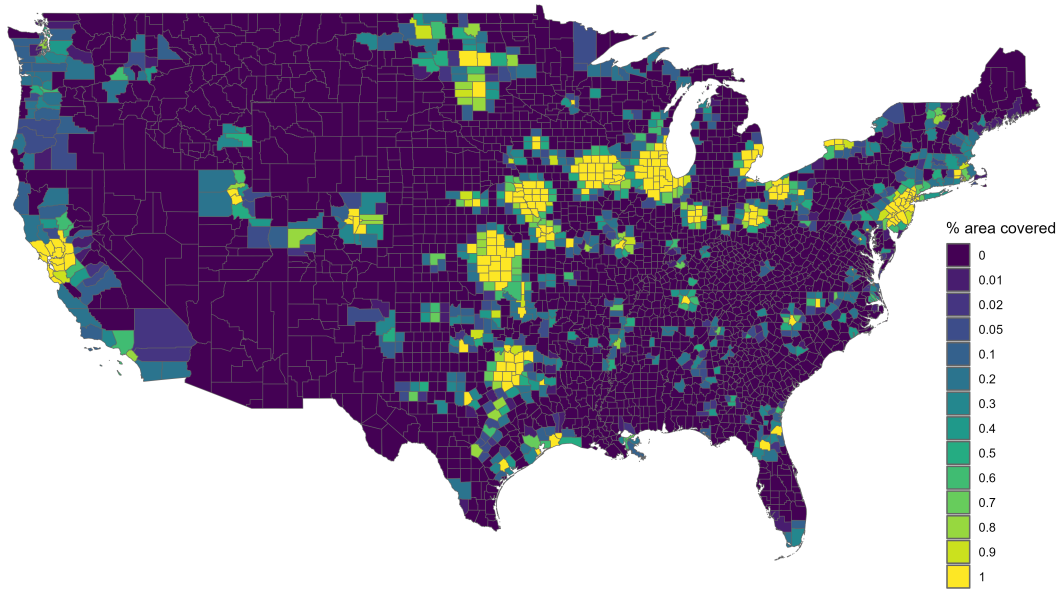
distribution of the signal strength of the MBS network. The right figure in Panel A shows zooms into a specific portion of the U.s. indicated by the square in the left panel. While radio coverage is strongly dependent on the location of antennas, like in the case of FM transmission, the actual coverage follows a plausibly-random pattern conditional on local characteristics.

Figure 2: Radio coverage of the MBS network in 1946

A. Signal strength



B. County-level coverage



Note. County-level coverage is computed as the share of the county area covered by at least medium signal strength ($\geq 66 \text{ dB}\mu\text{V}/\text{m}$). The Left hand side of Panel A in Figure 2 shows the geographical distribution of the signal strength of the MBS network. The right figure in Panel A shows zooms into a specific portion of the U.s. indicated by the square in the left panel. Details about the geo-location of antennas and the computation of the signal strength are provided in Section 3.3.

To derive meaningful county-level measures of radio exposure, we convert continuous val-

ues into binary coverage indicators at the cell level using the threshold of $66dB\mu V/m$ field strength, broadly considered as required sensitivity limit for AM broadcasting (ETSI, 2021). Based on the binary map of coverage at the cell level, we calculate the share of each county area covered with sufficiently strong signal.¹⁵ Panel B in Figure 2 shows the geographical variation of the resulting outcome.

3.2 Public discourse in local newspapers

While television and social media were not present or impactful at this time, newspapers played a crucial role in disseminating information, facilitating public discourse, and influencing opinions. We collect data from 1649 local newspapers from the online archive *newspapers.com* with headquarters in 1371 counties across 48 states. From January 1945 to December 1947, the archive contains more than 8.3 million pages. Figure G15 visualizes the distribution of newspapers across the US. We perform text analysis with a bag-of-words approach, treating the corpus as an unstructured matrix of words and exploring the unconditional frequency of words' appearance. This is a standard approach in the growing literature on the use of historical newspapers as a source of data (Beach and Hanlon, 2022).

We focus on two themes. The first refers to the presence in the newspapers of articles covering the show *The Adventures of Superman*. For this purpose, we collect the number of pages per newspaper and month containing any reference to Superman. The second refers to intolerance. For this purpose, we collect the number of pages per newspaper and month containing any reference to the KKK (or related words such as Klavern or Klansman). For both, we define salience of theme k in month t and newspaper n as the share of pages containing a specific combination of keywords:

$$(1) \quad \text{Salience}_{k,n}^t = \frac{\text{pages}_{k,n}^t}{\text{all_pages}_n^t}$$

where $\text{pages}_{k,n}^t$ is the number of pages mentioning at least one of the keywords at time t , and all_pages_n^t is the total number of pages in the newspaper in the same period. This approach is in line with Esposito et al. (2023), but instead of grouping information at the level of the county, we keep information at the level of the newspaper to exploit within-newspaper variation.

¹⁵Results are robust to using population-adjusted coverage using the population distribution in 1940.

3.3 Social mobilization

We gather data about social mobilization and collective action by focusing on outcomes that could have affected adults at the time or after the broadcast, including voting for segregationist politicians, actual segregation in accommodation and services, and the presence of hate-based and civil rights organizations.

Segregationist voting. We gather electoral outcomes by county for state-level elections from 1920 to 1972 in the Deep South, where elections often centered around topics related to racial segregation. The data are obtained from [Heard and Strong \(2006\)](#) and [Bartley and Graham \(2006\)](#), which include county level vote shares for various types of elections, including Attorney General, Governor, Lieutenant Governor, National Committeeman, National Convention, President, and Senators.

Classifying politicians according to their stance on segregation and civil rights poses a significant challenge. Unlike the case of the Gubernatorial elections of Georgia, which we discuss in Appendix D, only few candidates were *openly* supported by the KKK. This testifies to the fact that a significant amount of Klan activity took place “behind closed doors” and a direct affiliation could hamper the electoral success of politicians. More generally, there currently exists no database or measure that would enable the classification of candidates’ stances on civil rights in a specific election.

To address this issue, we collect data on the outcomes of public referendums related to segregation and civil rights at the county level. These referendums typically involved constitutional amendments and were divided into two categories: those related to school desegregation and those related to voter disenfranchisement laws. By using public votes as a proxy for revealed preferences regarding civil rights at the county level, we identify the counties that were the most progressive or segregationist leaning in each state. In a second step, we classify politicians who performed relatively well in these progressive or segregationist-leaning counties, i.e., those who won a higher vote share in these counties compared to the state-level average, as either progressive or segregationist, respectively.

Racial segregation. We gather data about actual segregation in accommodation and services for African Americans using the *Negro Motorist Green Books* (or Green Books), a series of travel guides published during the Jim Crow era providing lists of non-discriminatory services to

African Americans. These include formal and informal accommodation, gas stations, restaurants and bars, barber shops and beauty parlors, and other types of services, such as pharmacies and facilities for entertainment and recreation. We use the number of establishments in a county using the data provided by [Cook et al. \(2023\)](#), which include county-level panel data based on the geo-locations of over 4,000 businesses between 1939 and 1955.

Hate-based versus civil rights organizations. We focus on two types of organizations capturing social mobilization towards hate and intolerance, and social mobilization in favor of civil rights. First, we focus on the presence of the KKK. We collect county-level presence of KKK using three separate sources. First, [Kneebone and Torres \(2015\)](#) provides a list of KKK chapters active during the Second KKK (1919–1942), including the date in which the chapter first appeared. Second, we digitized the list of chapters provided by the [Committee on Un-American Activities \(1967\)](#), which includes a survey of KKK activity in 1965. This source is also used in [Mazumder \(2018\)](#). Third, we obtain the location of KKK chapters in the period 2000–2020 from the [Southern Poverty Law Center \(2023\)](#), which provides an annual census of hate groups operating in the U.S.

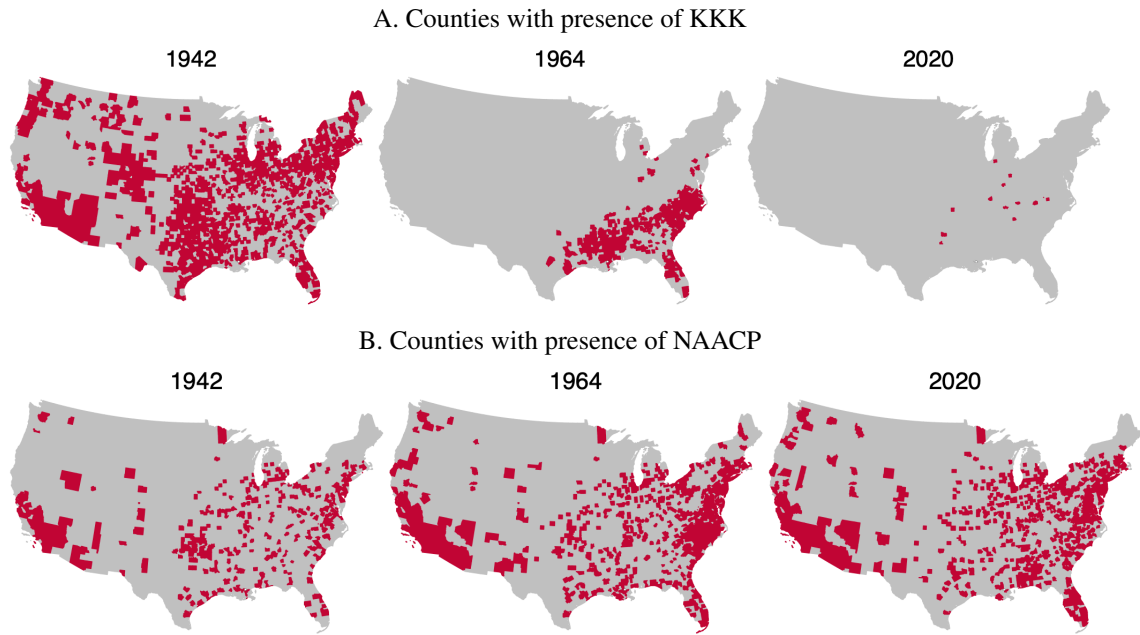
Second, we focus on the presence of the National Association for the Advancement of Colored People (NAACP). It is the most prominent civil rights organization in the US, promoting the rights of African Americans and other marginalized communities. It provides advocacy, litigation, and grassroots mobilization to address the four main issues related to civil rights: racial discrimination, voter suppression, criminal justice, and equality of access to education. Founded in 1909, the organization experienced significant growth in the early 20th century, reaching nearly 400 chapters in 1920, followed by a decline in the 1920s and a gradual rebuilding in the 1930s. Membership surged again during the civil rights movement, surpassing 1,000 branch organizations. The organisation further continued to grow throughout the 1960s and remains active.

We compute county-level presence of NAACP using two separate sources. First, we obtain the location of NAACP chapters for the period 1912–1977 from the project *Mapping American Social Movements Through the 20th Century* at the University of Washington, which provides the location of chapters in this period built using historical reports from the NAACP. Second, we digitized the presence of NAACP in 2011 and the present using a comprehensive list of branches for adults in 2011 and web-scraping.¹⁶ Figure 7 shows the geographical distribution of counties in

¹⁶Web-scraping is performed in May 2023, we assign the year 2020 to this source as we match with branch identifiers used in NAACP accounting data for 2020. Currently, the NAACP is open at multiple levels through state conferences, branches for adults, branches for youth, branches for prisoners, and branches in universities. We collected addresses of

which the KKK and NAACP chapters are present over three distinct years. Appendix H provides descriptive statistics about the share of counties in which each group is found from the 1920s to nowadays. The KKK was present in 36.5% of counties throughout the U.S. in 1942, a share that decreased to 11.7% in 1964, and had almost disappeared in 2020 with only 25 active branches. In contrast, the NAACP was present in 12.3% of counties in 1942, in 22.4% in 1964, and in 22% in 2020.

Figure 3: Geographical distribution of hate-based and civil group organizations



Note. Panel A indicates the presence of KKK chapters in 1942, 1964 and 2020. Panel B indicates the presence of NAACP chapters in 1942, 1964, and 2023. Counties are highlighted if at least one chapter is active. A detailed description of data sources is provided in Section 3.3.

3.4 Attitudes and behavior in the target population

We gather data about attitudes and behavior for the population directly targeted by the broadcast, i.e., children and young adults. For attitudes, we collect information from the *American National Election Studies (ANES)*. ANES is a nationally-representative survey of voters conducted every two years during and after each U.S. presidential election. It collects information about public opinion, voter behavior, and political attitudes. We use data collected in the period 1964–1978.

We merge responses in the ANES surveys with exposure to the radio program using the date of

currently-active branches of NAACP by scraping all active NAACP websites, Google Maps locations, and the list of registered charities and non-profit organizations in the U.S. Internal Revenue Services database. We geo-located each active branch using the city reported in the address.

birth of the respondent and the county of the respondent.

We primarily focus on two types of attitudes. First, we examine racist political and intergroup attitudes. We measure this dimension using answers to whether the respondents are in favor of desegregation or support strict segregation, as well as their self-reported feelings towards African Americans. Second, we focus on attitudes towards the Civil Rights Movement. We capture this dimension by analyzing the respondents' self-reported feelings towards civil rights leaders. Appendix Figure E12 presents a breakdown of support for strict segregation by survey wave and age cohort. Support for segregationist policies consistently decreases with respondents' age and over time. While 17% of the 20–29 age group still support segregation in 1964, this number drops to 3% by 1978. For the oldest age group – 70 years and older – support decreases from 33% to 10% in the respective years.

To study impacts on behavior, we shift our focus to the participation in one of the most important events for the generation born in the 1940s – the Vietnam War. Because individual level information on origin and deployment is not publicly available, we use casualties as a proxy for participation. This approach assumes that among those mobilized, being wounded or dying (versus not) was largely random. This aligns with [Esposito et al. \(2023\)](#), who uses casualties during World War I. Importantly, participation in the Vietnam War is primarily characterized by volunteers. Only 25% of those who served in Vietnam were draftees, compared to 66% during WWII. Notably 70% of casualties were volunteers ([Davidson, 1988](#)).¹⁷

To compute casualties, we obtain data about the date and the hometown of each individual from the *Defense Casualty Analysis System (DCAS)* database. The database is compiled by the U.S. Department of Defense and provides records documenting the deaths of U.S. military officers and soldiers resulting from hostile or non-hostile occurrences in the Korean War, Vietnam War, Gulf War, the War on Terrorism, and (beginning in 1975) casualties classified as occurring during peacetime, and they include deaths caused by accidents or illnesses. These records contain many details such as the service member's name, rank, gender, date of birth, hometown, marital status, religion, race, casualty circumstances, unit, duty, date of death, and information regarding the

¹⁷Eligible men aged 17 or older had the option to volunteer, provided they had parental consent if they were under the age of 18. Alternatively, when men reached the age of 18, they were obligated to report to their local draft board. Depending on their classification as 'available for service' and their successful completion of a pre-induction test, they could be ordered to report for duty. Those classified as available for service had the choice to volunteer, allowing them to select the service branch and serving for a shorter period. Draftees were typically assigned to the Army and served for up to three years ([Card and Lemieux, 2001](#)).

conflict and incident in which the casualty occurred.¹⁸

In total, we observe 57,241 casualties during the conflict in Vietnam, 86.5% represented by white soldiers, and 12.6% by African American soldiers. Because the probability of death during each conflict is cohort-specific (see Appendix F), we compute as the main outcome variable the cohort-specific share of deaths from each county. This is defined as:

$$(2) \quad Y_{hc} = \frac{casualties_{hc}}{casualties_h}$$

where $casualties_{hc}$ is the number of casualties in cohort h (defined in time-spans from the start of the broadcast) in county c and $casualties_h$ is the total number of casualties in cohort h . Further descriptive statistics about this data source are provided in Appendix F.

4 Empirical approach

The aim of the paper is to identify the causal effects of the episodes of *The Adventures of Superman* broadcast in 1946 on a variety of outcomes. We measure exposure to the program as the share of each county covered by the signal of the MBS radio network in 1946, labelled as R_c^{1946} . For the analysis, we use the county-level administrative division of the U.S. in 1946. In line with the previous literature on the effect of mass media (see, e.g., Olken, 2009), this measure is similar to an *intention-to-treat* exposure because it captures the probability of listening to the radio program, rather than the actual exposure (which is unobservable in this context).

To identify the causal effect of the radio show, we face two main challenges. First, as discussed in Section 3.1, when radio broadcasts are characterized by AM transmissions, we cannot rely uniquely on local topographic variation as a random determinant of signal reception – a widely used approach in the literature for FM and TV broadcasting (Enikolopov et al., 2011; Yanagizawa-Drott, 2014; Olken, 2009; Adena et al., 2015; DellaVigna et al., 2014). Second, while most of the literature focuses on the effect of radio broadcast, we are aiming at estimating the effect of a change in the content of an existing radio program.

To address these challenges, we compare multiple cohorts or multiple time periods. Identification relies on two important assumptions. First, focusing on multiple cohorts or multiple

¹⁸Concerning the location of birth, the dataset provides the *home of record* address, i.e., the place recorded as the home of the individual when commissioned, appointed, enlisted, inducted or ordered on active duty.

time periods, we assume that, conditional on local administrative unit fixed effects, the variation in radio coverage derived from the model described in Section 3.1 is quasi-random with respect to the temporal evolution of idiosyncratic (unobservable) determinants of the outcomes studied in this research. This means that areas covered by the MBS network and areas not covered by the MBS network in 1946 behave similarly over time. Second, the radio network of MBS in 1946 is very specific to that year. Radio networks in the U.S. expanded and changed significantly in the 1940s, and MBS represents only one of the networks active in the country. The number of AM stations increased 2.5 times in the 1940s, from 847 in 1940 to 2,144 in 1950 (US Bureau of the Census, 1975). In addition, the 1950s witnessed the beginning of the expansion of TV, which substantially reduced the centrality of radio as a mass medium over time (Gentzkow, 2006). In 1950, penetration of TV in the U.S. was 9%, by 1959, it had reached 86% (Allen and Thompson, 2023).

We rely on two complementary approaches to capture the causal effect. The first, which uses county-level (panel data), captures both the effect of *The Adventures of Superman* and the more general content broadcast by MBS in 1946. The second aims instead at disentangling the role of *The Adventures of Superman* from the general radio coverage in 1946 using individual- or cohort-level observations.

The first approach relies on panel data at the county level using a (dynamic) difference-in-differences (DiD) specification. This approach compares counties covered by the signal of MBS in 1946 with counties not covered in relative time as compared to 1946. We estimate the following specification:

$$(3) \quad Y_{c,t} = \sum_{\tau=-a}^a \gamma_{\tau} T_{\tau} \cdot R_c^{1946} + \mu_c + \mu_t + \epsilon_{c,t}$$

where $Y_{c,t}$ is the outcome variable for county c at time t , T_{τ} is an indicator variable if the observation refers to time $t = \tau$, and μ_c, μ_t are county and year fixed effects, respectively. The error term $\epsilon_{c,t}$ is assumed to be clustered at county level. Note that all the units treated by the radio signal are treated at the same time, which makes our case immune to problems associated with heterogeneity in the dynamic treatment effects in staggered designs (Roth et al., 2023).

The second approach is a cohort-study specification. This approach compares, at different ages in 1946, children (or cohorts) living in areas covered by the radio signal with children (or

cohorts) living in areas not covered. The assumption behind this specification is that children in the age group targeted by the program could have listened to the Superman episodes, while individuals too old or too young or not born, would have not been exposed directly to the episodes. In this approach, we estimate the following specification:

$$(4) \quad Y_{ihc,t} = \sum_{\tau=-a}^a \gamma_{\tau} D_{\tau} \cdot R_c^{1946} + X'_{ihc,t} \lambda + \mu_h + \mu_c + \mu_t + \epsilon_{ihc,t}$$

where $Y_{ihc,t}$ is the outcome variable for individual i of cohort h (relative to 1946) born in county c and interviewed at time t , and D_{τ} is an indicator variable if individual i is from cohort $h = \tau$. $X'_{ihc,t}$ is a set of individual- or cohort-specific characteristics. μ_h , μ_c , μ_t are cohort, county, and time fixed effects, respectively. When the number of observations within each county is too small, we replace μ_c with state fixed effects. In addition, when data at the individual level are unavailable, for instance, in the case of variable measuring participation in the Vietnam war, we use a county-level outcome variable ($Y_{hc,t}$). The error term $\epsilon_{ihc,t}$ is assumed to be clustered at individual or cohort level.¹⁹

5 Results

5.1 Radio broadcasting and public discourse

As documented in Section 2.2, the year 1946 witnessed a sudden and radical change in radio programming targeted at children and young adults, implemented by one of the largest contemporary broadcasting networks. Qualitative evidence reveals that the impact of this new broadcasting policy extended far beyond its target audience. Notably, the producers of the show garnered attention from various quarters, including President Truman, underscoring the wide-ranging implications and the potential of the program to put certain topics prominently on the media agenda and, therefore, directly influencing the public discourse.

We provide quantitative evidence for this point by looking at the effect of the broadcast on public discourse in local newspapers. Figure 4 shows estimates of the effect on the salience on newspapers of the program (Panel A) and of intolerance (Panel B) using equation (3) with

¹⁹Results are robust to assuming spatial correlation using the Conley-Hsiang correction (Conley, 1999; Hsiang, 2010).

monthly-level observations at the newspaper level and using newspaper-specific fixed effects. This approach compares the salience of topics in local newspapers across areas covered and not covered by the signal in 1946, before and after the launch of Operation Intolerance.

Figure 4 shows that prior to the launch of the revised story arc targeting intolerance, topics associated with superman or intolerance were no more salient in areas covered by the radio signal in 1946 than areas not covered. This changes after April 1946, when the first episode of Operation Intolerance was launched. While Superman becomes slightly more salient post the relevant episodes, topics related to intolerance experience a large increase in salience that lasts until March 1946. Local newspapers, headquartered in areas covered by the program, show a relative increase in the number of pages containing articles related to the KKK.

Comparing the year before with the year after the programming change, we estimate that newspapers publish roughly one additional article about the Klan every two months, which is equivalent to an increase of 7.2% in salience. While radio broadcasting was dominated by a limited number of national networks, local newspapers served as a primary source of news with a stronger focus on local issues. Our results indicate that the program not only influenced the listeners directly through a change in its content but also influenced public opinion more generally throughout 1946 and 1947. In line with the framework of agenda setting (e.g., [McCombs et al., 2014](#)), the series potentially had a significant impact on the conversations within the heart of American society, way beyond its initial target audience.

5.2 Social mobilization and collective action

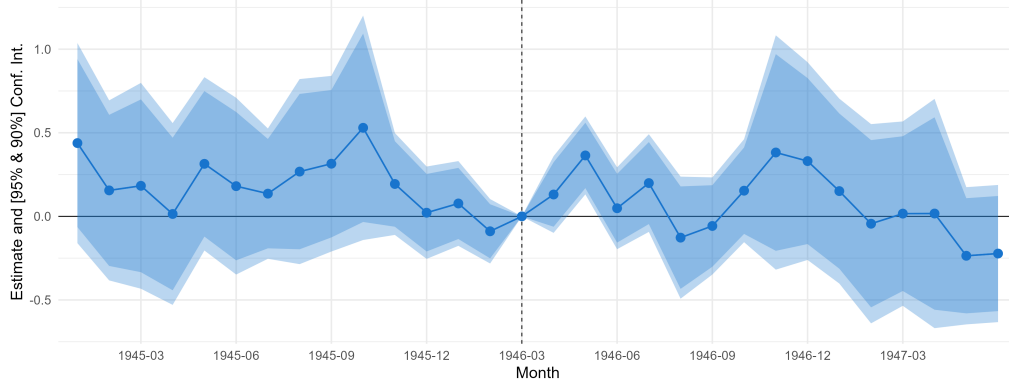
In this section, we focus on three dimensions of social mobilization and collective action. First, in Section 5.2.1, we examine the effects on voting behavior, specifically focusing on support for segregationist or desegregationist leaders. Second, in Section 5.2.2, we discuss the effects on racial segregation in the provision of services and two important forms of grassroots mobilization, the formation of hate-based and of civil rights groups.

5.2.1 Segregationist voting in the Deep South

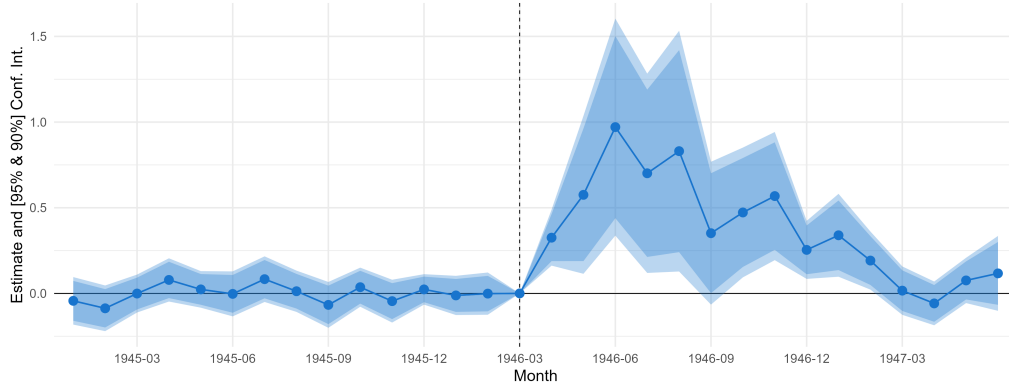
This Section focuses on collective action related to the Civil Rights Movement in the form of voting for pro- or anti-segregation leaders in the Southern states of the country, where segregation

Figure 4: Effect on public discourse in local newspapers

A. Salience of *The Adventures of Superman*



B. Salience of intolerance



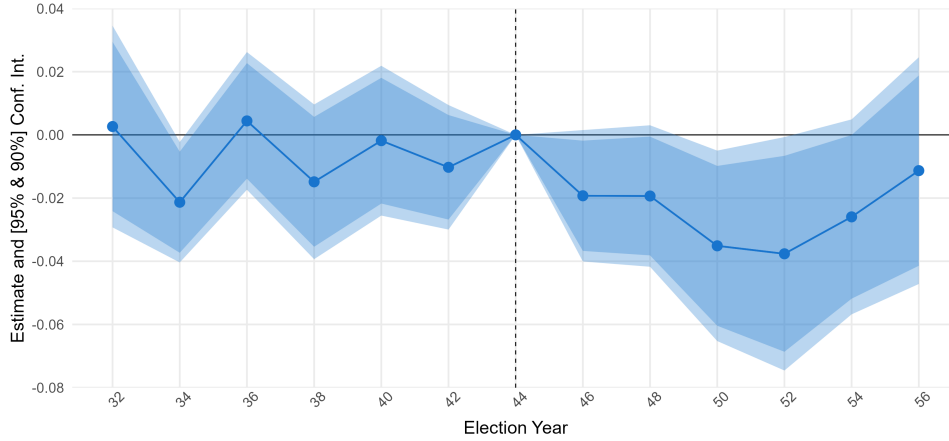
Note. Estimates based on equation (3) at the level of newspapers and using newspaper-specific fixed effects. In Panel A, the dependent variable is the share of pages containing at least one reference to Superman. In Panel B, the dependent variable is the share of pages containing at least one reference to KKK and related words. Details about the measurement are provided in Section 3.2. The vertical line indicates the beginning of Operation Intolerance with the broadcast of the episodes of *The Hatemongers Organisation*.

was enforced by law in the 1940s. Figure 5 shows estimates of the effect of the broadcast on the voting share of segregationist candidates by pooling four Southern states: Georgia, Louisiana, North Carolina and Texas. We use the full set of county-level election outcomes, including the elections for the Senate, Governors, Lieutenant Governor, National Committeeman and the Presidential elections. We estimate effects using equation (3) and include state-by-year fixed effects to purge time-varying state-level unobservable characteristics.

The broadcast led to a decrease in the vote share for candidates favoring segregation for the elections following the broadcast in 1946. The magnitude of the effect is 2 percentage points. The reduction increases until the elections in 1952, when the magnitude of the effect is 4 percentage points, and reverts to zero by 1956. For the elections prior to the broadcast, we do not observe any

significant difference between counties covered by the broadcast in 1946 and counties not covered.

Figure 5: The effect on segregationist voting in the Deep South



Note. Estimates based on equation (3) including state-by-year fixed effects. The dependent variable is the vote share of the segregationist candidate across all elections. Segregationist candidates are classified using the data-driven approach described in Section 3.3. The shaded areas indicate the confidence intervals at the 10% and 5% confidence levels. The vertical line indicates the beginning of Operation Intolerance.

While using our politician classification approach allows us to identify a generalized pattern in the voting shares in the Deep South, we examine a smaller set of elections in which a candidate was openly supporting and supported by the KKK to evaluate this mechanism more directly. In particular, in Appendix D, we focus on the case of Gubernatorial elections in Georgia. These elections are of special interest for our analysis because of two specific features. First, one of the candidates for the 1946 elections, Eugene Talmadge, was not only an active promoter of segregation and white supremacy, but he was also openly supported by the KKK (Wexler, 2004). Second, before the 1946 elections, Talmadge ran successfully in several campaigns for Georgia’s Governor (1932, 1934, and 1940) before ultimately losing in 1942. Running again in 1946, shortly after the beginning of Operation Intolerance, Talmadge lost the popular vote in the Democratic primary to the progressive candidate James V. Carmichael, but won a majority of the “county unit votes”, and therefore the Governor’s office. He died in December 1946, before he could be sworn in for his fourth term. After his death, his son, Herman Talmadge, took up his father’s political legacy. With similar racist policies and postures, he became the main defender of racial segregation in Georgia.

This historical case allows us to assign a candidate to the segregationist category with confidence for a number of elections before and after the broadcast, as well as classify their challengers as being more progressive. Appendix D shows estimates of the effect of the broadcast on the vote share for Talmadge (and his son) in the Gubernatorial elections in Georgia. Estimates indicate a

significant decrease in the vote share of Talmadge and his son by 5 percentage points during the 1946 elections and by 4 percentage points in the 1948 elections. Before 1946, there is no significant difference in the vote shares between counties covered and not covered by the broadcast. In addition, Georgia’s Gubernatorial elections also serve as validation for our data-driven approach to classify candidates as segregationists or not. Appendix Figure D11 shows that our results for Georgia’s elections hold under the alternative data-driven classification strategy.²⁰

5.2.2 Racial segregation and the proliferation of hate-based versus civil rights groups

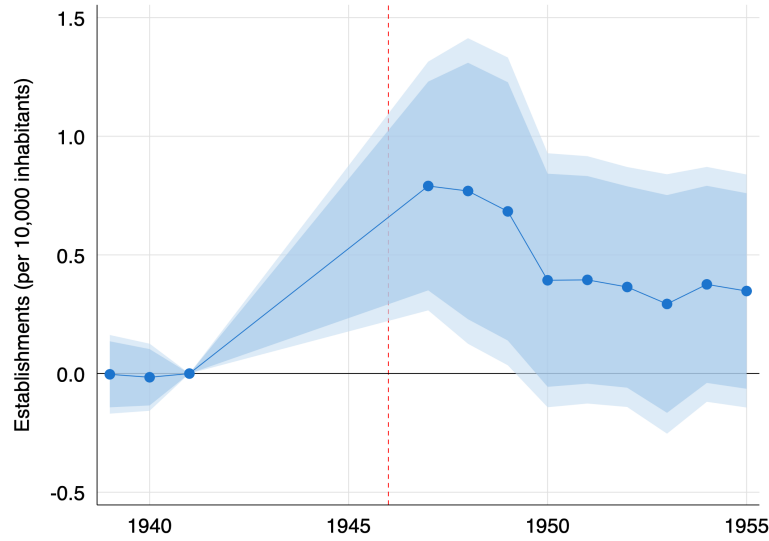
Figure 6 shows estimates of the effect of the broadcast on racial segregation. We consider the total number of establishments in the Green Books including all types of establishments, including formal and informal accommodation, restaurants and bars, barber shops and beauty parlors, gas stations, and other types of services, such as pharmacies and facilities for entertainment and recreation. Estimates are based on equation (3) using all available data points in the dataset (1939–1941 in the pre-broadcast period, and 1947–1955 in the post-broadcast period). The number of establishments is normalized by the population in the county using a factor of 10,000 inhabitants. Population is based on the 1940 and 1950 U.S. censuses.

We observe a significant increase of 0.79 establishments per 10,000 inhabitant in 1947. This effect reduces over time, become statistically insignificant in 1950 and reaches a magnitude of 0.35 in 1955. The magnitude of this effect is large: in the period 1947–1949, the number of establishments in areas covered by the broadcasts increases by 68 to 77% as compared to the average number of establishments in the corresponding period in areas not covered (1.03 establishments per 10,000 inhabitants).

In Appendix Figure H19, we further distinguish between two categories of establishments by the degree of segregation they represent. The first is segregation in accommodation, which represented the more extreme form of segregation. Restrictions in this sector implied that African American travelers often had to rely on inferior lodging establishments designated for African Americans. The other category of services represent a (relatively) less extreme form of segre-

²⁰Appendix I shows that the show also influenced presidential elections. Individuals exposed during youth to the show have a higher chance to report having voted for the Democratic candidate during the elections of 1968, 1972 and 1976 (when everybody born after 1946 became eligible to vote). During these elections, the Democratic candidates had a more progressive agenda concerning civil rights. The effect is significant at almost 20 percentage points for the cohort aged 16–20 in 1946.

Figure 6: The effect on racial segregation in the provision of services



Note. Estimates based on equation (3) including county and state by year fixed effects. The dependent variable is the county-level total number of establishments with non-discriminatory services to African Americans as included in the Green Books. Data are described in Cook et al. (2023). The number of establishments is normalized by 10,000 inhabitants. We consider all types of services: formal and informal accommodation, restaurants and bars, barber shops and beauty parlors, gas stations, and other types of services, such as pharmacies and facilities for entertainment and recreation. The shaded areas indicate the confidence intervals at the 10% and 5% confidence levels. The vertical line indicates the beginning of Operation Intolerance. Refer to Section 3.3 for further details about data.

gation. Appendix Figure H19 shows estimates of the effect of the broadcast on the number of establishments separately for each category. The effect on racial segregation is primarily driven by increases in the number of restaurants and bars, of barber shops, and of other establishments. For all these services, the effect remains significant for most of the period 1947–1955. In contrast, we do not observe any significant effect in the number of establishments offering accommodation, and we observe only a short run effect. These results highlight that the broadcast was very effective at reducing racial segregation, but primarily in services unrelated to accommodation.

Next we examine effects on the proliferation of hate-based and civil rights groups. While we focus on the the presence of civil rights groups, for the ease of comparison, we focus on the absence of hate-based groups. Figure 7 shows estimates of the effect of the broadcast on the share of counties in which hate-based groups, proxied by KKK chapters, are absent (Panel A), and on the share of counties in which civil rights groups, proxied by NAACP chapters, are present (Panel B). Estimates are based on equation (3), thus comparing over time counties covered and not covered by the broadcast in 1946. Because data are built from alternative data sources (see Section 3.3), we consider different data points depending on data availability and variation within the time span.

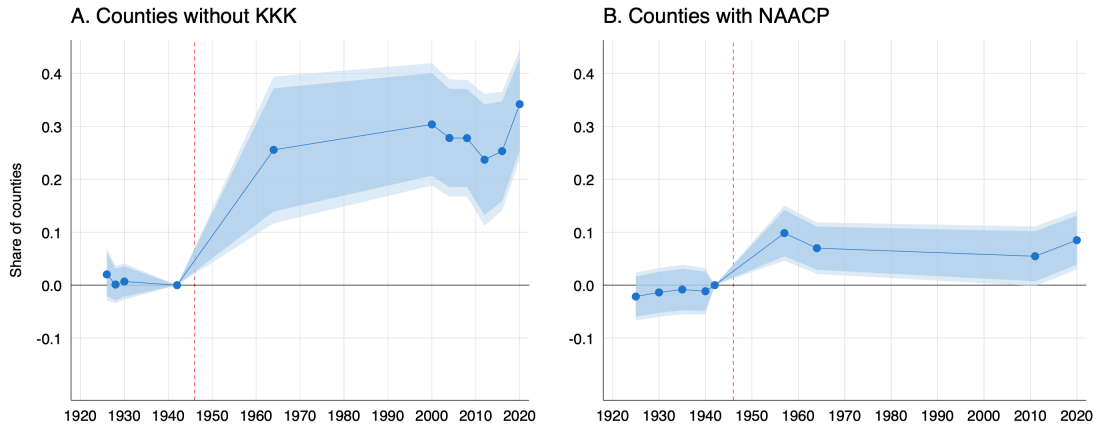
For KKK, we consider presence in the pre-broadcast period, during the spread, and at the end of second KKK (1926, 1928, 1930, and 1942), and for available data points during the post-broadcast (1964, 2000, 2004, 2008, 2012, 2016, 2020). For the analysis we focus on the presence of KKK in Southern states due to the presence of KKK after WW-II (Figure 7). For NAACP, we consider presence in the pre-WWII period considering 5-year intervals (1925, 1930, 1935, 1940), in the last measurement before the launch of Operation Intolerance (1942, used as reference year), and for available data points in the post-Operation Intolerance period (1958, 1964, 2011 and 2020).

The broadcast leads to a significant reduction in the presence of KKK in Southern states by 25.6 percentage points in 1964. This effect is not only persistent over time, but it increases. In 2020, 74 years after the broadcast of *The Adventures of Superman* in 1946, the share of counties without KKK chapters is more than 34.2 percentage points higher in areas that were covered by the broadcast compared to areas that were not covered.²¹ In the period before the launch of Operation-Intolerance, we do not observe any significant difference between these areas.

A similar pattern is observed for NAACP. Counties covered by the broadcast in 1946 have an increased probability of having a NAACP chapter by 9.8 percentage points in 1957, and by 7.0 percentage points in 1964. Similar to hate-based groups, the effects in the late 1950s and early 1960s are persistent over time. In 2020, we observe that the presence of NAACP is 8.5 percentage points larger in counties that were covered by the broadcast in 1946. Again, we observe no significant difference in the period before the launch of Operation Intolerance. If any, areas covered by the broadcast in 1946 tend to have a lower probability of having a NAACP chapter in the pre-broadcast period.

²¹For the period post-2020, we consider only groups with ideology linked to KKK. Expanding the definition of hate-based groups in that period by including groups with related ideologies to KKK, such as white nationalism or neo-confederatism, does not change our conclusions.

Figure 7: The effect on the presence of hate-based versus civil rights groups



Note. Estimates based on equation (3) including county and state by year fixed effects. Dependent variables are 0-1 indicator variables for the absence of KKK branches or the presence of at least one NAACP branch in the county in the corresponding period. In Panel A, the sample is restricted to Southern states. The shaded areas indicates the confidence intervals at the 10% and 5% confidence levels. The vertical line indicates the beginning of Operation Intolerance. Presence of KKK and NAACP is built using multiple data sources described in Section 3.3.

5.3 Attitudes and behavior in the target population

Attitudes We begin by studying whether the broadcast in 1946 had persistent effects on its listeners by focusing on changes in attitudes measured in different waves from 1949 to 1976 in a nationally-representative sample of the U.S. population. Using equation (4), controlling for income, gender, education, age at the time of the interview and for survey-wave fixed effects, we compare responses across individuals interviewed at different points in time, but with a similar age in 1946 and a different exposure to the radio broadcast. To control for unobserved time trends at the state level, we additionally include state \times year fixed effects. We thus exploit within state variation across counties and age cohorts.

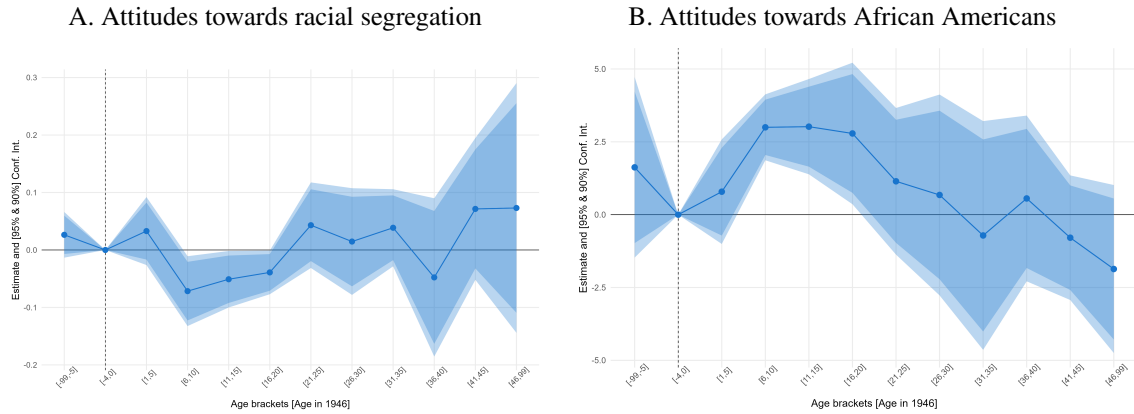
Figure 8 shows the effect of the broadcast on attitudes towards racism. Panel A focuses on agreement with racial segregation using a scale ranging from 1 to 3, where 1 indicates agreement with desegregation and 3 agreement with strict segregation. We observe a significant decrease in agreement with strict racial segregation only for individuals who were in the age range targeted by the broadcast (6–20 years old) in 1946.

The magnitude of the effect is a reduction of 0.072 points for individuals aged 6–10 in 1946, 0.051 points for individuals aged 11–15, and 0.039 points for individuals aged 16–20. On the other hand, we do not observe any significant effect for individuals who were either too old to

be targeted by the program, or who were too young to have listened to it (1–5 years old), or unborn at the time of the broadcast.

Next, Panel B shows the effects on self-reported feelings towards African Americans on a scale of 0–100, in which 0 indicates the most negative feeling and 100 indicates the most positive feeling.²² Similar to attitudes towards racial segregation, the broadcast increases positive feelings towards African Americans in the cohorts targeted by the program. Again, we only observe a significant increase for the target age groups of 6–20. Evaluated at the sample mean, exposure to the broadcast is associated with an increase of 4.7% in scale points amongst individuals of this group.

Figure 8: Attitudes towards racism



Note. Estimates based equation (4) controlling for income, gender, education, age at the time of the interview, survey-wave fixed effects, and state times year fixed. In Panel A, the dependent variable ranges from 1 to 3 (1 = desegregation, 2 = somewhere in between, 3 = strict segregation). In Panel B, the dependent variable is the reported feeling towards African Americans using a 0–100 scale (0 = negative, 100 = positive). The shaded areas indicates the confidence intervals at the 10% and 5% confidence levels. The vertical line indicates the beginning of Operation Intolerance. Further details about the data are reported in Section 3.4.

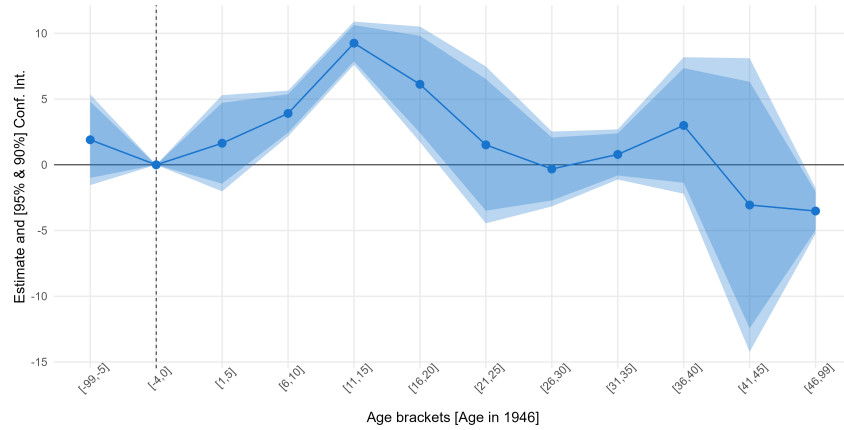
Figure 9 shows the effect of the broadcast on attitudes towards civil rights leaders. This is again measured through self-reported feelings on a scale of 0–100, where 0 indicates the most negative feeling and 100 indicates the most positive feeling. Again, we observe a significant increase in positive feelings only among individuals that were targeted by the program. For the age cohorts 6–20, we find an average effect of 6.4 additional points.

These results indicate that exposure to the broadcast had a significant effect among its listeners. Attitudes come to reflect the message implicit in the episodes of *The Adventures of Superman* in 1946 – themes of tolerance, intolerance, and social movements promoting civil rights all be-

²²In the paper, we refer to this category as African American. In most surveys at the time, questions refer instead to people of “Black race”.

came more prevalent among listeners. Importantly, this effect is persistent as we can detect effects on attitudes up to 20 years after the broadcast, when respondents have reached adulthood.

Figure 9: Attitudes towards the civil rights movement



Note. Estimates based equation (4) controlling for income, gender, education, age at the time of the interview, survey-wave fixed effects, and state times year fixed. The dependent variable is the reported feeling towards civil rights leaders using a 0-100 scale (0 = negative, 100 = positive). The shaded areas indicates the confidence intervals at the 10% and 5% confidence levels. The vertical line indicates the beginning of Operation Intolerance. Further details about the data are reported in Section 3.4.

Vietnam war participation A persistent change in attitudes among individuals that were targeted by the program towards more pro-civil rights attitudes should transform into behavioral change. To test this channel, we investigate participation in the Vietnam War, possibly the most polarizing event for the generation born in the 1940s (see Section 2 for a discussion on the relationship between the war and the Civil Rights Movement).

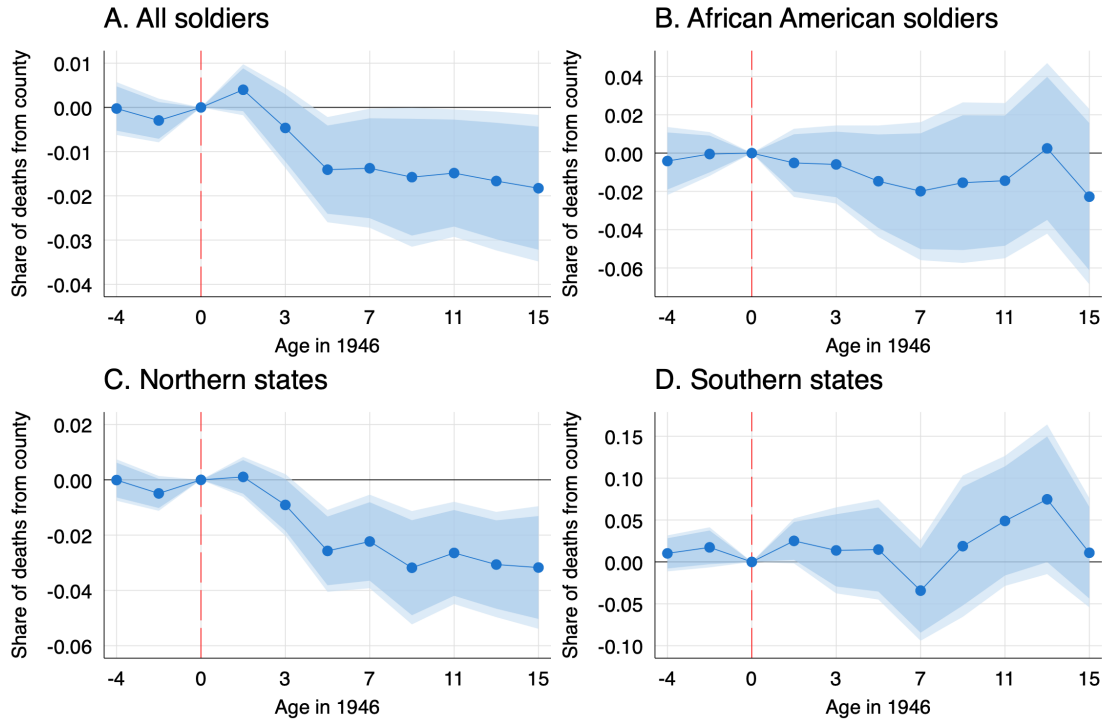
Figure 10 shows estimates of the effect of the broadcast on participation using equation (4). For each cohort, defined as age groups in 1946, we compare the share of casualties (multiplied by 100) attributed to counties covered by the broadcast in 1946 versus the share of casualties attributed to counties not covered. Panel A includes the sample of all soldiers, Panel B restricts the sample to African American soldiers, Panel C restricts the sample to Northern states, and Panel D restricts the sample to Southern states.²³

The broadcast leads to a significant reduction in the participation in the Vietnam war for the cohorts targeted by the broadcast. We observe a reduction in participation of 0.02 percentage points starting for individuals that were 4 years old or older in 1946, while we do not observe any significant effect on younger individuals or on those that were not born in 1946 (Panel A).

²³We do not observe casualties in the age groups beyond 15 in 1946.

Restricting the sample to African American soldiers (Panel B), we do not observe any significant effect, showing that the effect observed in Panel A is specific to white individuals, the group primarily targeted by the broadcast. In line, the effect is primarily driven by individuals from Northern states, for whom we observe effects up to 0.04 percentage points, rather than Southern states, for whom we do not observe any significant effect.

Figure 10: Effect on the participation in the Vietnam war



Note. Estimates based on equation (4). The dependent variable is the within-cohort share of deaths from a county (multiplied by 100). Panel A includes all soldiers, Panel B restricts the sample to African American soldiers, Panel C restricts the sample to Northern states, and Panel D restricts the sample to Southern State. Southern states include Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, Missouri, North Carolina, South Carolina, Tennessee, Virginia, West Virginia and Texas. The shaded areas indicates the confidence intervals at the 10% and 5% confidence levels. The vertical line indicates the cohort born when Operation Intolerance was launched. Additional information about the data is provided in Section 3.

Overall, these results indicate that the broadcast resulted in significant behavioral changes in line with the effect on attitudes, highlighting that promoting equality and civil rights among children in 1946 translated not only in more pro-civil rights attitudes in that generation, but also in a lower participation in a conflict closely tied with the rise of the Civil Rights Movement.

6 Conclusion

The oppressive and abhorrent practice of slavery was abolished in 1865. However, racist attitudes and intolerance towards African Americans have persisted. Minority communities elsewhere in the world also face similar prejudice. Racist depictions of minorities in films and popular media during the 20th century have often worsened these discriminatory attitudes ([Ang, 2023](#)). The relentless march of hatred towards minorities has been hastened by the spread of social media in the 21st century ([Bursztn et al., 2019](#); [Müller and Schwarz, 2020, 2021](#)). This paper shows that media can itself provide an antidote to such venom.

We show how a radio-based intervention on the nationwide scale in the 1940s US provides insights on how we can combat racist and intolerant attitudes, in addition to influencing behavioral changes. In particular, exploiting a remarkable experiment that used the popular children’s radio program “The Adventures of Superman,” to inculcate tolerant attitudes, we uncover evidence that targeting children can be an effective way of combating intolerance. In addition to changing behavior and attitudes in the short run, the positive effects of the intervention persisted years later.

References

- Adena, M., R. Enikolopov, M. Petrova, V. Santarosa, and E. Zhuravskaya (2015). Radio and the rise of the nazis in prewar germany. *The Quarterly Journal of Economics* 130(4), 1885–1939.
- Allen, S. and R. J. Thompson (2023). Television in the united states. Encyclopedia Britannica. Accessed on 6 June 2023.
- Allport, G. W. (1954). The nature of prejudice.
- Alsan, M. and M. Wanamaker (2018). Tuskegee and the health of black men. *The quarterly journal of economics* 133(1), 407–455.
- Anderson, J. Q. (2005). *Imagining the Internet: Personalities, predictions, perspectives*. Rowman & Littlefield.
- Ang, D. (2021). The effects of police violence on inner-city students. *The Quarterly Journal of Economics* 136(1), 115–168.
- Ang, D. (2023, June). The birth of a nation: Media and racial hate. *American Economic Review* 113(6), 1424–60.
- Armand, A., P. Atwell, and J. F. Gomes (2020). The reach of radio: Ending civil conflict through rebel demobilization. *American economic review* 110(5), 1395–1429.
- Banerjee, A., S. Barnhardt, and E. Duflo (2015). Movies, margins, and marketing: Encouraging the adoption of iron-fortified salt. In *Insights in the Economics of Aging*, pp. 285–306. University of Chicago Press.
- Bartley, N. V. and H. D. Graham (2006). Southern primary and general election data, 1946-1972. Inter-university Consortium for Political and Social Research [distributor]. Retrieved on 2023-06-06 from <https://doi.org/10.3886/ICPSR00072.v1>.
- Bazzi, S., M. Fiszbein, and M. Gebresilas (2020). Frontier culture: The roots and persistence of “rugged individualism” in the united states. *Econometrica* 88(6), 2329–2368.
- Beach, B. and W. W. Hanlon (2022). Historical newspaper data: A researcher’s guide and toolkit. Working Paper 30135, National Bureau of Economic Research.
- Bertrand, M. and E. Duflo (2017). Field experiments on discrimination. *Handbook of economic field experiments* 1, 309–393.
- Blouin, A. and S. W. Mukand (2019). Erasing ethnicity? propaganda, nation building, and identity in rwanda. *Journal of Political Economy* 127(3), 1008–1062.
- Bor, J., A. S. Venkataramani, D. R. Williams, and A. C. Tsai (2018). Police killings and their spillover effects on the mental health of black americans: a population-based, quasi-experimental study. *The Lancet* 392(10144), 302–310.
- Bowers, R. (2012). *Superman versus the Ku Klux Klan: the true story of how the iconic superhero battled the men of hate*. National Geographic Books.
- Bursztyn, L. and D. Cantoni (2016). A tear in the iron curtain: The impact of western television on consumption behavior. *Review of Economics and Statistics* 98(1), 25–41.

- Bursztyn, L., G. Egorov, R. Enikolopov, and M. Petrova (2019). Social media and xenophobia: evidence from russia. Technical report, National Bureau of Economic Research.
- Campante, F., R. Durante, and A. Tesei (2022). Media and social capital. *Annual Review of Economics* 14, 69–91.
- Card, D. and T. Lemieux (2001, May). Going to college to avoid the draft: The unintended legacy of the vietnam war. *American Economic Review* 91(2), 97–102.
- Carlana, M. (2019). Implicit stereotypes: Evidence from teachers’ gender bias. *The Quarterly Journal of Economics* 134(3), 1163–1224.
- Chetty, R., N. Hendren, M. R. Jones, and S. R. Porter (2020). Race and economic opportunity in the united states: An intergenerational perspective. *The Quarterly Journal of Economics* 135(2), 711–783.
- Chong, A. and E. L. Ferrara (2009). Television and divorce: Evidence from brazilian novelas. *Journal of the European Economic Association* 7(2-3), 458–468.
- Committee on Un-American Activities (1967). *Present Day Ku Klux Klan Movement – Report by the U.S. Congress Committee on Un-American Activities, House of Representatives, Ninetieth Congress, First Session*. Washington DC: U.S. Government Printing Office.
- Conley, T. G. (1999). Gmm estimation with cross sectional dependence. *Journal of econometrics* 92(1), 1–45.
- Cook, L. D. et al. (2023, February). The evolution of access to public accommodations in the united states. *The Quarterly Journal of Economics* 138(1), 37–102.
- Crabtree, C. and H. L. Kern (2018). Using electromagnetic signal propagation models for radio and television broadcasts: An introduction. *Political Analysis* 26(3), 348–355.
- Craig, S. (2004). How america adopted radio: Demographic differences in set ownership reported in the 1930-1950 us censuses. *Journal of Broadcasting & Electronic Media* 48(2), 179–195.
- Davidson, P. (1988). *Vietnam At War: The History 1946-1975*. New York: Oxford University Press.
- DellaVigna, S., R. Enikolopov, V. Mironova, M. Petrova, and E. Zhuravskaya (2014). Cross-border media and nationalism: Evidence from serbian radio in croatia. *American Economic Journal: Applied Economics* 6(3), 103–132.
- DellaVigna, S. and E. La Ferrara (2015). Economic and social impacts of the media. In *Handbook of Media Economics*, Volume 1, pp. 723–768. Elsevier.
- Durante, R., P. Pinotti, and A. Tesei (2019). The political legacy of entertainment tv. *American Economic Review* 109(7), 2497–2530.
- Edwards, F., H. Lee, and M. Esposito (2019). Risk of being killed by police use of force in the united states by age, race–ethnicity, and sex. *Proceedings of the national academy of sciences* 116(34), 16793–16798.
- Enikolopov, R., M. Petrova, and E. Zhuravskaya (2011). Media and political persuasion: Evidence from russia. *American Economic Review* 101(7), 3253–3285.

- Equal Justice Initiative (2018). Segregation in america. Technical report, Equal Justice Initiative.
- Esposito, E., T. Rotesi, A. Saia, and M. Thoenig (2023). Reconciliation Narratives: “The Birth of a Nation” after the US Civil War. *American Economic Review* forthcoming.
- ETSI (2021). *Broadcast Sound Receivers; Part 2: AM broadcast sound service; Harmonised Standard for access to radio spectrum* (ETSI EN 303 345-2 V1.2.1 ed.).
- Fryer Jr, R. G. and S. D. Levitt (2012). Hatred and profits: Under the hood of the ku klux klan. *The Quarterly Journal of Economics* 127(4), 1883–1925.
- Gagliarducci, S., M. G. Onorato, F. Sobbrino, and G. Tabellini (2020). War of the waves: Radio and resistance during world war ii. *American Economic Journal: Applied Economics* 12(4), 1–38.
- Gentzkow, M. (2006). Television and voter turnout. *The Quarterly Journal of Economics* 121(3), 931–972.
- Gentzkow, M. and J. M. Shapiro (2008). Preschool television viewing and adolescent test scores: Historical evidence from the coleman study. *The Quarterly Journal of Economics* 123(1), 279–323.
- Glover, D., A. Pallais, and W. Pariente (2017). Discrimination as a self-fulfilling prophecy: Evidence from french grocery stores. *The Quarterly Journal of Economics* 132(3), 1219–1260.
- Harrison, B. T. (1996). Impact of the vietnam war on the civil rights movement in the midsixties. *Studies in Conflict & Terrorism* 19(3), 261–278.
- Heard, A. and D. S. Strong (2006). Southern primary and general election data, 1920-1949. Inter-university Consortium for Political and Social Research [distributor]. Retrieved on 2023-06-06 from <https://doi.org/10.3886/ICPSR00071.v1>.
- Hooper Inc. (1947). *Hooperatings Comprehensive - Summer, 1947*. New York: C.E. Hooper Inc. - Radio Audience Measurement.
- Hooper Inc. (1948). *Hooperatings Comprehensive - Summer, 1948*. New York: C.E. Hooper, Inc. - Radio Audience Measurement.
- Hooper Inc. (1949). *Hooperatings Comprehensive - Summer, 1949*. New York: C.E. Hooper Inc. - Radio Audience Measurement.
- Hsiang, S. M. (2010). Temperatures and cyclones strongly associated with economic production in the caribbean and central america. *Proceedings of the National Academy of sciences* 107(35), 15367–15372.
- Jensen, R. and E. Oster (2009). The power of TV: Cable television and women’s status in india. *The Quarterly Journal of Economics* 124(3), 1057–1094.
- Jha, S. (2013). Trade, institutions, and ethnic tolerance: Evidence from south asia. *American political Science review* 107(4), 806–832.
- Kearney, M. S. and P. B. Levine (2015). Media influences on social outcomes: The impact of mtv’s 16 and pregnant on teen childbearing. *American Economic Review* 105(12), 3597–3632.

- Kearney, M. S. and P. B. Levine (2019). Early childhood education by television: Lessons from sesame street. *American Economic Journal: Applied Economics* 11(1), 318–350.
- Kennedy, S. (2011). *The Klan Unmasked: With a New Introduction by David Pilgrim and a New Author's Note*. University of Alabama Press.
- King Encyclopedia (2018). Beyond vietnam. <https://kinginstitute.stanford.edu/encyclopedia/beyond-vietnam>. 07/06/2023.
- Kleinfeld, N. (1979, October). Fm's success is loud and clear. *New York Times*, 1.
- Kneebone, J. and S. Torres (2015, January). Data to support the 'mapping the second ku klux klan, 1919-1940' project. History Data.
- La Ferrara, E., A. Chong, and S. Duryea (2012). Soap operas and fertility: Evidence from brazil. *American Economic Journal: Applied Economics* 4(4), 1–31.
- Levitt, S. D. and S. J. Dubner (2005). *Freakonomics: A Rogue Economist Explores the Hidden Side of Everything* (1st ed.). New York, NY: William Morrow.
- Lucks, D. S. (2014). *Selma to Saigon: The Civil Rights Movement and the Vietnam War*. University Press of Kentucky.
- Mazumder, S. (2018). The persistent effect of us civil rights protests on political attitudes. *American Journal of Political Science* 62(4), 922–935.
- McCombs, M. E., D. L. Shaw, and D. H. Weaver (2014). New directions in agenda-setting theory and research. *Mass communication and society* 17(6), 781–802.
- McWhorter, D. (2001). *Carry me home: Birmingham, Alabama: The climactic battle of the civil rights revolution*. Simon and Schuster.
- Mickey, R. (2015). *Paths Out of Dixie: The Democratization of Authoritarian Enclaves in America's Deep South, 1944-1972*, Volume 147. Princeton University Press.
- Müller, K. and C. Schwarz (2020). From hashtag to hate crime: Twitter and anti-minority sentiment. *Available at SSRN* 3149103.
- Müller, K. and C. Schwarz (2021). Fanning the flames of hate: Social media and hate crime. *Journal of the European Economic Association* 19(4), 2131–2167.
- Olken, B. A. (2009). Do television and radio destroy social capital? evidence from indonesian villages. *American Economic Journal: Applied Economics* 1(4), 1–33.
- Paluck, E. L. (2009). Reducing intergroup prejudice and conflict using the media: a field experiment in rwanda. *Journal of personality and social psychology* 96(3), 574.
- Paluck, E. L. and D. P. Green (2009). Deference, dissent, and dispute resolution: An experimental intervention using mass media to change norms and behavior in rwanda. *American Political Science Review* 103(4), 622–644.
- Ravallion, M., D. Van De Walle, P. Dutta, and R. Murgai (2015). Empowering poor people through public information? lessons from a movie in rural india. *Journal of Public Economics* 132, 13–22.

- Reed, G. A. L. R. and K. F. Sander (1987). *Transmission and Propagation of Electromagnetic Waves*. Cambridge University Press.
- Riley, E. (2022). Role models in movies: the impact of queen of katwe on students' educational attainment. *Review of Economics and Statistics*, 1–48.
- Roth, J., P. H. Sant'Anna, A. Bilinski, and J. Poe (2023). What's trending in difference-in-differences? a synthesis of the recent econometrics literature. *Journal of Econometrics*.
- Satyanath, S., N. Voigtländer, and H.-J. Voth (2017). Bowling for fascism: Social capital and the rise of the nazi party. *Journal of Political Economy* 125(2), 478–526.
- Shapiro, H. (1989). The vietnam war and the american civil rights movement. *The Journal of Ethnic Studies* 16(4), 117.
- Southern Poverty Law Center (2023). Spic hate map. Accessed on May 24th 2023.
- Strömberg, D. (2004). Radio's impact on public spending. *The Quarterly Journal of Economics* 119(1), 189–221.
- Strömberg, D. (2015). Media and politics. *Annual Review of Economics* 7(1), 173–205.
- The Washington Post (2018). Shoot them for what? how Muhammad Ali won his greatest fight. <https://www.washingtonpost.com/news/retropolis/wp/2018/06/15/shoot-them-for-what-how-muhammad-ali-won-his-greatest-fight/>. 07/06/2023.
- US Bureau of the Census (1975). *Historical statistics of the United States, colonial times to 1970*. Number 78. US Department of Commerce, Bureau of the Census.
- Voigtländer, N. and H.-J. Voth (2012). Persecution perpetuated: the medieval origins of anti-semitic violence in nazi germany. *The Quarterly Journal of Economics* 127(3), 1339–1392.
- Wang, T. (2021). Media, pulpit, and populist persuasion: Evidence from father coughlin. *American Economic Review* 111(9), 3064–3092.
- Wexler, L. (2004). *Fire in a canebrake: The last mass lynching in America*. Simon and Schuster.
- Yanagizawa-Drott, D. (2014). Propaganda and conflict: Evidence from the rwandan genocide. *The Quarterly Journal of Economics* 129(4), 1947–1994.

ONLINE APPENDIX
Supplementary material to *The role of progressive radio on desegregation in the US*
 Alex Armand, Paul Atwell, Joseph Flavian Gomes, Yannik Schenk

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A Radio network in 1946

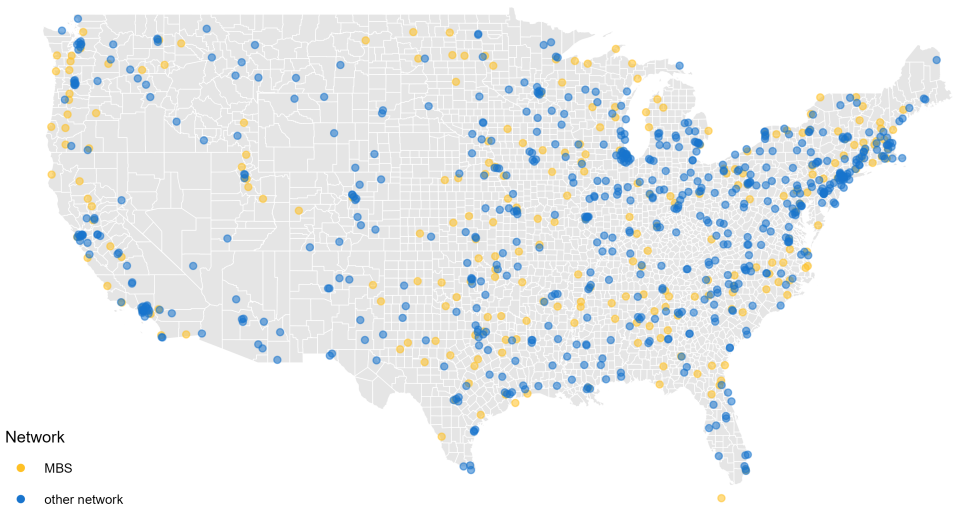
Figure A1 shows an example of information contained in the Broadcasting Yearbook. Figure A2 shows the geographical distribution of antennas, digitized from the Broadcasting Yearbook 1947, which refers to broadcasting in 1946.

Figure A1: Example of information from the Broadcasting Yearbook

DIRECTORY OF BROADCASTING STATIONS OF THE UNITED STATES									
*—Non-Commercial Station.		D—Day.	N—Night.	ST—Shares Time.	SH—Specified Hours.	U—Unlimited.	CP—Construction Permit Issued.		
		LS—Local Sunset.		L—Limited Time with Dominant Station.		SA—Special Authorization.			
(Data corrected to February 15, 1947)									
ALABAMA—(Continued)									
City	Call Letters and Frequency in Kilocycles	Power in Watts	Name of Licensee Headquarters Address Telephone Number	Network	Executive Personnel		Representatives Transc. Library News Services		
HUNTSVILLE.....	WFUN 1450	250	Huntsville Bestg. Co. 410 W. Holmes St. 2424	.....	Joe Foster John Garrison Lauren Mickle John Garrison, Gen. Mgr.	Partnership E. H. Duffey, Coml. Mgr. Joe Keown, Prog. Dir. John Garrison, From. Mgr. Lauren Mickle, Chief Engr.	World AP		
HUNTSVILLE.....	WHBS 1490	250	The Huntsville Times Co. Inc. Gallatin and Clinton Sta. 2245	ABC	A. L. Smith, Mgr. Mrs. Barbara Terrell, Natl. Coml. Mgr.	John P. Culver Jr., Prog. Dir. James L. Sanderson, Chief Engr.	Headley-Reed AP		
JASPER.....	WWV3 1240	250	Bankhead Bestg. Co. Inc. Jasper 24	.....	W. W. Bankhead, Owner James E. Reese, Gen. & Coml. Mgr. Charles Metcalfe, Prog. Dir.	Freda Hilton, Prom. Mgr. Jack Copeland, Chief Engr.	Thesaurus World AP		
MOBILE 9.....	WALA 1410	5,000	Pape Bestg. Co. 105 St. Joseph St. 3-8756	NBC	W. O. Pape, Owner H. K. Martin, Gen. Mgr.	A. C. Holman, Prog. Dir. R. B. Hurley, Chief Engr.	Headley-Reed Standard AP		
MOBILE 7.....	WKAB (Construction permit) 840	1,000-D	Pursley Bestg. Service P. O. Box 1306	.....	Claude Pursley Louise Pursley } Partners	D. W. Lang Jr., Mgr. & Coml. Mgr.			
MOBILE.....	WKRQ 710	1,000-D	Giddens & Rester 205 Government St. 2-8373	MBS	T. J. Rester Kenneth R. Giddens } Partners F. E. Busby, Gen. Mgr.	John Waller, Coml. Mgr. Lynn Williams, Prog. Dir. & Prom. Mgr. W. H. Murphree, Chief Engr.	Weed Lang-Worth Standard AP		
MOBILE 15.....	WMOB 1280	250	Nunn Bestg. Corp. 458 Government St. 2-4568	ABC Ala.	Gilmore N. Nunn, Pres. Archie S. Grimalds, Gen. & Coml. Mgr.	Wallace B. Dunlap, Prog. Dir. Joseph S. Muth, From. Mgr. T. L. Greenwood, Chief Engr.	Thesaurus World UP		
MONTGOMERY.....	WAPX (Construction permit) 1600	1,000	United Bestg. Co. Inc. Montgomery	ABC	T. E. Martin, Pres. John S. Allen, Vice-Pres. & Gen. Mgr.	Chas. H. Allen, Coml. Mgr. Ceel Mackey, Prog. Dir. Paul Umery, Chief Engr.	Walker UP		
MONTGOMERY 2.....	WCOV 1240	250	G. W. Covington Jr. Exchange Hotel 5781	CBS	G. W. Covington Jr., Owner & Mgr. R. B. Raney, Coml. Mgr.	Weston Britt, Prog. Dir. E. J. Duke, From. Mgr. W. D. Weatherly, Chief Engr.	Wilson Standard INS		
MONTGOMERY 4.....	WMGY 800	1,000-D	Dixie Bestg. Co. Dexter Ave. and Perry St. 6245	MBS	Dr. S. D. SUGGS, Pres. Leland Childs, Gen. & Coml. Mgr.	E. Caldwell Stewart, Prog. Dir. Edward L. De Motte, Prom. Mgr. John D. Lamar, Chief Engr.	Radio Advertising World INS		

Note. Extract from the Broadcasting Yearbook 1947 showing some of the active antennas in Alabama.

Figure A2: Location of radio antennas in 1946



Note. This figure shows the antenna location of the complete U.S. radio network in 1946. The location of each antenna is geo-located using information about the city and the state of the antenna, as printed in the Broadcasting Yearbook 1947.

B Additional information about *The Adventures of Superman*

B.1 Plot summary of episodes

The Hatemongers Organisation - Broadcast Dates: 16/04/1946 to 20/05/1946 Clark has just arrived at the hospital to find Jimmy in the waiting room. Danny O'Neil is on the Danger List. He was badly beaten by Muggs and Skinny and could have a brain concussion. Father Francis Shian of the Saint Mary's Catholic Church is with the boy. Shian, Jimmy and Clark talk with Danny. He tells them who had attacked him, and he fears that Muggs and his friends will do something to his mother.

Shian then explains that he had met with local religious leaders from Protestant and Jewish faiths along with a school principal and three men to discuss the creation of Unity House, a community center and playground *where children of every race, ethnic background and spiritual belief can play and interact in order to learn that all people are the same*. However, the members of the Unity House committee have received threatening letters after news of their efforts had gotten out. Father Shian is certain that the people who sent the notes ordered Muggs to start the fire on Morton Street.

Clark has a plan that will hopefully bring down the hate mongers organization "Guardians of America", that is trying to prevent the creation of Unity House. Jimmy is essential to the plan, and it could mean that the cub reporter will be risking his life. Should the police arrest Muggs and his friends, the group behind the threats to the Unity House committee will go into hiding. Jimmy is to pose as a hoodlum to gain Muggs' confidence and join his gang. Should Jimmy be in danger, Superman will provide protection.

The Clan of the Fiery Cross - Broadcast Dates: 10/06/1946 to 01/07/1946 Two boys, Tommy Lee and Chuck Riggs, are fighting when Jimmy arrives. Chuck has been acting like a sore loser since Tommy, who just moved into the neighborhood, replaced him as number one pitcher on Union House baseball team. During practice, Chuck crowds the home plate and gets hit in the head by a ball thrown by Tommy. Chuck believes Tommy did it on purpose, and Jimmy is forced to remove the former from the team because of his attitude toward Tommy.

Chuck tells the story to his Uncle Matt. Knowing Tommy's father Doctor Wan Lee, an Asian American, was promoted to the Metropolis Health Department as a bacteriologist, Matt gets an idea. He makes his nephew believe that Tommy beamed him on purpose and invites the boy to a secret meeting of what he calls "true Americans." Dressed in a white robe, he then takes Chuck to a secluded place where a wooden cross burns. Other similarly dressed men are in the area. Uncle Mack reveals that he's the leader of The Clan of the Fiery Cross. Chuck is coached into saying that Tommy Lee was trying to kill him in order to keep his position on the Unity House baseball team. Chuck says that this will help Lee's people take over America. *The Clan of the Fiery Cross is set to cleanse the country of those that are not "True Americans."*

George Latimer, Crooked Political Boss - Broadcast Dates: 03/09/1946 to 25/09/1946 Joe Martin, a war hero and brother of Beany, a copy boy for the Daily Planet, joins his Jewish friend Sam Robbins in protesting against Governor Frank C. Wheeler's prejudiced hiring policies. These policies unjustly deny job opportunities to returning war veterans based on their race and religion. Joe and Sam, firm believers in equal rights for everyone, are determined to challenge the

governor's discriminatory practices. However, their approaches differ, with Joe suggesting a more confrontational tactic of storming the capitol building, while Sam prefers a peaceful approach.

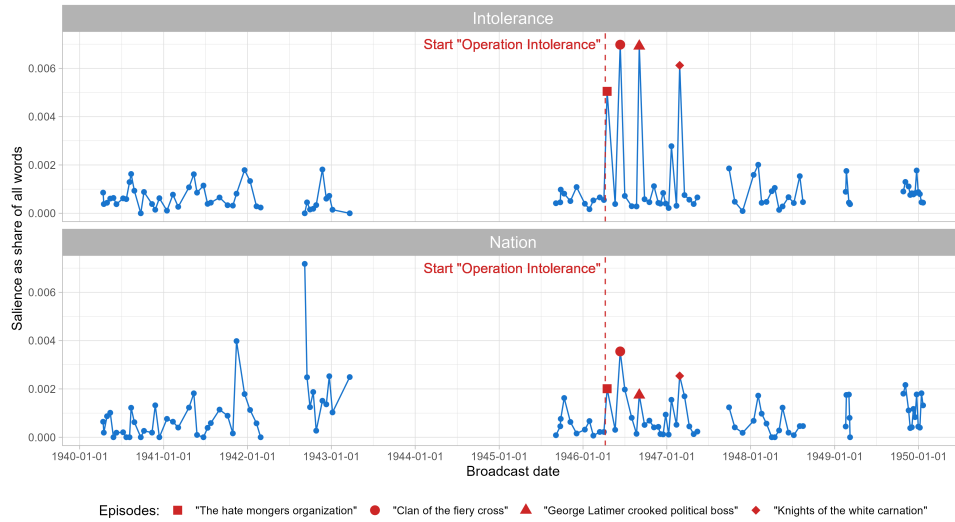
Tensions continue to mount as Governor Wheeler, influenced by the corrupt George Latimer, attempts to suppress the dissent by fueling hatred towards foreigners and minorities. Through an inflammatory speech, the governor stokes anger among the war veterans, resulting in chaos and the state police resorting to firing upon the protesters. Tragically, Joe is shot during the ensuing melee, prompting his brother Beany, along with Clark Kent and Perry White, to pledge their support in seeking justice.

Clark, taking it upon himself to investigate the incident, begins unraveling the truth behind the shooting. It emerges that Latimer manipulated the police into using their weapons and framed Sam Robbins for the crime. With a determination to clear Sam's name, Clark delves deeper into the matter and uncovers Sergeant Adams' testimony, revealing that the officers involved did not want to harm their fellow soldiers. The key to exonerating them lies in identifying the type of bullet that struck Joe.

Knights of the White Carnation - Broadcast Dates: 26/02/1947 to 17/03/1947 In the aristocratic home of Vincent Kirby, *a secret organization called the Knights of the White Carnation is plotting to eliminate what they consider "Un-American foreigners" from the Metropolis High School Varsity Basketball Team.* Charles Canfield, a member who disagrees with the organization's racist agenda, plans to expose them to the press. However, he is mysteriously murdered, leading Clark Kent and Jimmy Olsen to investigate the case. As they dig deeper, they discover that four of the five targeted players have been suspended for gambling, but they suspect foul play. Clark, using his alter ego Superman, saves the day when he prevents a stampede at a basketball game. The coach reveals that he was coerced by the chairman of the Metropolis School Board to remove the players.

B.2 Topic analysis with prolonged time series

Figure B3: Prevalence of topics by superman episode



Note. Figures indicate the share of words in each episode transcript that refer to intolerance (upper panel) or to the nation (lower panel) for all available episodes between February 1940 and February 1950. The breaks in the time line are due to periods for which episodes are partially or fully missing. Data is derived from transcripts of the episodes. We remove stop words and apply basic stemming before calculating frequencies.

B.3 Historical evidence from newspaper articles

Figure B4: *Operation Intolerance* as historical experiment in the radio industry

Reformers Challenged by Superman

Excitement, Message Are Blended in Child Series

By WILLIAM B. LEWIS
Vice President and Radio Director
Kenyon & Eckhardt

SUPERMAN'S "Operation Intolerance" had its beginning at a Kenyon & Eckhardt plan board meeting last October—and before we put the new *Superman* on the air



Mr. Lewis

just two weeks ago we had almost given up the idea that a children's program could be socially conscious as well as entertaining.

Most of radio now knows what we are currently trying to accomplish with our *Superman* series on behalf of our client, the Kellogg Co. *Superman* has been a Kellogg radio property since 1943. We do not feel that the general run of *Superman* stories has been harmful in any way to its millions of juvenile followers, who have comprised one of the most loyal audiences in radio history.

However, we did feel that the time had come for a definite concentrated effort in the realm which had previously been untouched by radio programs built for juveniles—the realm of everyday life, with its problems and solutions spelled out in strong language that no child could misunderstand.

Enemy of Intolerance

When the subject of pitting *Superman* against intolerance, juvenile delinquency and the allied subjects which bulk so largely in American consciousness was first broached, it seemed a logical and fairly simple idea. Bob Maxwell, of *Superman* Inc., was most enthusiastic, for the idea was one which had long been a particular pet of his own. We brought the matter to the attention of the Kellogg Co. and recommended that the experi-

ment—for experiment it is—be tried. W. H. Vanderploeg, president of Kellogg, concurred heartily, with the only stipulation that the program be kept as exciting as the series had been up to the time of change.

So it was that October 1945, found *Superman* Inc. and K&E looking for writers who could combine cliff-hanging technique with crusades against intolerance, state a case and a solution in terms which children could understand, keep the character of *Superman* alive and combine exciting entertainment with a plain spoken message.

The Norman Corwin technique is a vastly different radio concept from the slam bang artifices needed to keep juvenile interest afire 15 minutes a day, five days a week. Another stumbling block, which tripped many writers, was the commission of crime without being able to explain the actions or catch the culprits on the same program.

Lesson Fought

On a program such as *Mr. District Attorney*, the entire story is wrapped up and happily finished in 30 minutes. Our problem was to work out a way in which children who heard two or three episodes of *Superman* during a week wouldn't learn about throwing stones at a church—and miss the message that such tactics are wrong.

During the winter of 1945, and the spring months of 1946, we (*Superman* and the agency) must have seen scores of scripts and ideas for the new story line. Some were good, others missed the point. None, however, combined the two essential factors of entertainment and educational value which we were seeking. Actually, we had almost given up the idea when a writer finally came through with the outline and scripts now riding the Mutual air.

We believe that the experiment currently being conducted is of interest to the entire radio industry. Many Mutual stations have written and told us that they heartily approve the action we have taken. Religious, educational and veterans

organizations have pitched in with a will. The National Conference for Christians & Jews has been especially helpful.

There's one point I'd like to make which may be a signal for other agencies and sponsors who may come after us in this field. It's about time for the organizations who find enough energy to rap children's programs and radio public service in general to put up—or shut up! That may be rude—but it's honest. If these organizations get behind a campaign such as *Superman* is conducting and back it down the line in their publications, meetings and by word of mouth, they will help to get the kind of programs they want on the air.

If these organizations only pay lip service to the kind of ideals which they ask for in radio programming, they will find themselves being ignored in future radio thought.

Henry Morgan, in a recent article, blamed radio audiences for the ills of broadcasting. The *Superman* experiment should determine whether or not some people mean what they say about radio.

Converts GE Sets
TELEVISION TECHNICIANS Inc., Brooklyn, is handling conversion of General Electric video receivers in New York area to receive stations at new frequencies. Charge is \$15. Owners of RCA and DuMont sets are paying \$30 for the conversion.

KID SHOWS on the air, like the weather, have been the subject of much conversation, largely condemnatory. Individually and in their organizations parents, teachers and others concerned with the welfare and education of American youth have urged that radio's juvenile fare be made less fantastic, more reasonable. Now "Superman," never one to avoid a challenge, has taken up this one. Bill Lewis, in this space, describes the new *Superman* pattern, calls for the reformers to work for its success if they really mean what they have been saying all these years.

Brochure Issued by ABC On Video Anniversary

THIRTY-PAGE brochure has been issued by ABC on the occasion of the network's first year in television, outlining its programming, special events and public service features since establishment of ABC television division in February 1945. Entitled *In Television, Too . . . The Show's The Thing*, booklet contains an introductory note by Mark Woods, ABC president, describing the progress of the network's first video year.

Concluding portion of the brochure deals with ABC's special public service shows for V-E Day, V-J Day and Navy Day, and children's programs such as the *Singing Lady* and the Christmas holiday week schedule which ABC televised last December.

The
PAYOFF
Station
In the West's Most
Concentrated Area
KSFO
UBC UBC
San Francisco
Universal Network's
Key Station for
Northern California

Changes Made in WLS Weather Report Service

IN LINE with the expansion of the WLS Chicago Weather Service beyond its present 44 weather broadcasts a week, Harry Geise, meteorologist and weather expert, returns to the station to interpret weather information and give application to crop conditions on the farm. Mr. Geise has been in the aerology section of the meteorological branch of the Marine Corps for the past 2½ years.

A special feature will be a seven-day forecast prepared by meteorologist Geise, issued by permission of the United States Weather Bureau.

Serving
The Third Largest Market
in the
Fourth Richest State

W C O L
COLUMBUS

The Listening Habit of Central Ohio

Represented by
THE HEADLEY-REED CO.

BROADCASTING • Telecasting

May 13, 1946 • Page 75

Note. Source: Broadcasting, 13/05/1946.

Figure B5: Evidence of political endorsements

A. Harry S. Truman

B. Henry A. Wallace

THE PITTSBURGH PRESS

Superman 'Reformer'

Will Combat Intolerance

Superman zooms off on a new adventure starting Tuesday, April 16 at 5:15 p.m. over KQV, with the avowed intention of combating bigotry and intolerance.

Superman is the first network children's radio series to take up the cudgels for tolerance, in support of a movement which has the blessing of every church and the endorsement of President Truman as well as a large group of organizations. Scripts for the new series were prepared with the co-operation of the National Conference of Christians and Jews.

"The plan for using this juvenile series to generate the principles of brotherhood has been in the works for some time," Robert Maxwell, producer of Superman, declared today. "We felt an obligation to perform a public service in addition to entertaining the youngsters. Superman reaches a large audience of children whose opinions and characters are being formed in a mold which will influence their entire lives. To influence them constructively is our purpose."

The new Superman theme has the hearty endorsement of the sponsor, whose president, W. H. Vanderploeg, declared: "For some time we have been planning a more direct approach to the problems now facing young boys and girls in their schools, their social clubs and their homes. We felt that given the proper entertainment values as a base, children would listen to a direct and exciting Superman series with a thoroughly American message of brotherhood. We hope, with the aid of our new Superman story approach, that the children of America will continue to be friendly with all other children, regardless of difference in race, creed or color."

The advertising agency for the company, in a statement heartily concurred with their client about the espousing of the new "Superman" story line. W. B. Lewis, vice president and radio director of the agency, said: "The story will be just as exciting as the usual Superman adventures. In fact, we think it will be even more exciting. The difference lies in the fact that Superman, if this first experiment is successful, will go to war against juvenile delinquency, racial intolerance, school absenteeism and the other problems of child behaviorism which bulk so large in the public consciousness."

Superman will continue to be portrayed by Clayton "Bud" Collyer, who has enacted the part since the inception of the program six years ago. Collyer is enthused about the new story line, because it's just what he has been preaching as a Sunday School teacher in Poundridge, N. Y.



LEAR

With the explicit by professional are well known in ballroom dancing the easiest and At Foreman's a in strictly private ing embarrassm tively guarantee

Private Trial

Open Daily 11 A. M.

FOREM

Loew's Penn Theater Bldg
ENTRANCE 604

BUYING NEW C



Save as 1/3 on financing

But . . . Before
YOUR CAR—

We issue a Bank-D authorizing you to d pay any dealer you car you select. You any time within 90 d

The convenient mo not be due until at you use the draft. We ance through any prefer, so you are pro you take delivery.

Ask any insuranc man about the Pette Plan or Phone We

'Superman' Honored

SECRETARY OF COMMERCE

Henry A. Wallace has commended the tolerance theme inaugurated on the *Superman* series heard on MBS, with the following statement: "I am happy to learn that you are planning to use *Superman* for the purpose of teaching children that Democracy includes the idea of tolerance and equal opportunity for all races, creeds and colors. It is much easier to plant the truth in young minds before anti-social teachings have taken firm root." Program also has received citations and commendations from the Calvin Newspaper Service, the Associated Negro Press, the Child Study Association of America and many religious organizations throughout the country. Program is sponsored by Kellogg Co., Battle Creek, Mich. (Pep).

Note. Panel A is extracted from The Akron Beacon Journal, 22/05/1946. Panel B is extracted from the Broadcasting Yearbook 1946.

Figure B6: Evidence of post-broadcast increase in Hooper Ratings

AROUND THE DIAL

Superman Wins Over Intolerance

Young Fans Accept Moralizing; Program's Hooper Rating Rises

SUPERMAN has unleashed his super-powers against intolerance and juvenile delinquency. He has become a moral force as sincere and full of purpose as the most zealous Sunday school teacher. And so far his young admirers haven't minded one bit.

Apparently they don't object to having their radio entertainment teach a lesson—as long as the lesson is so camouflaged by the usual blood-and-thunder trappings that they aren't even aware that it is a lesson.

IN FACT, the latest Hooper survey—the measuring stick of radio—reveals that Superman is a lot more popular since he started serving a purpose other than that of making his listeners' cowlicks stand on end.

In the previous Hooper poll he had rated fourth among children's radio programs. Several weeks ago he started his tolerance campaign, and his popularity dramatically shot up into first place among all juvenile shows.

THE SECRET of his success is simple, his representatives say. He simply sugar-coats his constructive messages.

"At no time is Superman mounting the soap box and preaching," explain his spokesmen with dignity.

"What he has to say is made to sound perfectly logical and appropriate to the script. The producers of Superman keep their minds on the issue, which is to entertain."

THEY IMPLY rather smugly that if he were so inclined Superman could teach the teachers a thing or two.

"All too seldom do education's leaders recognize," they assert, "that to win mass audiences a program must be top-grade listening, produced, as it were, with showmanship."

"By all odds, the policy followed by Superman seems the most sensible one, and one which educators could study with considerable care."

FOR THE benefit of said educators and of all non-parents who may not be in the habit of tuning their radios to WHKK daily at 5:15, Superman's adventures have been going something like this:

For the last few weeks he has concentrated on fighting intolerance. He has been helping his



RANDY

This is Randy Stuart, the pretty songstress on the Jack Carson show. You'll hear her tonight at 7 over WADC.

young, non-super friend, Jim, smash a ring called "Guardians of America."

Members of the ring were wrecking the business places of Jews, desecrating Catholic churches, attacking Negroes — performing easily recognizable acts of intolerance against groups which were clearly labeled so that young listeners could not miss the point.

MONDAY afternoon the ring was finally smashed. Jim got in the clutches of the intolerant villains, Superman arrived to rescue him in the nick of time, and it was discovered that the leader of the gang was a Nazi spy.

Then yesterday, with hardly a pause for breath, Superman began his campaign against delinquency.

He wasn't on hand himself, because things hadn't gotten bad enough yet to require his services. But the Metropolis newspaper started a campaign to clean up the city's slums, "breeding place of delinquency."

Tonight's Tuning

6—WAKR, the Lone Ranger helps a young painter prove to his father that art has its place.....

6:15—WADC, Jack Smith show; Burl Ives, guest. 6:30—WADC, Ellery Queen enlists Lucille Ball's aid in solving a movieland murder mystery.....7—WTAM, Mr. and

Mrs. North "meet a phoney at Coney".....

7:30—WHKK, Bert Lahr show; Ruth Davey sings "Do You Love Me".... WADC, Dr. Christian helps

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From 9 A. M. to 4 P
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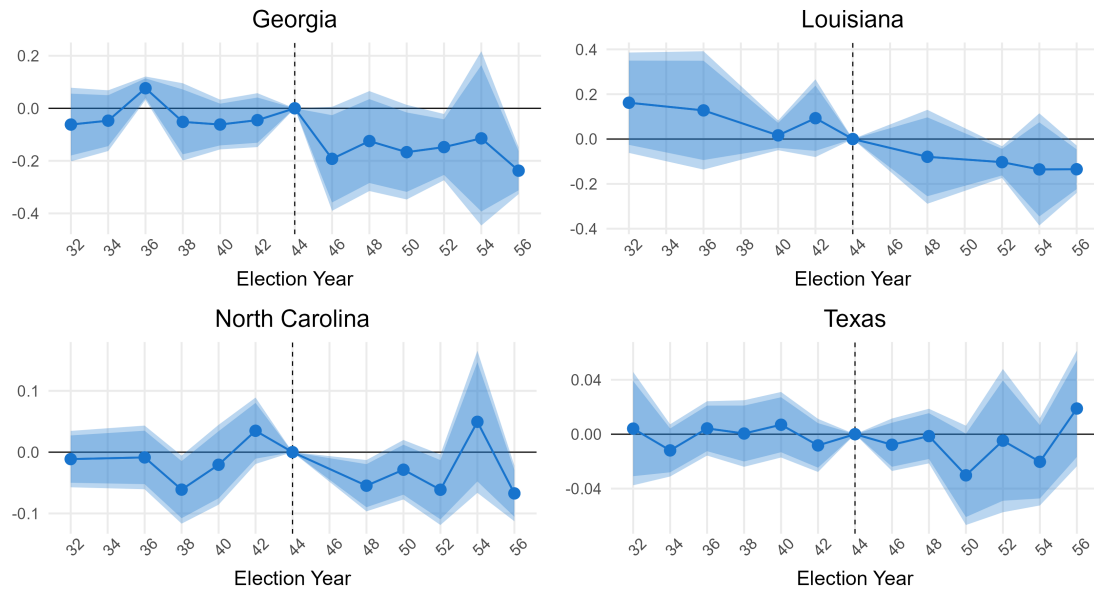
FOR: INSP PURCHASE..

2000 Price-To

Note. Source: The Akron Beacon Journal, 22/05/1946.

C The effect on segregationist voting in the Deep South by state

Figure C7: The effect on segregationist voting in the Deep South



Note. Estimates based on equation (3) including year and county fixed effects. The dependent variable is the vote share of the segregationist candidate across all elections. Segregationist candidates are classified using the data-driven approach described in Section 3.3.

D Case study: Georgia's Gubernatorial elections

Exploiting the strong commitment of the Talmadge family to white supremacy (Figure D9 and Figure D8), we explore Georgia as a case study to cast direct evidence on the impact of the Superman radio show on voting against the KKK. We collect data on voting outcomes for Georgia's gubernatorial elections in 1932, 1934, 1940, 1942, 1946, 1948, 1950 and senatorial elections 1936 and 1938. We consider votes for Eugene or Herman Talmadge in the democratic primaries of the gubernatorial elections as revealed approval for the KKK at the county level.

Figure D8: Evidence on the pro-segregation attitudes of Eugene Talmadge

THE WASHINGTON MERRY-GO-ROUND Rel. Tues. July 16, 1946 Page 3

Notes from the minutes of Klan No. 1, Atlanta--Grand Dragon

Green denounced Atlanta ministers who have condemned KKK, especially Dr. Louie D. Newton. Green waved copy of charter of southern regional council and read names of its incorporators, including Bishop Arthur J. Moore of Methodist Church in Atlanta, Dr. Howard Odum of University of North Carolina and Dr. Rufus Clement of Atlanta University....Grand Dragon exhorted Klokon committees to tighten probe of new members to prevent leaks. He also admonished Vittur to do likewise for Kavalier Klub....Considerable violent talk about the "traitor" who has been leaking Klan minutes. If found, it was threatened, parts of his anatomy would be nailed to a tree and the tree set on fire. The traitor would then be given a knife and the choice of cutting his anatomy or burning to death.

Another meeting of Klan No. 297, Atlanta--Exalted Cyclops Roper reported on conversation with Gene Talmadge. He asked Talmadge for his advice on the race problem. Talmadge did not answer, but picked up a paper and pencil and wrote: "Pistols." If he were governor, Talmadge said, the state militia would never be called out in case of race trouble....Talmadge told of a long talk he had with Klansman Roy Harris and his promise to support him.

Note. Eugene Talmadge commits to Klan cause preceding 1946 Gubernatorial elections in Georgia. Source: Washington Merry-Go-Round, 17/06/1946.

Figure D9: Evidence on the support of KKK for Eugene Talmadge

A. The Owensboro Messenger

2—THE OWENSBORO, KY., MESSENGER—THURSDAY, JUNE 27, 1946.



Red galluses and white supremacy—Eugene Talmadge's color combination—pleases KKK.

If Ed Rivers throws his hat in Georgia's gubernatorial ring, it'll have a KKK label.

Grand Dragon Green won't say he's supporting "Old Gene," but his hints are strong.

Victory for well-backed candidate James Carmichael would give Klan the political chills.

Hot Summer Seen For Georgia As KKK Rises To Fight CIO

By JOHN MEBANE
NEA Special Correspondent

Atlanta, (NEA) — The Ku Klux Klan is trying for a comeback in Georgia. The hooded gentry, who announced their own death in the Cracker State less than two years ago, now are emerging from the grave to fight the CIO organizational drive in the South and, if they can, to elect a friendly governor this fall.

Georgians were not greatly surprised, early in May, to learn that the ostensibly moribund Klan was staging another resurrection. Alert observers here and in other states foresaw such possibilities long before a few hundreds of white-shrouded figures "kavorted" around flaming crosses at the foot of Stone Mountain, while high above them on the peak "konklave" was advertised by a 300-foot cross of brilliant electric lights.

The timing of the resurrection was entirely logical. The CIO had just rented headquarters here for an intensive Southern recruiting campaign in which, it had announced, Negroes would be organized on the same basis as whites. Rabble-rousing ex-Governor Eugene Talmadge had just taken another hitch at his red galluses and tossed his hat into the gubernatorial ring. There were reliable rumors that another Klan-admired ex-governor, Ed Rivers, also would enter the race.

This coincidence provided a natural setting for the Klan to pull its stock demagogues out of the hat. **GREEN SNIFES AT CIO**

The AFL, which also is engaged in an organizational drive, claims that 300,000 of its 1,800,000 Southern members are Negroes. The CIO is going into industries in which any vertical type of unionism is bound to catch a big proportion of Negroes. And the AFL is emphasizing, at every opportunity, the presence of important Communist cells in some CIO unions.

Nobody need be in the confidence of Dr. Samuel Green, Grand Dragon for Georgia, to know that he is shooting at the CIO when he says in the same breath that the Klan is not interested in promoting racial antagonism but that it is out to uphold white supremacy and to fight Communism.

There are three major contenders for the gubernatorial nomination. James V. Carmichael, former manager of the huge Bell Aircraft bomber plant at Marietta and a state legislator, is the third. He is Governor Ellis Arnall's personal choice and is backed by a majority of the state's newspapers. He is expected to get a big vote from returned servicemen who want to see the Arnall type of progressive administration continued.

When Rivers was governor previously, the Klan's Imperial Wizard James A. Colescott of Atlanta, made an excellent living selling road building materials to the State. Perhaps not unnaturally, he was an ardent admirer and supporter of Rivers.

The dope is that he still backs Rivers. Colescott no longer is Imperial Wizard because that position has been abolished, but he is President of a five-member board of directors that is the national government of what remains of the KKK.

Talmadge has made a political career out of the Klan's number one plank, white supremacy. Dr. Green says that "Old Gene" is the only "strong candidate" in the race. He charges that opposition to the Klan is inspired by fear, that its regrowth would strengthen Talmadge's chances of election.

KKK SPLIT POSSIBLE

"I am not saying that we are supporting Talmadge," he added, but "draw your own conclusion."

The extent and type of Carmichael's backing, plus the possibility that some Klan and pro-Klan voters will split from Talmadge and follow Colescott into the Rivers camp, makes political observers feel that Carmichael has an excellent chance of winning, which would leave the KKK out in the political cold for another four years.

But with Talmadge and a militant Klan simultaneously stressing the racial issue while the two big union organizations recruit both Negro and white workers side by side, the more thoughtful fear that the cause of racial tolerance and understanding, which has been making promising progress, will be badly set back.

Even before the fiery crosses announced publicly that the night-riders were back again, initiated observers had expressed private fears that, unless the CIO in particular was very careful, a measure of vigilantism might be attempted by zealous.

Immediately after the Stone Mountain performance, the Georgia Legislative Council in which the CIO, the AFL and independent unions participate—demanded that the FBI and the Treasury department investigate fully. The Christian Council of Atlanta, and ministers generally, lashed out at the Klan's comeback attempt, and the newspapers here took up the cudgels.

Governor Arnall asked State Attorney General Ben Cook to search Georgia law to determine whether the Klan could be outlawed and its charter revoked. U. S. Attorney General Tom Clark announced that the full resources of federal law would be used to fight the Klan here and elsewhere.

If the Klan means business, more than the weather will be hot in Georgia this summer.

COURT NEWS

Real Estate Transfers
Sidney B. Neal and wife, to Thomas S. Hayden and wife, four lots on Windsor avenue.
Earl C. Bellw, to Layman E. Robinson and wife, for \$4,500, more or less, house and lot on north side of East Nineteenth street, in Seven

B. Poughkeepsie Journal (10/09/1946)

Drew Pearson

WASHINGTON—Today Gene Talmadge, the red-gallused gentleman from Georgia, convenes the state Democratic convention in Macon to prepare plans for Gene's forthcoming reign as governor of Georgia. In keeping with state tradition, Talmadge's opponents, Ed Rivers and Jimmy Carmichael (the latter actually received a larger vote than Talmadge) have surrendered their delegates to Gene and he will have complete sway over the Democratic party.

Taking advantage of that sway, Talmadge has had the brass to appoint as delegates the most variegated array of Ku Klux Klanners Georgia has seen in years. Talmadge delegates who will chart the future course of the Democratic party read like a roll call of the nightshirt brigade at Stone Mountain. Here are some of them:

Dr. Samuel Green, grand dragon for Georgia.

Sam Roper, exalted cyclops of Atlanta Klan No. 297; attends meetings in his police uniform; former head of the Georgia Bureau of Investigation under Talmadge.

Luke Arnold, recorder court judge, member of Atlanta Klan No. 1, speaks also at other klaverns.

A. W. Callaway, recorder court judge, attends Atlanta Klan No. 1.

Howard Haire, city councilman and mayor pro tem, member Klan No. 1.

Joe Allen, city councilman, attends Klan No. 1. Allen was recently present in a professional gambling house when a sensational shooting occurred. As a result, he was forced to resign as a member of the governing board of his church, but his status both as a Klansman and member of the Atlantic city council continues unimpaired.

O. B. Cawthon, city councilman, attends Klan No. 1 and East Atlanta Klan.

F. Lee Evans, city councilman, long-time secretary of Atlanta Klan headquarters.

Cecil Hester, city councilman and police commissioner, member Klan No. 1.

Ellis Barrett, county commissioner, attends Klan No. 1.

Neil G. Ellis, assistant chief, Atlanta Police department, attends Klan No. 1.

Jimmie Helms, city detective, head of klokan committee, Klan No. 1.

R. E. Jones and O. R. Jones, county and city detectives, attend Atlanta Klan 297.

H. C. Edson, klansman and brother of a klansman convicted in East Point Klan flog case.

Dr. R. H. Eubanks, active speaker in Klan No. 1.

Vester Ownby, former cyclops of Riverside (Atlanta) Klan now chief spokesman for new outfit "The Columbians" who describe themselves as "40 times worse than the Klan."

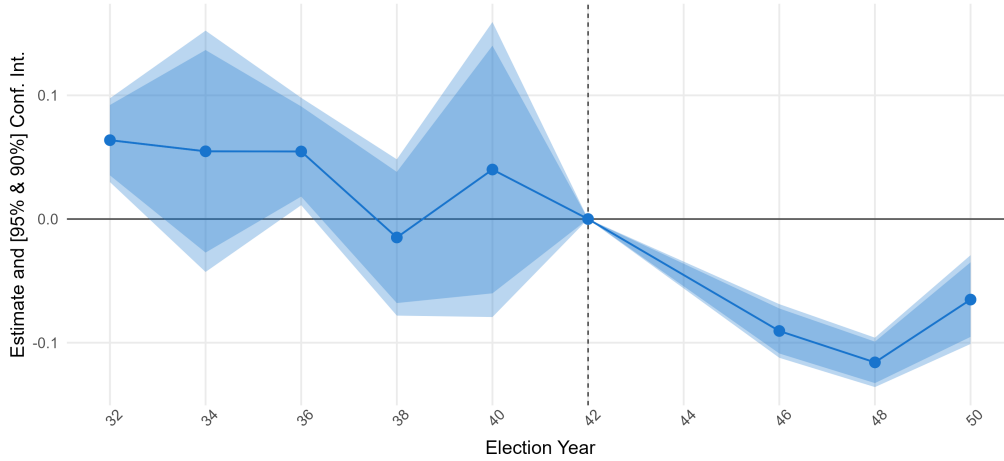
These are the gentlemen who will do Talmadge's bidding at a convention (convention is a better name) which will set policy for the Democratic party during the next four years. And since the Democratic party is all-powerful in Georgia, what this convention does will be the law in Georgia. Among other things, it plans to abolish all rules regulating primaries—and whoever wins the primary wins the final election in Georgia. It will also undertake plans to stop trains and buses at state lines in order to overrule the U. S. Supreme court on Jim Crow laws.

Talmadge's boast is: "Gene always keeps his promises." And no matter how far it turns back the clock, the above-named klansmen will help him keep them.

Note. Panel A shows evidence of the KKK endorsement of Eugene Talmadge in the 1946 gubernatorial elections. Panel B shows evidence of the nomination of Klansmen for public offices after Eugene Talmadge's victory at the elections.

Figure D10 presents estimates of the effect of the broadcast on the vote shares for Eugene or Herman Talmadge using equation (3). Talmadge has been significantly less successful in counties that were exposed to the Superman radio broadcast. We find that the vote share of the KKK-backed candidates received 5 percentage points less votes, significant at the 5% level.

Figure D10: The effect on Talmadge’s vote share during Georgia’s Gubernatorial and Senatorial elections



Note. The dependent variable is the vote share of, respectively, Eugene Talmadge (1932, 1934, 1936, 1938, 1940, 1946) or Herman Talmadge (1948, 1950). The dotted line marks the last election before the start of the revised Superman radio broadcast as base period. The shaded areas indicates the confidence intervals at the 10% and 5% confidence levels.

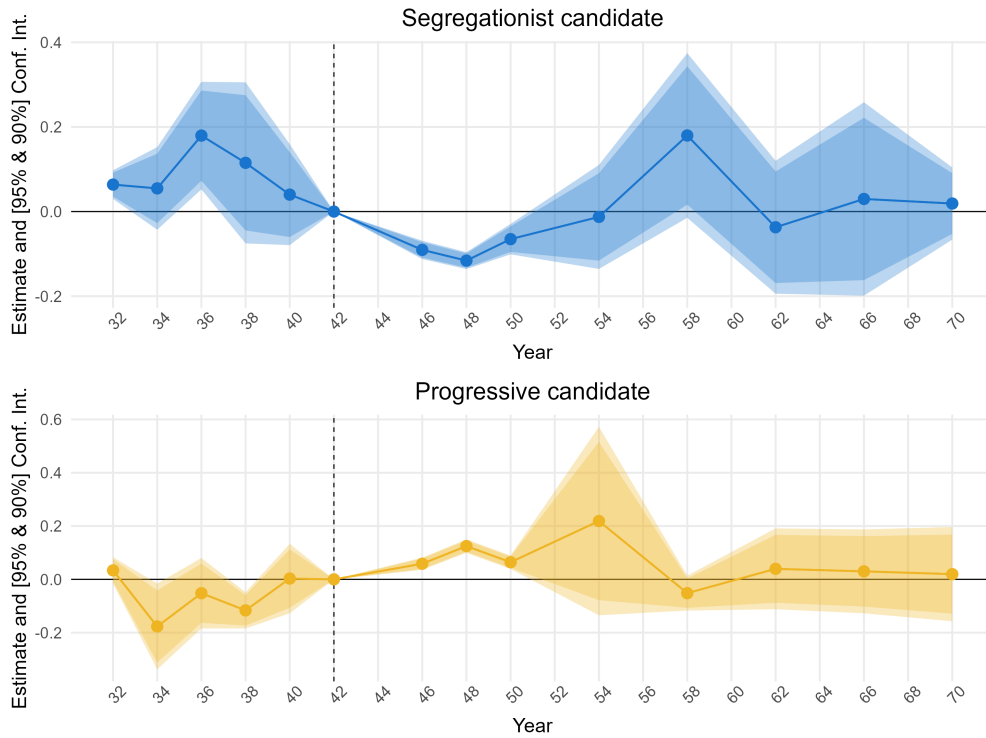
To illustrate and verify the methodology to categorize politicians presented in Section 3.3, we subsequently present a brief summary of the case of Georgia. The civil rights related referendum, closest to the broadcast of the radio show in 1946, took place in 1954. The proposed constitutional amendment aimed to pave the legal grounds to withhold public funds from schools that attempted to integrate. Thus a vote in support of the referendum expressed strong commitment to segregation. The amendment was passed by a wide margin, with 74% of enfranchised Georgians voting in favor of it, in the aggregate. Nevertheless the support was strongly heterogeneous across counties. While 94.4% of voters in the county of Baker supported the amendment, 82.3% voted against it in Glynn. Turning to the candidates, the presented methodology confirms our qualitative assessment of the gubernatorial elections in Georgia from Section ??: Talmadge won the vote in Baker County during the gubernatorial elections of 1940, 1942, 1946, 1948 and 1950, respectively, with a wide margin. Turning to the outcomes in Glynn, the most progressive county in Georgia, majority winning incumbents were Roberts, Arnall, Carmichael, Thompson and Thompson, respectively.

Having identified the candidate that was relatively more/less progressive in each election, we then estimate two simple DID models, linking the success of progressive and segregationist candidates to exposure to MBS radio broadcasting. First we present results for the Georgia case for progressive and segregationist politicians, using our alternative classification strategy, again limiting out analysis to democratic primaries in gubernatorial and senatorial elections. We estimate the following event study equation:

$$(5) \quad vote_{ct}^{position} = \mu_c + \mu_t + \sum_{\tau=-5}^{-1} \gamma_{\tau} D_{c\tau} + \sum_{\tau=1}^8 \delta_{\tau} D_{c\tau} + \epsilon_{ct},$$

where $vote_{ct}^{position}$ is either the vote share of the segregationist or progressive candidate during elections in county c at time t . Results presented in Figure D11 are qualitatively comparable to the estimates obtained by manual classification of candidates and lend some credibility to our methodology.

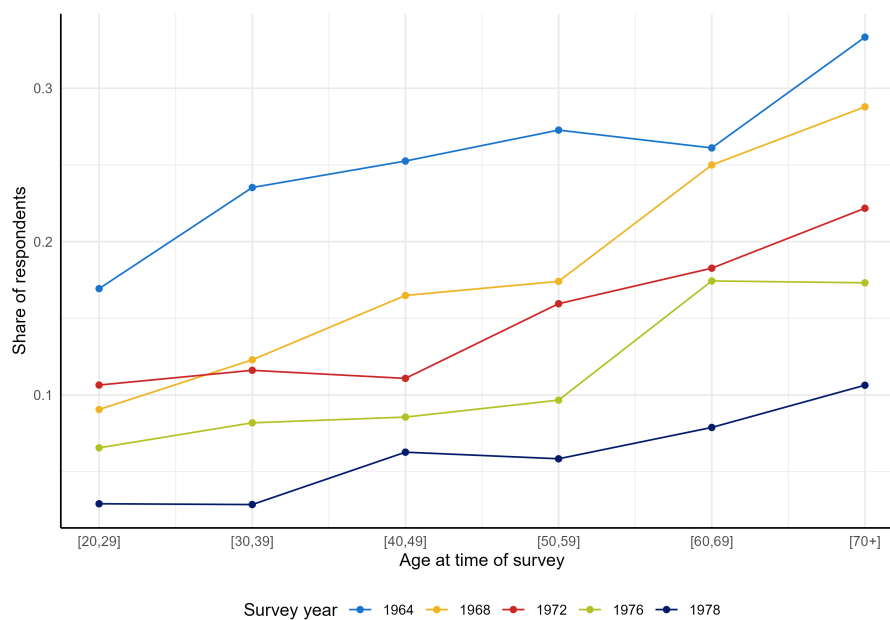
Figure D11: The effect on Georgia's Gubernatorial elections, data-driven categorization of candidates



Note. Estimates bases on equation (3). The dependent variable is the vote share of the segregationist (progressive) candidate in the democratic primaries of the gubernatorial elections as function of MBS exposure.

E Descriptive statistics about attitudes towards segregation

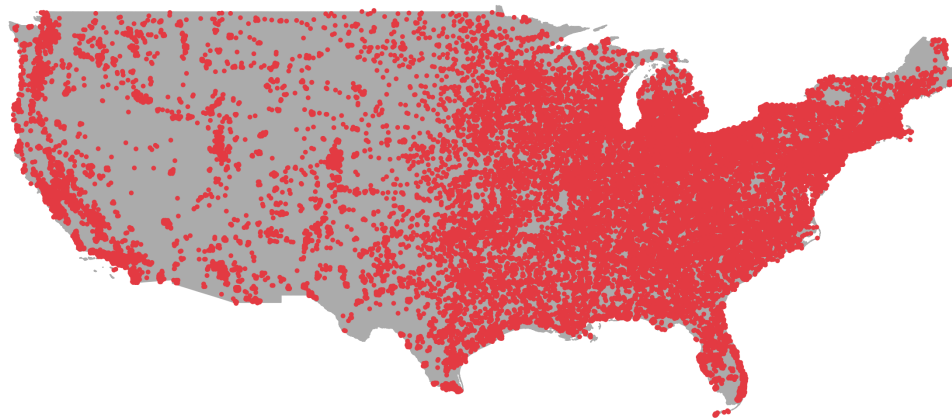
Figure E12: Support for strict segregation by age and survey year



Note. The figure shows the share of individuals supporting strict segregation by 10 year age cohorts, based on age at the time surveyed and survey year. Data stems from the ANES survey waves 1964, 1968, 1972, 1976 and 1978.

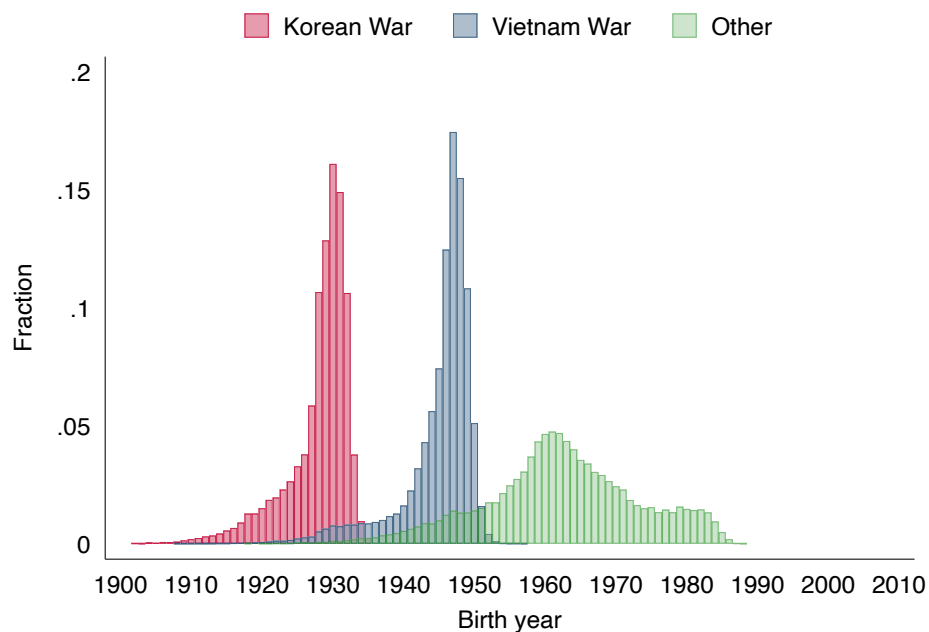
F Descriptive statistics about DCAS

Figure F13: Distribution of U.S. casualties during the Vietnam wars



Note. The figure shows the geographical distribution of casualties using the home of record. All casualties are attributed to the conflict in Vietnam.

Figure F14: Casualties, by birth year and conflict

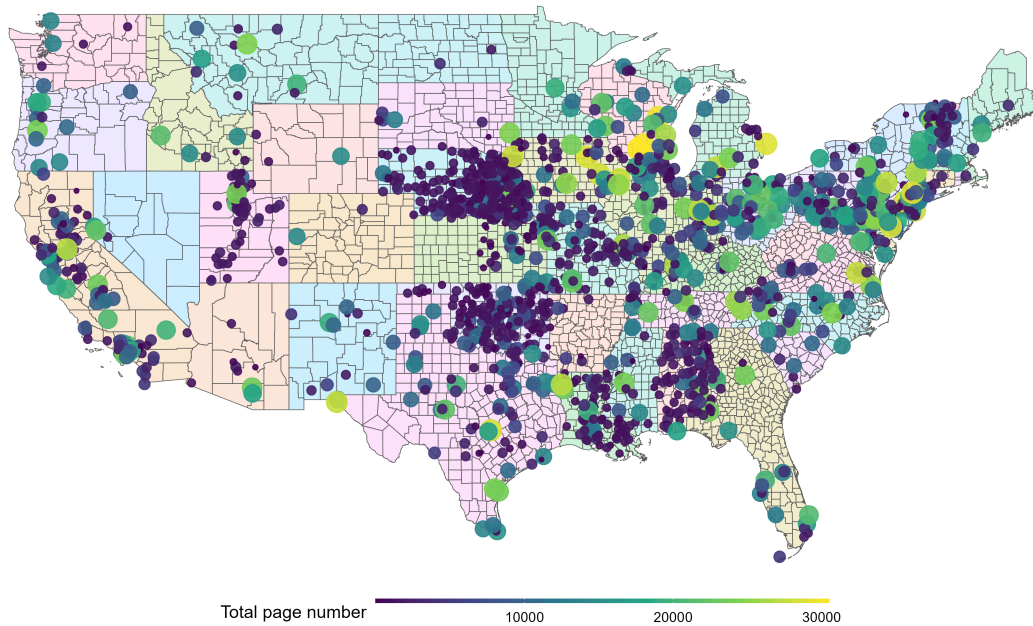


Note. The figure shows the geographical distribution of local newspapers. Geo-locations are based on the location of their headquarters. The total number of pages is computed in the period January 1945 – December 1947.

G Additional evidence concerning newspapers

G.1 Distribution of local newspapers

Figure G15: Distribution of local newspapers

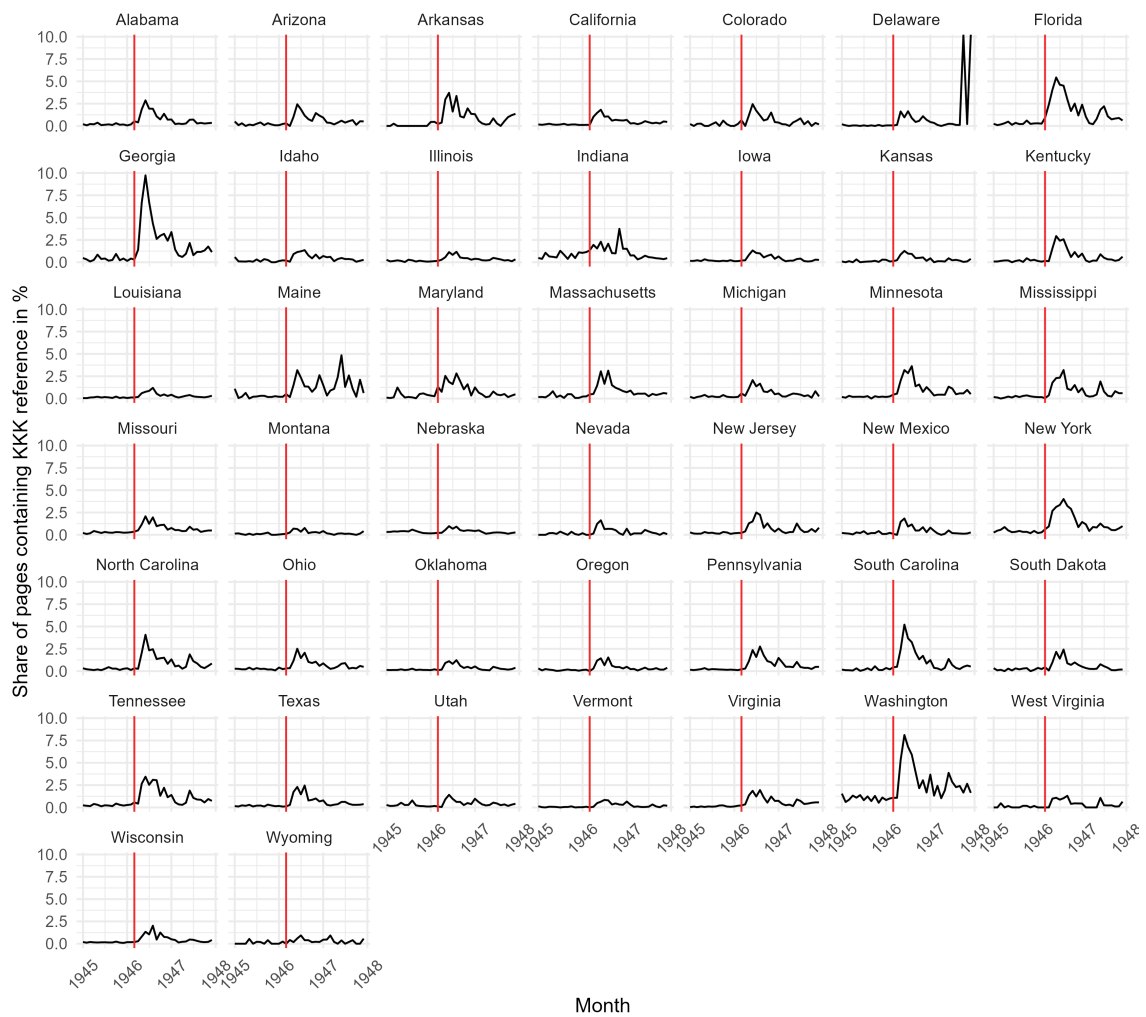


Note. The figure shows the geographical distribution of local newspapers. Geo-locations are based on the location of their headquarters. The total number of pages is computed in the period January 1945 – December 1947.

G.2 Salience of intolerance

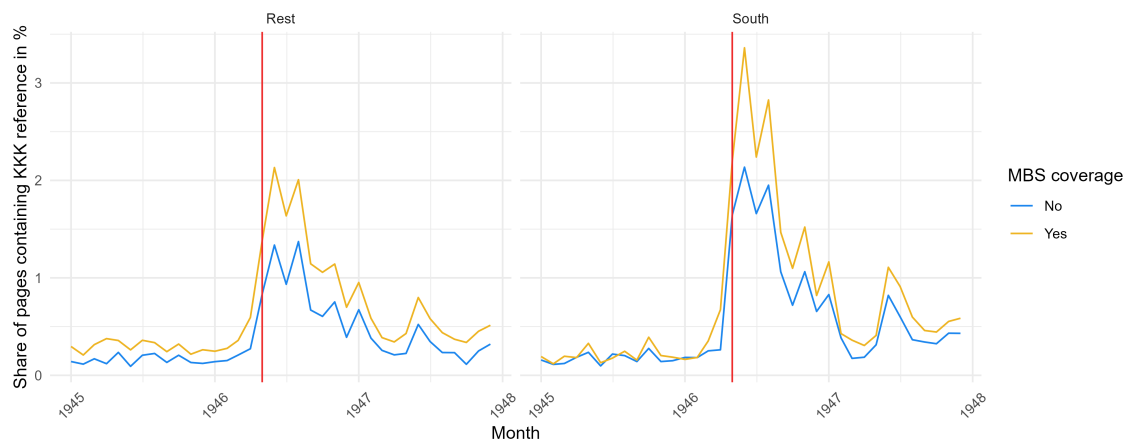
Figure G16 shows a sudden jump in the frequency of KKK references in newspapers at the time the radio show was broadcast. Patterns are relatively consistent across most states. Figure G17 illustrates that this jump was especially pronounced in the states belonging to the “Deep South”, and in counties which have been exposed to the Superman broadcast.

Figure G16: Salience of intolerance in local newspapers, by state



Note. Share of pages containing reference to KKK per month disaggregated by states. The red line marks the start of “Operation Intolerance”.

Figure G17: Saliency of intolerance in local newspapers

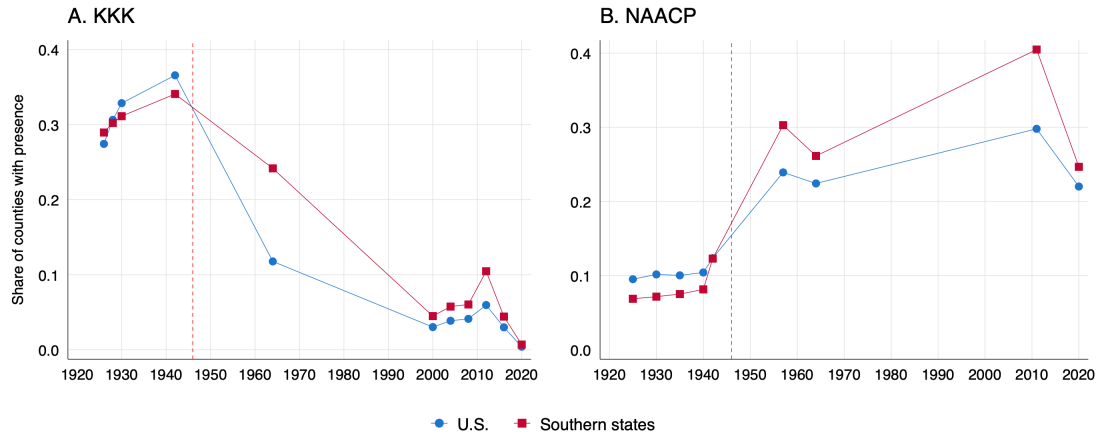


Note. Total share of pages containing reference to Ku Klux Klan per month disaggregated by treatment status. We show results separately for the group of states belonging to the “Deep South”. The red line marks the start of “Operation Intolerance”.

H Additional analysis on segregation and social mobilization

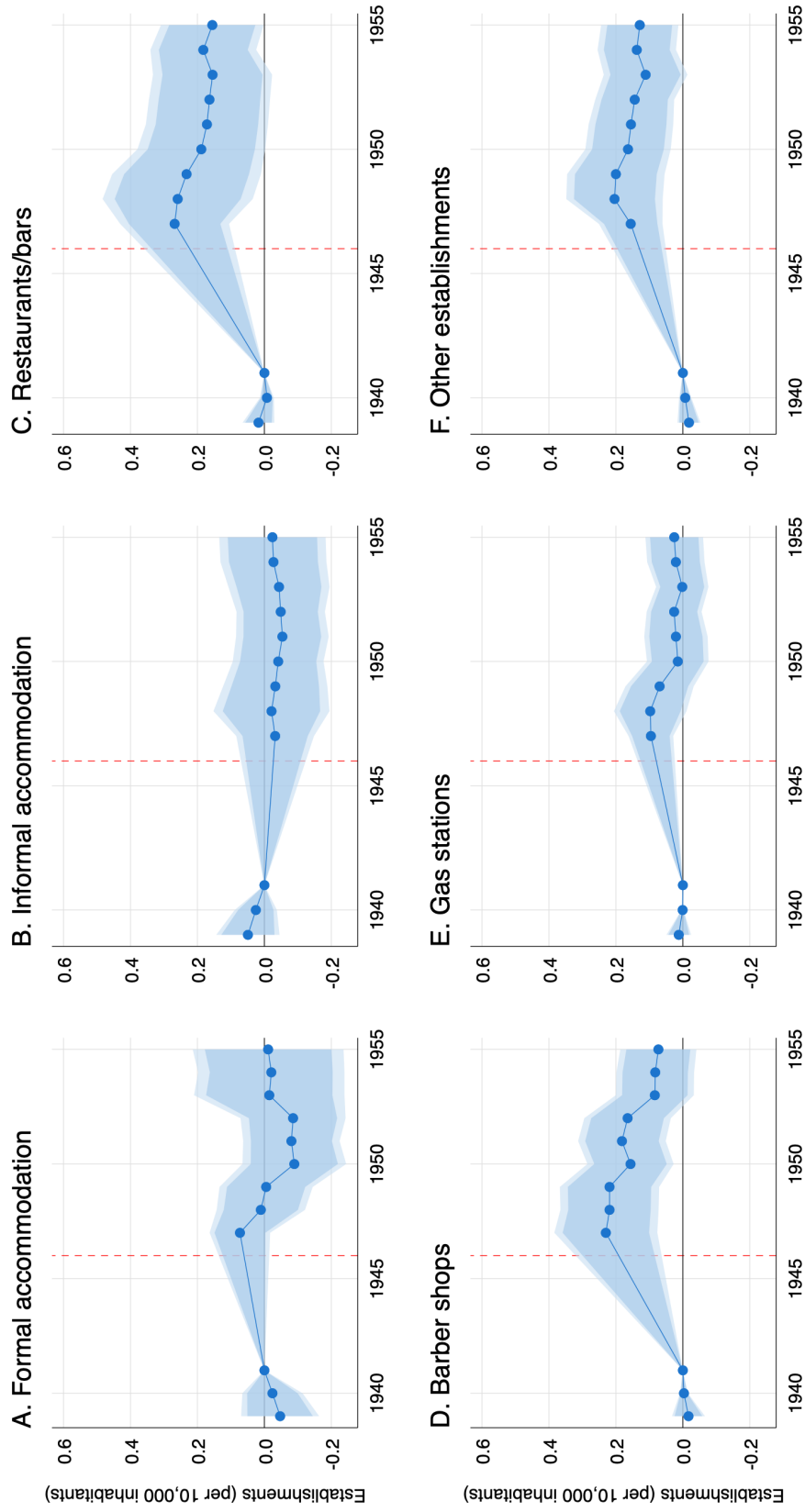
Figure H18 shows the evolution over time of the share of counties in which the KKK (Panel A) or the NAACP (Panel B) are present. Figure H19 show the effect of the broadcast on racial segregation in the provision of services, distinguishing by the type of service.

Figure H18: Presence of KKK and NAACP over time



Note. The figure shows the share of counties in the U.S. and the share in Southern state in which KKK (Panel A) or NAACP (Panel B) are present. Data sources are detailed in Section 3.3.

Figure H19: The effect on racial segregation in the provision of services, by category



Note. Estimates based on equation (3) including county and state by year fixed effects. Dependent variables are the county-level number of establishments with non-discriminatory services to African Americans as included in the Green Books. Data are described in [Cook et al. \(2023\)](#). The number of establishments is normalized by 10,000 inhabitants. We consider different categories of services: formal accommodation (Panel A), informal accommodation (Panel B); restaurants and bars (Panel C), barber shops (Panel D), gas stations (Panel E), and other types of services, such as pharmacies and facilities for entertainment and recreation (Panel F). The shaded areas indicate the confidence intervals at the 10% and 5% confidence levels. The vertical line indicates the beginning of Operation Intolerance. Refer to Section 3.3 for further details about data.

I Presidential elections

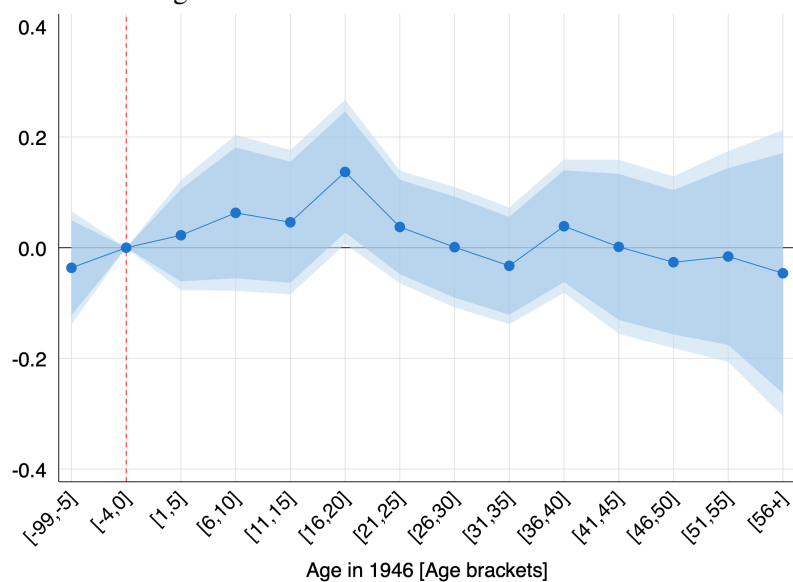
In this section, we analyze how the broadcast of Superman in 1946 impacted presidential elections. We focus on three elections in which the whole generation born after 1946 participated as voters. We summarize the main stance of candidates concerning civil rights here.

First, the *1968 Presidential Election*. This election featured Richard Nixon (Republican), Hubert Humphrey (Democratic), and George Wallace (American Independent Party). Nixon campaigned in favor of law and order without explicitly addressing issues related to civil rights. Humphrey, the lead author of the Civil Rights Act of 1964, had a more progressive agenda on civil rights. Wallace, a strong opponent of desegregation, appealed to white voters who were resistant to civil rights advancements. Second, the *1972 Presidential Election*. This election featured Richard Nixon (Republican) and George McGovern (Democratic). Nixon continued to focus on his law and order agenda, aiming to appeal to conservative voters. McGovern embraced a more progressive stance, supporting civil rights and social justice. Third, the *1976 Presidential Election*. This election featured Jimmy Carter (Democratic), and Gerald Ford (Republican). Carter championed civil rights, by supporting equal rights legislation, and affirmative action policies to address historical injustices. Ford also supported civil rights, but more moderately as compared to Carter.

Overall, during the election between 1968–1976, the position of Democratic candidates on civil rights was more progressive compared to the other candidates. We compute voting using ANES data (Section 3.4). These data record the respondent’s self-reported vote, and for those who report not to have voted, their preferred candidate (if any). We thus define a vote for a Democratic candidate if the respondent reported to have voted for a Democratic candidate or whether the respondent did not vote but had a preference for the Democratic candidate. The sample includes respondents who report not to have voted, and not having any preference; results are not affected by their exclusion.

Figure I20 shows estimates of the effect of the broadcast in 1946 on the Democratic vote in 1968–1976. We observe an increased share of votes for the Democratic candidates in areas covered by the broadcast and among the youngest cohorts in 1946. The effect is significant for the cohort that was 11–15 years old in 1946.

Figure I20: Effect on voting for Democratic candidates in Presidential elections 1968–1976



Note. Estimates based equation (4) controlling for income, gender, education, age at the time of the interview, survey-wave fixed effects, and state \times year fixed effects. The dependent variable is an indicator variable equal to one if the respondent reported to have voted for a Democratic candidate or if the respondent did not vote but had a preference for the Democratic candidate, and 0 otherwise. The shaded areas indicate the confidence intervals at the 10% and 5% confidence levels. The vertical line indicates the beginning of Operation Intolerance. Further details about the data are reported in Section 3.4.

INSTITUT DE RECHERCHE ÉCONOMIQUES ET SOCIALES

Place Montesquieu 3
1348 Louvain-la-Neuve

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