

Nation without Place: Does Local News Decline Cause Democratic Dysfunction in the Contemporary United States?



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St. Hilda's College

Thesis submitted in partial fulfilment of the requirement for the degree of *MRes in Information, Communication and the Social Sciences* at the Oxford Internet Institute at the University of Oxford.

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Abstract

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What impact does the closure of a local newspaper have on civic engagement? This thesis examines the relationship between U.S. local newspapers and associated local-level voter behavior nationwide since 2004. Working across presidential and congressional elections under stringent model conditions and using novel data, this thesis makes causal claims linking local newspaper closure to (i) declines in voter turnout, (ii) increases in partisan vote share, (iii) increased ideological extremity of elected candidates, and (iv) increased incumbency advantage. It argues that, given the scope of these effects, they must be contextualized not simply as a discrete problem for local political functioning, but in aggregate as a structural contributor to national-level democratic dysfunction. Highlighting a paradox in that the high-choice digital media environment has led to a low-or-no choice local media environment, these findings carry compelling implications for understanding the tension between concentrated informational power and federally distributed democratic systems. This thesis presents the strongest evidence to date for understanding the negative civic impacts of recent local news closure in the U.S. as widespread, and not isolated to the individual communities where papers close.

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Chapter 1: Introduction

The dramatic digital expansion and concurrent evolution of media systems has been a major focus of public and academic discourse over the past three decades. Ubiquitous internet, computer, and mobile phone use have opened a Pandora's box of new media, generating novel possibilities, networks, and affordances, while simultaneously constructing new barriers and instigating new contests for media power and control. Scholars have used diverse approaches to understand and characterize these changes (Castells, 2009; Neuman, 2016; Chadwick, 2013; Aagaard, 2016; Prior, 2007), but widely agree that a paradigm shift has occurred in media and the flow of information, and there is now *more* media than ever before.

Yet while the exponential increase in media is staggering, it is not universal: in the United States (U.S.), although individuals now operate in a high-choice media environment overall, they are simultaneously faced with a low-or-no choice local media environment. Indeed, the case of local media is distinctive in that it has not seen growth over past decades. Rather, the local newspaper industry has been profoundly challenged by the technical, social, and economic changes catalyzed by the internet, particularly the decimation of its ad-revenue streams by the digital advertising industry (Lu, 2015; Starr, 2012). The nationwide trend-lines are stark: the U.S. newspaper industry has seen year-over-year revenue declines for nearly the last three decades (Barthel, 2017). There was an estimated loss of one-third of industry-wide reporting and editing capacity—worth more than \$1.5 billion—between 2000 and 2010 (Pew, 2010). Digital revenue streams, though growing, have thus far failed to make up for the loss in print revenue (Mitchell et al., 2016). Local newspapers in particular experienced an estimated twenty percent drop in nationwide circulation between 2004 and 2016 (Abernathy, 2016). The losses have catalyzed tumultuous industry restructuring of local papers, including upticks in mergers, closures, staff-cuts, buy-outs, ownership-changes, increases in private

equity ownership, and further consolidation in terms of industry concentration (Noam, 2016; Abernathy, 2016; Crain, 2009). As a result, of the approximately 10,000 U.S. local newspapers, nearly 1,500 local newspapers closed in the years between 2004 and 2016—a decline of approximately fifteen percent (UNC, 2016). This number fails to scratch the surface of cutbacks in the forms of frequency reductions, staffing cuts, consolidation, curtailed reporting, and other changes which may have impacted the quality of the product received by the one third of American adults who read a local newspaper at least weekly (Miller et al., 2012, p. 20).

Thus, a paradox exists: the move to a high-choice media ecosystem overall has simultaneously driven a low-or-no choice local news ecosystem. People have unprecedented choice and access to national and international media, and yet—due to economic, social, and technical shifts wrapped up in the growth of the internet over the past three decades—may well have little choice close to home. Thus, the atrophy of local newspapers is distinct, and occurs against a backdrop of growth in diversity of media nationally and social media interpersonally. It is as if the media system has lost a part of its connective tissue—a middle local layer bridging the ongoing proliferation of national and interpersonal content—resulting in a delocalized media ecosystem.

One way of looking at the loss of local papers is a nostalgia for print or a retrograde urge to put back into the box the complexity and dynamism of what Chadwick (2013) termed ‘the hybrid media landscape’. However, as this thesis will discuss in depth, local papers often provide a unique level of analysis, and may hold unique cultural capital and positionality not just in covering their localities, but also in serving as an interpreter and informational mediator to the wider media ecosystem. Might local newspapers losses thus be reflected in civic health and democratic functioning?

Literature about media change and the state of American politics has two main limitations: localized theory and limited scope. The focus is overwhelmingly on *national* rather than local media. Simultaneously, literature about local newspaper change focuses overwhelmingly on the *local-level* effects of newspaper closure. Despite the richness of both scholarly discussions, there is a paucity of rigorous literature integrating these lines of questioning: what impact does *local* news closure have on *national* political functioning in the U.S.? Moreover, although the issue generally has received considerable attention within U.S. industry and academic discourse, there are significant methodological and data limitations that have yet to be overcome. The limited publicly available documentation of local newspapers has challenged researchers, who often study a small number of cases (Schulhofer-Wohl and Garrido, 2009; Shaker, 2014; Lassen, 2005) or very short time periods (Hayes and Lawless, 2015, 2018; Darr et al., 2018). With important exceptions (Gao et al., 2018; Gentzkow et al., 2011), methodological approaches to this question are also limited in their ability to minimize omitted variable bias, which is especially important given the substantial demographic and cultural heterogeneity across U.S. localities. In combination, the limited generalizability of these studies poses a problem: despite a public narrative about the “death of local newspapers,” it is difficult to understand or extrapolate the findings of existing research onto the broader landscape.

The twin limitations of localized theory and limited scope may be related: because very little quality data exists on local newspapers, it is difficult to explicitly study national implications of local news losses at scale—or determine whether such losses can be generalized across places at all. Understanding the need for research that overcomes these challenges, this thesis investigates the research question: “What is the impact of reduction in local news media production on civic life in the contemporary United States?” Striving to explore nationwide breadth while maintaining local specificity, this analysis invests

significant resources to build on a novel dataset of local newspapers between 2004 and 2016. Focusing on presidential and U.S. House of Representatives elections, this thesis uses fixed effects regression techniques to examine the effects of local newspaper closure on civic engagement and political polarization within U.S. counties and congressional districts over time. In order to argue that local newspapers and their concomitant civic impacts are not simultaneously being driven by an unobserved third factor, it mimics experimental research design by creating and analyzing a matched-pairs subset of counties with and without paper closures during this period.

Through a creative analysis of these data and careful consideration of their limitations, this paper makes the claim that local newspaper closure will decrease political participation and increase polarization within U.S. counties and districts over time. These effects are anticipated not just in relationship to local-level elections and political functioning (e.g., mayor, city-council, county board), but also in relationship to national-level politics (e.g., presidential elections, U.S. Congress).

This study found that, firstly, there is strong evidence that local newspaper closures drive decreased voter turnout and increased margins in political party vote share within districts and counties over time. Secondly, results indicated suggestive evidence that local newspaper closures drive increased ideological extremity of elected House candidates and increased incumbency advantage within districts over time. These results are contextualized within a larger theory that links local news closure and national political dysfunction, including an explicit discussion of potential mechanisms and strategies for understanding this phenomenon within the constraints of the data. In doing so, this thesis builds on previous work by bringing new data to bear on questions of local newspaper closures and re-expanding the horizon on which their influence can be understood.

Going beyond discussion of “what’s new” in digital media and the role it plays in contemporary American politics, this thesis chronicles what’s been lost. These findings carry serious implications for understanding the negative effects of local news closure as problems not isolated to individual communities, but as a structural problem for U.S. media and democratic functioning.

This thesis proceeds as follows: *Chapter 2: Theory* situates local newspapers within their socio-political history and function in the U.S., and summarizes literature on their decline and associated civic impacts. It then contextualizes this change within the long-term trends of political and media nationalization in the United States, in order to argue that local newspaper closure may substantively impact national as well as local politics. It hypothesizes that national impact arises from civic disengagement and anti-institutional voting behavior driven in part by feelings of alienation and disconnection from national media and political systems in the wake of local newspaper closure. Building on the hypotheses developed, *Chapter 3: Methods* presents the overarching data collection and analysis strategies used. *Chapter 4: Civic Disengagement*, *Chapter 5: Polarization*, and *Chapter 6: Incumbency Advantage* present chapter-specific literature and methods sections preceding presentation and discussion of eponymous results. *Chapter 7: Conclusion* expresses the key take-aways from this thesis, its potential impact, and lines of future inquiry.

Chapter 2: Theory

Local Papers, Politics, and Place

Place—the combination of location, locale, and meaning attached to space—is a dynamic political-social construct (Relph, 1976; Massey, 1994; Cresswell, 2008) that has been and continues to be vitally important in the U.S. democratic system. Imagined loyalty among colonizers to their newly constructed states was a core design feature of the early republic. It functioned as a check on federal power, which was not expected to garner

settlers' affinity to the same degree as their states (Levy, 2007). The development of U.S. electoral and political institutions was driven largely by a land-owning, slave-owning political elite. As such, electoral and representative institutions were developed to privilege geographic territory and space—as well as limited population-based representation—in the apportionment of representation and the distributed structure of federal government (Rehfeld, 2005). Though enfranchisement expanded in the intervening two centuries, the calculus of population *and* geography-based representation has evolved but persisted—resulting in an electoral college system and a Congress that is reflective not only of population, but of territorial claims to power and representation.

Culturally, American ideas of place are deeply intertwined with class, racial, ethnic, and religious identities (Meckler and Chinni, 2014; Cramer, 2016; Burrows and Gane, 2006; Alesina and Glaeser, 2004). This interrelationship means that perception of relative social inside-ness and outside-ness (Relph, 1976), of deservingness and fairness (Hamilton and Hochschild, 1983; Cramer, 2016, p. 14), of power and powerlessness (Hayward, 2006), are strongly intermixed with cultural topographies of place. Political representation is in part an act of alternately reflecting, capitalizing on, and co-creating these notions of place: to be a congressperson from a state or district is to *be* and *use* the symbolism of that place.

Candidates' performance of “localism” has remained an important piece of American electoral contests (Vavreck, 2009; Grimmer et al., 2012; Fenno, 1978), even as substantive differences in state party platforms and regional politics have been largely assimilated into national parties and political conversation (Hopkins, 2018).

U.S. local newspapers played an important role in the construction and shaping of place-based identities during the 20th century (Buchanan, 2009; Dovey, 2009). Given the mixture of class, religious, and ethnic identities that were drawn into urban areas by industrialization in the early 1900s, metropolitan newspapers of the time had a strong

economic incentive to cultivate a common place identity for their area of distribution. Park and others in the Chicago School characterized the work of these newspapers as sites of social construction: creating shared symbols and propagating common narratives that reconciled or excluded different identity groups in order to cultivate a viable place-based media market (Park, 1925; Janowitz, 1967; Kaniss, 1991). The work of Park, Dewey, and others on understanding the media's role in orchestrating symbolic interaction of this kind was a counterpoint to a vision of transmission-style mass media associated with Lippmann and others, which described professionalized media elite broadcasting information to a passive audience (Lippmann, 1941; Munson and Warren, 1997). Inspired by Dewey and the Chicago School (Munson and Warren, 1997, p. 32), in his canonical essay, "A Cultural Approach to Communication", Carey instead characterizes an approach to communications that acknowledges the importance of media in facilitating symbolic social interaction as a "ritual" approach to communication (Carey, 1988). He writes: "Reality is not given, not humanly existent, independent of language and toward which language stands as a pale reflection. Rather, reality is brought into existence, is produced, by communication—by, in short, the construction, apprehension, and utilization of symbolic forms" (Carey, 1988, p. 25).

Regular readers of most U.S. local newspapers might find the idea that their local newspaper is contributing to the very elicitation of reality a bit lofty. Indeed, for many of the approximately 8,500 local newspapers still in publication (UNC, 2016), content of a quotidian nature is perhaps more readily called to mind than anything hard-hitting: sports, weather, marriage, business, leisure, culture, local celebrities, classifieds and the funnies are important standards for many local papers. In smaller communities, the local newspaper may well have followed its individual readers through life: birth announcement, sports achievements, high school graduation, marriage announcement, businesses opening, businesses closing, retirement party, obituary. The degree to which local papers do publish

hard news and investigative content varies widely—as does the quality, frequency, and independence with which investigative content is produced—but the front page headlines are regularly accompanied by pages of local-specific human interest content that animate the paper beyond just hard news. In aggregate, the way local news covers all types of events over decades and in relationship to other places, does shape, as Carey suggested, the reality of a place. In doing so, local media have real shaping power in influencing how readers conceptualize events and agenda-setting power (McCombs and Shaw, 1972) in discerning which events accrue attention.

Local Papers as Place-Based Interpreters

While shaping power is, of course, not exclusive to local newspapers, both the *level* and *positionality* of local news content may frequently occupy unique layers in the information ecosystem—even relative to other local media. In relationship to national professional media, local newspapers have a unique level of analysis: communities outside of the largest metropolitan areas, approximately ninety percent of U.S. counties (USDA, 2019), are rarely newsworthy at a national scale. Thus, local media are often the only source of dedicated, professional media attention, information-production, and news-making about local places on a week-to-week basis (Starr, 2009). In relationship to other forms of local media, while local newspapers are only one part in an ecosystem of local television, radio, blogs, bulletins, and magazines—they are arguably the informational foundation of that ecosystem. Relative to other media, local newspapers usually produce most of the original reporting content on local events, and set an agenda followed by other media (Starr, 2009). Research shows that local television broadcasts primarily reuse reporting and follow the agenda set by local newspapers (Starr, 2009; Maier, 2010; McChesney and Nichols, 2009). Aside from public radio and the nineteen cities with “all-news” radio stations, commercial AM and FM radio stations include minimal news content, and do not usually produce

significant original local content in-house (Anderson et al., 2016, pp. “What’s happened to news on radio?”). Finally, although the swift evolution of local digital-first news organizations may challenge past findings, research thus far has shown that new digital alternatives are not true substitutes for local newspapers (Gao et al., 2018). Moreover, due to sustainability and scope issues, robust blogs and citizen journalism websites are found to be the exception rather than the norm (Hindman, 2011). Thus, local newspapers are uniquely important parts of local information ecosystems. In conclusion to his mapping of a local informational ecosystem in Denmark, scholar Rasmus Kleis Nielsen argues this as follows:

On the basis of a close study of what sources of information people rely on to follow local politics and what kind of information is actually produced and made available by these sources in a specific case community, I have argued that the local newspaper, though diminished in terms of reach and resources, occupies a critical role in the local political information environment. It is what I have defined as a keystone medium, the primary provider of a specific and important kind of information—news about local politics—and a medium that enables other media’s coverage of this area. (Nielsen, 2015, p. 12)

But in addition to this unique level of analysis, local newspapers are also uniquely positioned to communicate the news and human interest stories they cover. As argued in Simpson (2018) and carried forward here: peoples’ social identities are a key part of how they interpret political information and form opinions (Achens and Bartels, 2016; Zaller, 1992; Schildkraut 2014). In parallel, the social identities of those communicating the information also play a role in how individuals receive and make sense of information (Taber and Lodge, 2006). Although different senses of place coexist within communities, place-based social identity in general is shared between local press, local audiences, and local journalists. Given the well-established phenomenon of in-group bias in social psychology (Everett et al., 2015; Tajfel et al., 1971), local media may receive some added credibility from their local audiences for being uniquely collocational. In contrast, for readers living in areas where place identity incorporates elements of inherent opposition to national media centers (New York City, Los Angeles, and Washington, DC) (Cramer, 2016), national media

outlets may face a trust penalty. Put another way: local reportage may be perceived as having greater cultural authenticity, and thus meriting higher trust, than that published by media groups who are perceived as cultural outsiders¹.

Support exists for the idea of an outsider trust penalty: national surveys find greater trust ratings for local news as opposed to national news (Morning Consult, 2017; Reuters Institute, 2018; Lakshmanan, 2018). Content analyses have found support for the idea that local newspapers understand their trust advantage and use it to their benefit by subtly purporting the idea that national journalists “don’t get it” (Gutsche Jr. et al., 2017). Finally, national and international media outlets have been shown to fake local authenticity by cutting in localisms to standardized scripts and modulating tone based on the preferences of different local audiences (Castells, 2009; Orenko, 2005). Attempts by insider and outsider journalists to appeal to place-based authenticity supports the idea that there is value to local positionality.

The unique, place-based shaping power of local media may operate not only through covering events within a community of focus, but also through the relational work of contextualizing a place in relationship to the regional, national, and international conversations—helping readers place themselves within the broader cultural-political topography of current affairs. In covering the events of the day, local newspapers act as interpreters of national or international events (Simpson, 2018, pp 13, see also Hutchins, 2004; Hess, 2012): connecting the dots between national healthcare reform and coverage changes for neighbors; interviewing local businesses for opinions on new national tax legislation; speaking with local environmentalists on how climate change is affecting the

¹ However, note that place is only one component of reader identities, and not in and of itself a guarantee of trust. Indeed, if the local newspaper is unrepresentative of the community in terms of other axes of identity—such as race, ethnicity, class, or gender—such effects might intercede with any place-based trust advantage.

local watersheds; telling the stories of military families grappling with loved ones in foreign wars. Local newspapers serve as informational, cultural mediators between “local” places and “national” conversations: they reinterpret national events into local context, and in turn provide a record that can be accessed by outsiders on how national events are playing out in place. In sum, local newspapers’ shaping power, ability to contextualize wider events within readers’ lived experience, and place-based cultural authenticity, may together make them a key influencer on how readers conceive of themselves in relationship to politics at local *and* national levels. This analysis will follow its predecessor, Simpson (2018), in referring to this function as *local interpretation*.

Local Paper Decline & Democratic Concern

The place-based uniqueness of local newspapers, however, became a financial liability. In a digital media environment where profits depend on scale, search engine optimization, and clicks, the content and positionality of local newspapers put them at a disadvantage: local news operations scale poorly; local news content is relevant to fewer internet users; and local papers struggle to compete with online platforms for advertising dollars (Starr, 2012; Williams, 2017; Wu, 2016). Google and Facebook net more than \$7.5 billion, approximately one third, of the U.S. digital advertising display market in 2014 (Lu, 2015). Micro-targeting enables these platforms to access the local markets that once represented a unique offering for local papers (Starr, 2012). The economic consequences for newspapers are well-known: newspaper industry ad revenue was cut approximately in half between 2004 and 2014 (Mitchell et al., 2016). Print advertising revenue for publicly-traded newspaper companies show year-over-year declines in advertising revenue (Pew, 2018), and gains in digital revenue has not yet offset these losses (Mitchell et al., 2016). For local newspapers, the dire losses resulted in massive staff cuts, mergers, frequency reductions, cycles of acquisition and restructuring, and a dramatic thinning out of the local newspaper

industry (Abernathy, 2016). The number of State House reporters was reduced by more than a third between 2003 and 2014 (Enda et al., 2014). Relative to national papers, local investigative reporting and local political coverage were significantly reduced (Peterson, 2017). Freedom of Information Act requests from local newspapers was cut in half between 2005 and 2010, even as requests from national newspapers increased (Hamilton, 2016). Over a similar time period, the share of prizes for investigative reporting won by national newspapers increased as local newspapers took home fewer awards. In all, the industry completely lost an estimated 1,500 local newspapers between 2004 and 2016, and many remaining outlets saw atrophy of reporting and investigative capacity. For context, these changes were not a reversal of a growth trend, but an acceleration of a long-term decline in local newspaper production. Finds Noam (2016, np.): “The city size needed to generally assure a single daily paper in the year 2000 was above 100,000 population, whereas in 1980 it was half of that.”

The decline of the newspaper industry is of great concern to scholars and industry, many of whom turned their attention toward trying to understand the democratic impacts. Concern was based partly on normative and somewhat romanticized visions of newspapers as a democratic bulwark. But while the reality of the newspaper industry often fell short of that vision (Nielsen, 2015; Cook, 1998), there is substantial literature associating newspapers with civic participation and political knowledge (Hayes and Lawless, 2015, 2018; McLeod et al., 1999; Gentzkow et al., 2011; Schulhofer-Wohl and Garrido, 2009; Lassen, 2005; Mondak, 1995). This thesis will discuss these relationships in depth in *Chapter 4*, but in brief, Simpson (2018) synthesized a wide body of literature on the theoretical and empirical associations between local newspapers and local civic participation into four primary mechanisms: information, democratic accountability, social cohesion, and local interpretation.

Findings from recent literature on the local implications for local newspaper decline are troubling and merit public concern. Yet, thus far, the normative conversation has largely stopped at local-level effects. This tendency is exemplified by the “news deserts” metaphor that dominates public and academic discourse of local newspaper closure (Friedland et al., 2012; Ferrier et al., 2016; Abernathy, 2016). The idea of “news deserts”, however, is insufficient in that it problematizes the phenomenon purely at the level of localities—pointing out that there are “haves” and “haves not” communities, and naming the problem as one for the latter. But in keeping the local-level of analysis, it misses the broader picture: in the U.S., communities with and without news are knit together as components in a geographically-distributed, federated democratic system. When a community loses its local newspapers, that one part of the larger system might theoretically witness the local-level effects discussed above. However, when a significant proportion of communities are affected in that way by local news closures, the cumulative consequences create problems above and beyond the local level at the state, regional, or national levels. When local papers are considered as not only affecting local political participation, but as important interpreters and shapers of understanding of national events, closures might also be expected to affect national politics. Thus, the democratic implications might not be isolated solely to areas that become “news deserts”. The following section argues that there may be a relationship between local-level media and civic life, not just locally, but nationally, and that erosion of civic and political life at local levels may be destabilizing to the broader national system.

Local Interpretation in a Nationalized Environment

In order to fully understand the importance of local newspaper closure to national civic life, it is useful to briefly sketch the trends in political nationalization and national media change.

Political nationalization in the U.S. is not a recent phenomenon. Periods of nationalization have stopped and started throughout the 20th century (Hopkins, 2018), and proceeded heterogeneously across regions (Gimpel, 1996). Hopkins (2018) outlines two distinct conceptualizations: “vote choices are nationalized when voters use the same criteria to choose candidates across the federal system...political behavior is nationalized when voters are engaged with and knowledgeable about national politics to the exclusion of state or local politics” (Hopkins, 2018, p. 3). Predictably, the latter has occurred during periods of consolidation of government authority—the New Deal, World Wars I & II, the Great Society Program—but also during federation of communication and transportation technologies—railroads, telegraph, telephones, television (Chhibber and Kollman, 2004; Hopkins, 2018, pp. 22). Over the past few decades, evidence suggests significant increases in both types of nationalizations: state-level elections and policy outcomes have assimilated and become increasingly reflective of national-level partisan politics (Rogers, 2016; Rogers, 2017; Meredith, 2013; Hopkins, 2018, Chapters 3 and 5), and the relative inattention to local politics as opposed to national politics has grown (Hopkins, 2018, Chapter 4). Lower local political participation (Hopkins, 2018, Chapter 4) and knowledge (Binder et al., 2016; Pew, 2007) relative to national-levels can be seen at the polls, but also in the search bar: for example, online searches for Obama far outpaced searches for the state governors in their state at almost all times between 2004 and 2016, including the weeks of their own elections (Hopkins, 2018, p. 73).

In parallel, included in the waves of media changes over the past few decades, there are two key tensions that have arguably emerged in terms of media focus and media production. In the U.S., media focus has both fragmented and nationalized, while media production has democratized and yet also become more concentrated. In terms of media focus, Prior (2007) effectively illustrates how the move from the “golden age” of broadcast

television—when individuals had access to only a few mixed-topic TV channels—to the age of cable—when individuals gained choice between hundreds of diverse TV channels—effectively fragmented audiences as they selected into different media themes based on their personal interests. Using the same logic, the proliferation of the digital media ecosystem (Chadwick, 2013; Neuman, 2016) has exponentially increased the range of media choices available to consumers. In terms of media production, the now broad availability of mobile and computer access means that some of the means of digital media production and reproduction are widely available: this shared and networked access to information technology has been hailed as, among other things, a democratizing force in terms of knowledge production and creation (Benkler, 2006; Shirky, 2008; but see also Hindman, 2009).

Yet simultaneous to fragmentation and democratization, U.S. media focus and production has also become more concentrated and more focused on national-level content. At a high-level, consumer trends suggest movement away from consumption of local newspapers toward national newspapers over the past two decades (Reuters Institute, 2012, 2017; Buchanan, 2009; Hopkins, 2018). Evidence on whether local newspapers are also producing less local content relative to national content is mixed: some studies have suggested local content coverage has not suffered (Hopkins, 2018, Chapter 9), whereas others suggest declines in the proportion of local content produced relative to national content (Peterson, 2017, p. 16; Buchanan, 2009; Hamilton, 2016). Political scientists have long suggested that the structural evolution of media is a driving factor behind political nationalization (Stokes, 1967), and Hopkins argues that declining attention to local content in favor of national content is one contemporary driver of political nationalization (2018).

In terms of the concentration of media production, independent local newspaper ownership slowly ended over the course of the 20th century (Noam, 2009): the high fixed

costs and low marginal costs of newspaper production produced strong consolidation incentives, resulting in an increase in chain ownership from about 30% of all papers in 1960 to about 90% of papers in 2000 (Noam, 2016). With the advent of digital media, the relative marginal costs of news production have dramatically decreased, further incentivizing consolidation (Noam, 2015, p. 10), which has been reflected through continued concentration of an already highly-concentrated media environment (Crain, 2009; Abernathy, 2016; Noam, 2016).

Relatedly, newspaper production has also concentrated geographically. Between 2004 and 2014, U.S. Bureau of Labor data suggests that, “the share of American reporting jobs that were in New York, Washington, and Los Angeles went from 1 in 8 in 2004 to 1 in 5 in 2014” (Benton, 2016). Further, these data show that, between 2005 and 2015, approximately 12,000 reporting jobs disappeared outside of Los Angeles, New York City, and Washington, D.C. Yet over the same period: reporting jobs in Washington D.C. doubled; reporting jobs in Los Angeles increased by twenty percent; and reporting jobs stayed steady in New York City (Tankersley, 2015). Thus, the number of local newspaper reporters located throughout the country not only decreased, but decreased sharply relative to the share of reporters in America’s coastal urban media hubs.

Therefore, over past decades U.S. media has nationalized in terms of ownership, content, and production geography—despite the concurrent and related paradigm shift in terms of access and proliferation of media options. Although the latter trends have resulted in diversification of media content and democratization of media choice, the former trends amount to a dislocation of political conversation: the nationalization of U.S. politics, nationalization of focus in U.S. media, and literal relocation of media production to major coastal urban centers may have further removed public political discourse conceptually and geographically from all but a small fraction of U.S. communities. This shift is simultaneous

to, as previously discussed, an atrophy of the local media network that would be positioned to localize, re-interpret, and make relevant the national media to readers' lived experience.

Together, these shifts result in a delocalized media ecosystem, wherein readers are informationally displaced by having little choice in local media despite improved access to non-local media sources.

Theory of the Case: Local Newspaper Decline & National Effects

Thus, against a backdrop of media and political nationalization, it is theorized that local newspaper closure may result in feelings of political alienation and disconnection due to a loss of the local interpretation provided by local newspapers. Feelings of alienation, disconnection, and distrust might drive one of two divergent responses among citizens: disengagement or anti-institutional voting behavior. Disengagement is a rational response under feelings of distrust: if a person believes the system doesn't serve her regardless of her political preferences, the costs of participating outweigh the benefits, and she will not participate (Downs, 1957; Birch, 2010). In contrast, anti-institutional engagement is also a rational response: if a person believes the system doesn't serve her regardless of her political preferences, then she may believe the system needs radical reform, and will participate by expressing anti-institutional engagement that seeks more radical systems change over more moderate systems change (Cramer, 2016; Williamson et al., 2011; Achen and Bartels, 2016; Pinkleton et al., 2009). The distinguishing feature between these divergent responses—stay home on election day versus vote for the candidate who promises the more radical reform—may be a person's sense of political efficacy. Given a government system that does not serve or is perceived to not serve "people like me," a person might pursue reform only if they have sufficient political efficacy to believe their participation can matter (Moeller et al., 2013; Grönlund and Setälä, 2007; Craig et al., 1990). If not, the value of the person spending time

to participate will not immediately outweigh the costs, and the person may choose to stay home (Pinkleton et al., 2009).

Moreover, local newspapers may also serve as an ideologically moderating force. In the vacuum left by local newspapers, substituting to national media, particularly national TV news programs, may constitute a switch to the consumption of relatively more partisan media. Darr, Hitt, and Dunaway (2018) hypothesize that polarization will occur in the wake of local newspaper closure for two reasons: 1) national news covers primarily national politics, which are currently deeply polarized; and 2) national news media gravitate toward the most contentious, conflictual events in partisan politics (Darr et al., 2018). While there exists supporting evidence for the association between national media and contentious coverage of political elites (Farnsworth, 2010; Arceneaux and Johnson, 2015; Darr et al., 2018; Levendusky, 2013; York, 2013), there is a paucity of literature that validates the assumption that national television coverage is more partisan *relative* to local newspapers. However, there is evidence of significant partisanship among TV news networks: Martin and McCrain (2018) found that when local TV news stations were acquired by America's largest television station operator—Sinclair Broadcast Group—effects included an increase in ideological extremity of coverage toward conservatism, as well as increased national political coverage relative to local political coverage. Similarly, Clinton and Enamorado (2014) show that market entrance of conservative broadcaster Fox News decreased support for President Clinton. While it is suspected that local newspaper coverage tends to be less politically partisan than national political coverage in many cases, this finding is not clearly validated in the literature for the contemporary U.S. Alongside the hypothesized response of anti-institutional voting behavior, the loss of local newspapers' moderate coverage and uptake of television news' more polarizing coverage is a second hypothetical contributor to polarization.

Thus, in answering the primary research question put forth in this analysis—“What is the impact of reduction in local news media production on civic life in the contemporary United States?”—this thesis hypothesizes that the impact of local news closure is not isolated to local politics. Rather, it predicts that reduced local news production will drive disengagement and polarization—driven either by anti-institutional voting behavior or the loss of local news’ moderating effect—observable even in federal-level elections. This thesis argues that disengagement and anti-institutional voting behavior are both rational, near-term responses to a feeling of distrust and disconnection from national media and political systems. Such feelings are hypothesized as a response to the loss of local newspapers’ interpretative role in the civic information ecosystem. When present, local newspapers are hypothesized to have a unique capacity for local interpretation that helps localize national events and provides greater continuity between the lived experience of voters and national political conversation. In the absence of local media—and thus local interpretation—in a delocalized media ecosystem, voters are left with national-level media, which—especially in environments where place-based identity is constructed in opposition to elite urban media centers—may result in feelings of alienation and disconnection from national political discourse.

As will be discussed in *Chapter 7*, increases in both of these behaviors is expected to exacerbate a cycle of further polarization and further disengagement. Following a loss of local democratic accountability and nationalized media attention, Hopkins (2018) argues that Congress members will be incentivized to follow national partisan leadership rather than legislating based on place-based effects. Such changes may result in legislators pursuing policies that seem even further out of touch, thus exacerbating the problems of distrust and alienation which cause further disengagement and anti-institutional voting behavior.

Following presentation of the overarching methodology used here, the following chapters present analyses of these phenomena: *Chapter 4: Civic Disengagement* and *Chapter 5: Polarization*. Based on these findings, one hypothetical area of impact is further explored in *Chapter 6: Incumbency Advantage*. Each chapter examines relevant literature to propose methodologically-appropriate sub-hypotheses, before presenting chapter-specific methodology notes, results, and their interpretation.

Chapter 3: Methodology

The following chapter will first describe the collection of local newspaper data and construction of associated demographic data, before discussing the methodology and analysis protocol. It concludes with a note on diagnostics and introduces a broader conversation on limitations that follows in the discussion of results. This research was granted approval by the Central University Research Ethics Committee at the University of Oxford. The reference number for approval is: SSH OII C1A 18 045.

Local Newspaper Data

The starting point for this analysis was a proprietary database maintained by the Center for Innovation and Sustainability in Local Media at The University of North Carolina at Chapel Hill (UNC), obtained with permission. The database is believed to contain virtually all U.S. local papers (Whitaker, 2018) at three cross-sections: 2004, 2014, and 2016. It excludes major national papers, advertising-only publications (colloquially called “shoppers”), trade-specific publications (e.g., *Modern Dog Magazine*), or publications publishing less frequently than once per-week (Abernathy, 2016). The UNC methodology drew from databases at *Editor & Publisher*, a magazine covering the newspaper industry, and BIA/Kelsey, a marketing services consultancy (Abernathy, 2016). UNC then worked to verify newspaper existence via state press associations, closure/merger records, press

releases, and public financial records (Whitaker, 2018). The data include and do not discriminate between publications that are print-only, digital-only, or mixed medium, resulting in data on approximately 9700 local papers.

Building on the UNC data, this analysis then interpolated a list of local newspapers that closed between 2004 and 2016. This paper then undertook an extensive research process to identify the closure years of the 1,541 unique closed papers. The search protocol for closure years examined the following sources sequentially: Lexis Nexis®, the Internet Archive’s *Wayback Machine*, Wikipedia, State Press Association websites where available, and generic search engines. Approximately one-hundred person hours were spent investigating the closure years of the fifteen hundred closed papers. Of these, two-hundred confirmed closure years were obtained, enabling the novel, temporally-continuous analyses pursued by this thesis.

Using the city of each paper’s headquarters, newspapers were aggregated at the county level for each county-year (Gentzkow et al., 2011). U.S. counties are the smallest common administrative subunit of U.S. states. Counties are a good approximation of the market area a local newspaper might be expected to serve, and are perhaps the smallest market-area heuristic still common across urban, suburban, and rural areas. Prior estimates suggest that approximately eighty percent of a local newspaper’s readership is located within the county where it is based (Gentzkow et al., 2010). The approximately 3,100 counties that existed over the period of this analysis are not normalized consistently—populations range from a few hundred people in rural areas to more than two million in urban areas. The demographic variation is kept in mind for this analysis.

A point of uncertainty in the UNC database is that 569 local papers were “added” in later waves. Given prevailing trends, it is highly unlikely that 569 new papers opened during this period, and instead likely that these records are simply “missing” from the 2004 wave.

UNC methodology is unable to explain these cases (Whitaker, 2018). Simpson (2018)—a previous paper wherein this author looked at the relationship between UNC data and voter turnout within and between the 2004, 2014, and 2016 cross-sections—replicated the whole of its analysis with and without counties with “added papers”. Virtually identical findings were produced in terms of significance, magnitude, and directions of coefficients. This lends support to the idea that counties with “added papers” were randomly and not systematically distributed. Thus, to avoid noise caused by this discrepancy, all counties with an “added paper” (361) were removed from this analysis, leaving a subset of 2,765 candidate counties.

The two-hundred confirmed paper closures were aggregated across 160 counties. Possibility for bias existed in that areas where local paper closure years were successfully found may differ significantly from areas where paper closure years were elusive. For example, in populous areas with more than one local paper, a peer paper may have written an article about the other paper’s closure. If archived digitally, this would have increased the discoverability of the paper closure year. In aggregate, such a scenario would have potentially skewed the confirmed closure sample toward populous areas. Thus, differences in means testing was run across the demographic control variables (Table 3.2) to compare the subset of counties with successful closure year searches to those where searches failed. Independent two sample t-tests confirmed these subsets were not significantly different at a level of $p < 0.05$ across measures of Education, Age, Income, Number of Papers, Per Capita Papers, Population, and Rural Score in 2004 (as constructed in Table 3.2). This finding lent support to the internal validity of the sample of found-closures compared to the population of all-closures.

To enable analysis of U.S. House elections, papers were also aggregated by congressional district using geographic correspondence data from the Missouri Census Data Center’s *Geocorr 2014* (Missouri Census Data Center, 2019). County-year papers were

summed to give congressional district-year papers if the county had *any overlap* with the congressional district for the relevant “Crosswalk Data Year” (Table 3.1), based on the assumption that local papers would cover all congressional races with relevance in their approximate area of distribution. Some district-year paper values will undercount the number of local newspapers because counties with “papers added” were excluded. Given that the methodology here uses exclusively fixed effects approaches for district-year analysis, undercounting from the initial wave should not interfere with results, and remains preferable to the noise created by including faux “added papers”. Put another way, while every local newspaper “closure event” included is accurate for that county-year or district-year, the total number of local papers for that case may undercount the actual number. Ideally, this analysis would have complete data on every closure, but it nonetheless remains robust in its focus on the *differences* over time within cases, each of which reflects a confirmed local paper closure relative itself in past years.

The relevant year of analysis for papers is that leading up to the election day, which is traditionally November of even-numbered years. However, the U.S. Census aggregates data only by congressional district boundaries during the congressional term (U.S. Census, 2019). This creates a mismatch between district boundaries used for the demographic and papers data in a given calendar year: newspapers are creating content based on the district boundaries for the coming election, but census data are based on the district boundaries for the current Congress and previous election. Grouping data based on district boundaries for the same Congress was selected as a superior approach than using district boundaries for the same calendar year. As a result, demographic data used for a given analysis year lags one year behind papers data for the 2014 election of the 114th Congress will be associated with 2015 demographic data in order to obtain consistency between district boundaries pre- and post-election (Table 3.1). For example, papers data for the 114th Congress (presiding in 2015

and 2016). Because year-over-year demographic changes are generally small, this is not expected to skew results.

Table 3.1: Congressional District-Year Data Construction

Congress	Term	Election Year	Papers Data Year	Demographic Data Year	Crosswalk Data Used	Cycle Type
109 th	2005-2006	2004	2004	2005	Counties-111 th *	Presidential
110 th	2007-2008	2006	2006	2007	Counties-111 th *	Off-Year
111 th	2009-2010	2008	2008	2009	Counties-111 th *	Presidential
112 th	2011-2012	2010	2010	2011	Counties-112 th *	Off-Year
113 th	2013-2014	2012	2012	2013	Counties-113 th	Presidential
114 th	2015-2016	2014	2014	2015	Counties-114 th	Off-Year

*109th - 112th congressional district boundaries are the same except for those in Georgia and Texas, and thus the county to district crosswalks were performed with County-Year to 111th Congressional District Boundaries for election years 2004-2010.

As argued in *Chapter 2*, local newspapers play unique and leading roles in local media ecosystems, and focused analysis on local newspapers alone is an important mode of analysis. Notwithstanding, a clear addition would have been to incorporate and explore data on other local media. This possibility was investigated, particularly with regards to radio, television, and broadband. Local-level data were not available for broadband, computer, and internet use in years preceding 2013 (U.S. Census Bureau, 2019). Efforts to project subnational statistics prior that year only cover approximately 10% of all counties (Tolbert et al., 2015). Television data, by contrast, were rich and longitudinal, but are largely organized around The Nielsen Company’s Designated Market Area (DMA®) Regions, for which the purchasing rights were outside the scope of feasibility for this analysis (The Nielsen Company, 2019). In theory, a license for DMA’s could be effectively combined with Federal Communication Commission (FCC) Digital Television (DTV) data to create local-level variables describing the levels and type of television access for future analyses (FCC, 2019). AM and FM radio data were also explored (FCC, 2019), but ultimately the degree of heterogeneity in broadcast ranges made the calculation of geographic correspondence between counties or congressional districts and radio coverage zones outside the scope of this

analysis². Finally, community news websites were considered, but were ultimately excluded from this analysis because evidence suggests that sustained, meaningful citizen journalism websites are thus far still uncommon (Hindman, 2011). Future research with more limited temporal or geographic scopes should consider incorporating these media.

Demographic Data

Understanding the factors which affect voter behavior is a central project of political science and political forecasters in the U.S. A wealth of literature tries to model voter behavior and public opinion based on everything from demographics, to attitudinal variables, to weather on voting day, and more (Smets and van Ham, 2012; Geys, 2006; Green and Shacher, 2000; Cassel, 1999; Gerber and Rogers, 2009; Highton, 2017; Powell, 1986; Green and Gerber, 2015). Having widely considered existing literature, this thesis followed Simpson (2018) by again using two major meta-analyses of factors affecting voter turnout—one on individual-level factors (Smets and van Ham, 2012) and one on group-level factors (Geys, 2006)—to define the initial candidate variables to include as model controls. Those factors found to be significant at ten percent or more were eligible for inclusion, and following a search process to identify data expressing those concepts at the county-level over the period of study, eligible variables with sufficient data were included as model controls: Age, Education, Income, Marital Status, and Rural Score (U.S. Census Bureau, 2019; USDA, 2019). Variable construction and sourcing for these data are listed in Table 3.2. Factors consistently found to have no effect on voter turnout in U.S. literature over the past few decades—such as ethnicity and gender—are not included here, past analyses have often been theoretically and methodologically limited in this respect. The changing politico-demographic spectrum of candidates and voters may compound such limitations, and thus

² A beautiful and illustrative example of a one component of this complexity—public radio broadcast ranges—can be found at publicradiomap.org (Filer, 2019).

quickly date this approach. Backwards elimination regression confirmed inclusion of each control variable on a test using 2004 county-years and voter turnout rates.

As noted in Table 3.1, Census data construction of congressional districts necessitates the use of demographic data lagged one year after the election year in which papers are tabulated.

Table 3.2: Construction of Control Variables

Variable	Definition	County-Year Construction Pre-2010	County-Year Construction Post-2010	District-Year Construction
Age	Median Age	U.S. Census, 2000	ACS Estimates, exact years	ACS Estimates, year following election
Education	% of population age 25+ holding a bachelor's degree or greater	U.S. Census, 2000	ACS Estimates, exact years	ACS Estimates, year following election
Income	Median Household Income in tens of thousands of 2016 U.S. dollars [‡]	U.S. Census Income and Poverty Tables (IPE), exact years	U.S. Census Income and Poverty Tables (IPE), exact years	ACS Estimates, year following election
Marital Status	% of population ages 15+ who are currently married	U.S. Census, 2000	ACS Estimates, exact years	ACS Estimates, year following election
Rural Score	Integer score from U.S. Dept. of Agriculture describing degree of rural/urban-ness: 1 (Metros of 1 million+) to 9 (Fully rural or < 2,500 urban pop.)	USDA Rural Scores, 2003	USDA Rural Scores, 2013	Not Used: Congressional Districts vary in Rural Scores

Variable construction columns list: Data Source, Data Year. Where data were available for all necessary years, "exact years" is printed. Where only one year is listed, data were only available for that one year at a county level, and are used for all years in that category (Data Source, 2000). American Community Survey is abbreviated ACS. ‡ = Median household income adjusted for inflation to 2016 USD using annual averages from historical Consumer Price Indices (Bureau of Labor Statistics, 2018).

The goal of this analysis was not to advance precision in the prediction of the civic behaviors under study, and thus extensive critical discussion of the relationship between voter behaviors and demographics is outside the scope of this thesis. However, an overview of conventional thinking on these variables is as follows (Simpson, 2018, pp 25; Wolfinger et al., 1980; Smets et al., 2012): Voting has the characteristics of a habit-forming behavior, both

socially and logistically (Smets et al., 2012; Green and Shachar, 2000). Voting administration can be complicated and opaque, and those who have voted before at their current address are expected to face fewer barriers than those who are new to a voting area. Age, degree of ruralness, and marital status all inherit this logic. Older voters are generally expected to vote at higher rates (McDonald, n.d.), because they are more likely to have voted before—and thus have lower “start-up costs” than younger voters. More rural areas are generally expected to vote at higher rates, due to higher levels of population stability as compared to urban areas (Miller et al., 2012). Areas with higher proportions of married persons are usually associated with higher levels of voter turnout because marriage is also associated with population stability. Income and Education fall more-so under resource theories of voter turnout: higher income individuals possess greater financial resources, which may ease the logistical complications of voting (e.g., arranging childcare and transportation), and individuals with higher levels of education are generally believed to possess greater access to civic information that would enable them to vote and form political opinions (MIT, 2013; Wolfinger et al., 1980; Smets et al., 2012). Thus, while these descriptions are necessarily reductive as compared to the rich literature that exists on demographics and political participation, note broadly that stability and resources are understood as important factors that drive civic participation.

Finally, as discussed, the social processes under study are dynamic, complex, and heterogeneous across place. While smaller-scale studies may be able to use sampling data, the low populations of many of the rural areas included in this study restricts this analysis to population data. This limits the scope of variables that can be included in the model, because attitudinal variables such as political efficacy are unavailable for small population areas. However, this analysis gains power in its ability to accurately reflect the political composition

of the U.S., wherein power is distributed not only by population, but also by geographic space.

Research Design

One-way case fixed effects regression models were selected as a means to minimize omitted variable bias while directly addressing the research questions at hand. This selection was made with an understanding of both the inherent data limitations present in longitudinally studying small-population areas at scale and the challenge of arguing for causality in non-experimental settings (Allison, 2009; Halaby, 2004). Case fixed effects panel models are a statistical strategy, common in econometrics, that focuses on change *within* cases, rather than *between* cases (Dranove, 2012; Allison, 2009; Wooldridge, 2012). In doing so, each case serves as its own control case: response variables for years where the event of interest occurs—in this case, a local newspaper closure—are compared to variable levels within the same county or district over time. Case fixed effects strategies eliminate bias caused from time-invariant characteristics outside the model, making them an appropriate tactic for grappling with the specificity of geo-political quirks between places (Allison, 2009; Clark and Linzer, 2015), and the disparity of confirmed-closure years between cases. This reduces concern over omitted variable bias from static unobserved factors—and perhaps even partially for slow-to-change attitudinal or cultural variables—that are likely to affect civic behavior but cannot otherwise be operationalized in this analysis. Fixed effects linear regression and conditional logistic regression, which approximates a logistic fixed effects model, are used as needed for continuous or binary response variables, respectively.

Note that one-way fixed effects (henceforth “FE”) strategies are chosen to fit the data and research question, which seeks rigorous *and* interpretable answers to how various measures of civic engagement and polarization change in response to local paper closures within individual counties and districts over time. Two-way FE models would be more

appropriate if the research question was seeking to understand a case's relationship between papers and civic behavior, on average for the case over time, *in comparison* to the relationship between papers and civic behavior, on average for other districts over time. This complexity of interpretation is reflective of Kropko and Kubinec's (2018) argument that two-way FE models are difficult to interpret at best, and inappropriate and actively unidentifiable at worst. They explain:

The two-way FE model appears, at first, to be an elegant option for achieving greater degrees of causal identification with observational data because it removes omitted variables that are fixed across cases and omitted variables that are fixed over time. However, the two-way FE model does not isolate either the cross-sectional or temporal variance in the data, but rather averages across the two dimensions. As a result, while it is possible to interpret coefficient point estimates from two-way FEs, these interpretations are usually difficult to conceptualize and to communicate and may not correspond to the question." (Kropko and Kubinec, 2018, p. 23)

Thus, the common belief that two-way analysis is a universally superior approach because it absorbs more variation than one-way models and is thus perceived as more stringent (Kropko and Kubinec, 2018, pp. 5), does not necessarily hold and is not pursued in this analysis.

Eligible counties without a paper closure outnumbered eligible counties with a paper closure 16:1. To account for this, matching was performed to create a balanced subset of "closure" and "no-closure" counties. Counties with a confirmed paper closure year ("closure counties") were then paired with counties without a paper closure during the period of study ("no-closure counties") using Coarsened Exact Matching (CEM). CEM is a Monotonic Imbalance Bounding (MIB) matching method consisting of a coarsening process based on either automatic or user-chosen strata (Iacus et al., 2009). CEM was chosen as a strategy in response to King and Nielsen (2019), who argue that propensity-scores are frequently counter-productive to matching goals. As an alternative, CEM mimics a fully blocked, rather than a fully randomized, experiment. CEM preprocessing is useful as it reduces the imbalance between control and treatment groups. Moreover, using a matched subset helps address the concern that decline in local media and changes in local civic behavior are both

driven by an unobserved third force. Taken together, CEM pre-processing provides an even stronger basis on which to estimate causal effects.

After exploring multiple methods for defining CEM strata and examining the theoretically important differences within variables examined, matching brackets were chosen to separate 2004 variable distributions into rough thirds (Income, Age, Education, Marital Status, and Papers) with the exception of Rural Scores, which were separated into Rural, Urban, and Suburban classifications. This coarsening provided balance between retaining a high proportion of matched cases while defining meaningful boundaries. Within strata, k-to-k Euclidean nearest-neighbor matching was used to pair no-closure counties with closure counties. Unmatched counties were then removed from the matched subset, resulting in a county-year subset composed of equal parts treatment (“closure”) and control (“no-closure”) counties. CEM pre-processing was not used for district-years, because most districts are composed of counties that included both “no-closure” and “confirmed-closure” counties.

Following descriptive exploration, correlations and multiple linear regressions were run to examine relationships between local newspapers and variables of interest within years and as a time-collapsed group. Outliers were identified, examined, and iteratively removed from linear model explorations to understand case influence. To achieve balanced panels throughout, only eligible cases with complete data in every year were included.

One-way case FE approaches were then run on variables of interest alone, controls alone, and variables of interest and controls together (Croissant and Millo, 2008). To confirm appropriateness of the approach, FE models were run alongside random effects (RE) and pooling models. Hausman tests—which compare the consistency of estimators between statistical models and the underlying data—were performed to confirm the suitability of FE estimation over other models (Greene, 2008). Goodness-of-fit is reported both as the

projected model R^2 and the full model R^2 , as well as their adjusted counterparts. The projected model R^2 expresses the variance explained by the model when the fixed effects are not included, whereas the full model expresses the goodness of fit with individual time-fixed effects included (Endsley, 2016). Considering the heterogeneity between cases, full model R^2 s will regularly express poor fit, whereas projected models will more accurately address the model fit in relationship to the research question. Thus, only full model R^2 s will be discussed in relation to the value of adding variables of interest.

Further diagnostics included Q-Q plots and histograms to check for normality in error distribution, as well as fit-residuals graphs and Breusch-Pagan tests to identify heteroscedasticity. Influential observations were identified and investigated by calculating and plotting the leverage of observations on the model. Breusch-Godfrey/Wooldridge tests were used to check for serial correlation. Where both heteroscedasticity and serial correlation were present, robust covariance matrix estimation was run to produce heteroscedasticity and autocorrelation consistent (HAC) estimators (Arellano, 1987; Torres-Reyna, 2010; Zeileis, 2004). Models are printed with resultant HAC estimators, clustered standard errors, and associated F-statistics, as noted in tables. Finally, multicollinearity was checked by running variance inflation factor (VIF) scores on the OLS version of the model, as recommended by Endsley (2016) as a work-around to calculating tolerance outside of the *lm* package in R. Problematic diagnostic results that were not otherwise resolved are noted throughout the analysis. Broadly, models do not include problematic outliers, significant multicollinearity between variables in OLS regressions, or normality issues, but did always indicate heteroscedastic and serial correlation issues, as might be expected given the nature of the data. These issues are addressed consistently with HAC estimators, and are discussed as such. Outstanding concerns and limitations are noted in the discussion.

This discussion consisted of the overall methodology applied to analysis, and details on the papers data and demographic controls. Details on construction of response variables and hypothesis-specific methodological notes are presented preceding a discussion of results in each of the following results chapters.

Chapter 4: Civic Disengagement

In order to test whether local newspaper closures drive civic disengagement in federal-level elections, analyses were run to examine the relationship between voter turnout and differences in local newspapers within counties and House district over time. This chapter further examines the literature on mechanisms for the relationship between local newspapers and civic engagement before a presentation and discussion of results.

Literature

Civic engagement encompasses a broad range of interpersonal and institutional activities that are relational to other social systems and varied by context (Norris, 2001, 2009; van Deth, 2016; McLeod et al., 1996; Coleman, 2013). While voter turnout captures only one institutional axis of engagement, it is a useful proxy in that it has available data and established associations with other types of participation (McClosky, 1968; Burns et al., 2001; Verba et al., 1987; Putnam, 2000). Although depressed relative to other points in the 20th century, national voter turnout levels have been steady over the past two decades (DeSilver, 2017).

Having surveyed a broad range of literature on drivers of voter turnout, Simpson (2018) synthesized the following mechanisms through which local newspapers are expected to influence voter turnout: information, democratic accountability, social cohesion, and local interpretation.

At a base level, information on electoral contests, voting logistics, and candidate options are necessary for participation (Simpson, 2018, pp. 12). Informational models of

voting established under rational choice frameworks show that voters will abstain if they feel uninformed, even in the presence of candidate preferences (Matsusaka, 1995; Feddersen et al., 1996, 1997). Although local newspapers are not the most popular source that Americans turn to for their information on House or presidential elections (Mitchell et al., 2017), local newspapers are one provider of election information. A robust body of literature supports the informational model: Gentzkow, Shapiro, and Sinkinson (2011) found that a county's first newspaper entrant between 1869 and 1928 increased voter turnout by one percentage point (p. 2981). Lawless and Hayes (2015; 2018) linked newspaper coverage of midterm House elections to citizen knowledge of candidates and likelihood to vote, an effect which persisted when controlling for partisanship and campaign spending. Evidence from Shaker (2013) and Schulhofer-Wohl and Garrido (2009) on elections following closures of the *The Cincinnati Post*, *The Rocky Mountain News* and *The Seattle Post-Intelligencer* corroborated the importance of local newspapers through reduced voter turnout. Simpson (2018), a predecessor to this study, analyzed turnout rates in presidential, congressional, and gubernatorial elections within and between UNC cross-sections (2004, 2014, and 2016) to demonstrate a significant, positive association between rates of newspapers per capita and higher turnout across election levels.

A second mechanism through which local newspapers are expected to impact voter turnout is their role in providing democratic accountability. Although evidence suggests that local journalism does not always fulfill the cultural image of the press as a righteous democratic watchdog (Cook, 1998; Nielsen, 2015), research on the relationship between democracy and local papers often describes positive relationships in terms of providing government accountability (Snyder et al., 2010; Shaker, 2014; Nielsen, 2015; Hamilton, 2016; Boix et al., 2003; Gao et al., 2018). Strömberg and Snyder (2010), for example, suggested that a lack of watchdogging from local newspapers was responsible for declines in

member participation on congressional committees following the closure of a local paper. Without such checks on power, government corruption is likely to increase, catalyzing feelings of distrust and dissatisfaction that ultimately drive lower voter turnout when such corruption is uncovered (Peters et al., 1980; Welch and Hibbing, 1997; Birch, 2010).³

Thirdly, local papers are a contributor to social cohesion—the state of individuals being well integrated with and connected to social groups—which is positively associated with voter turnout. In their roles as a contributor to community narrative and a platform upon which social and civic groups can organize themselves, local newspapers are positively associated with social cohesion (Kim and Ball-Rokeach, 2006; Beaudoin and Thorson, 2004; Yamamoto, 2011; Jeffres et al., 2007; Viswanath et al., 1990). Social cohesion, in turn, enables opinion formation and organizing, and generates feelings of care that might motivate individuals to act in protection of social values—all of which are found to facilitate voter turnout and other forms of civic engagement (Verba et al., 1995; Yamamoto, 2011, p. 25; Rosenstone and Hansen, 1993; Putnam, 2000; Coleman, 2004).

Finally, as discussed in *Chapter 2*, local newspapers have a unique local interpretative capacity. Local interpretation is hypothesized to facilitate greater connection to and understanding of how national issues might affect local context. Such an understanding might be motivating in itself to turnout: trust in the political system and voter turnout are strongly associated, and a lack of trust would thus be expected to result in lower voter turnout (Birch, 2010). But moreover, consuming information from a trusted source might result in citizens becoming more deeply informed: readers retain information and learn better when they trust information sources (Miller and Krosnick, 2000; Druckman, 2001; Silence et al., 2004; Tsfati and Cappella, 2003; Tsfati and Cohen, 2003; Tsfati, 2010). Per reasoning on the role of

³ Mirroring the earlier discussion of political efficacy's role in determining voter response to distrust, this proposition is somewhat paradoxical, as distrust arising from corruption could also drive either disengagement or reform-oriented engagement. However, the response of mobilization in response to discovery of corruption is not well understood in the literature, and a tendency toward disengagement is thus assumed here.

information in driving turnout, a better-informed citizen is more likely to vote. Thus, the local interpretative capacities of local newspapers are hypothesized to work with trust on two levels: 1) engendering greater trust than national papers, which results in readers becoming better informed, and thus becoming more likely to vote; and 2) local newspapers may be better positioned to illustrate how the national political conversation is locally relevant, which may stave off feelings of disconnection and alienation from the political system, which may prevent a loss of trust.

Thus, via mechanisms of information, democratic accountability, social cohesion, and local interpretation, local newspapers are expected to be positively associated with voter turnout. Appropriately, this analysis hypothesizes that:

H1: Reduced local news production will be associated with reduced voter turnout.

Methods

In terms of variable construction, “Newspapers” is simply a count of newspapers headquartered in a particular county during an election year, or the sum of papers in counties that overlap with the congressional district boundaries for the incoming congress.

Voter turnout is constructed as the ratio between the number of votes cast and the number of persons over 18 in the district or county, listed according to convention as percentage points (county-year source: Leip, 2018; district-year source: MIT, 2019). Though common in the literature, this construction is imprecise; the voting-age population in the U.S. is distinct from the voting-eligible population, where felons, non-citizens, and other who cannot vote are accounted for (McDonald, 2019). Small-area estimates are unavailable for these populations over the period of study, and thus this analysis is unable to improve its estimation by using the voting-eligible population.

Regarding cases analyzed here, presidential models were run on a CEM-matched subset of counties matched across demographic variables and number of newspapers in 2004, and matched by those with and without a closure between 2004 and 2016. These counties

were selected from a pool of all U.S. counties common over the period of study without the “paper-added” quirk of the UNC dataset (2,754 possible counties out of ~3,108 total counties⁴). Differences in means testing across variables failed to reject the hypothesis that the 2,754 counties without “added papers” were statistically significantly different from the total universe of 3,108 counties in 2004. Differences in means testing also failed to reject the hypothesis that the subset of cases with a “confirmed closure” was statistically significantly different from the approximately 1,500 cases with any paper closure.

In parallel, models are run on 354 of the 435 House districts that elect voting members to Congress. Districts were initially excluded if they did not have a structurally-competitive regular election in any cycle during the period of study, and then also removed if any district-year lacked complete model data to achieve balanced panels. This process excluded special elections—out-of-cycle elections called by state governors to fill vacancies caused by death, resignation, impeachment, court-order, recounts, or other vacation of office—approximately sixty of which occurred between 2004 and 2016. This process also excluded no-contest districts—as in those where a challenger did not face an incumbent in the general election—because they created theoretically-dissonant outliers for voter turnout variables (voters are not incentivized to turn out if the possibility for competition does not exist). Finally, due to the spatial two-party assumptions used in the construction of the party vote share margin variable, a few remaining districts are dropped for arrangements other than one Democrat vs. one Republican general-election House candidate. Comparison between other types of contests (e.g., Democrat vs. Democrat; Independent vs. Republican) might lead to misleading results in terms of interpreting party vote margin and ideology variables. In

⁴ This is with the sole exception of Loving County, Texas, population 45 persons in 2004, which has the curious characteristic of regularly casting more votes than there are residents (Colloff, 1997). This feature made Loving theoretically and statistically problematic—earning high influence scores in exploratory OLS regressions—and Loving was thus removed as a matching candidate.

total, eighty-one districts are dropped. Districts are not run through CEM pre-processing, as they contain an amalgamation of paper “closure” and “no-closure” counties. Finally, note that while presidential analysis extends to 2016, House analysis stops at 2014 due to a lack of ideology data for the 2016 House races at the time of this analysis.

Thus, one-way case-FE regressions are run on 354 House districts and 250 matched-counties.

Results

As noted, there is substantial variation in the composition and trends in U.S. counties and House districts. County populations within the analysis subset range from a few hundred to a few million; district populations range from approximately 400,000 to approximately 1 million. The FE models used here compare each case to itself over time, thus capturing the different case-specific trends that might be collapsed by OLS models. In contrast however, for purposes of brevity, summary statistics are discussed below as the *average change* (Δ) over the period of study.

The average change in newspapers between 2004 and 2016 is -0.5 for the 250 counties used for analysis of presidential races, as expected from the CEM subset of counties with a paper closure and like counties without (Table 4.1). For House districts, the average loss was approximately six local newspapers during the 2004 to 2014 period of study.

In terms of county-level voter turnout, the average change between the 2004 and 2016 presidential elections was -1.61 percentage points. For the 354 House districts eligible for analysis, the average change in district-level voter turnout between 2004 and 2014 is -21.31 percentage points. By contrast, the average district-level change between the 2006 and 2014 elections was -4.06 points (SD: 7.14, N=354). The difference in these figures highlights an important characteristic of House election turnout: contests held in presidential years show consistently higher turnout than those held in the “off-year” elections that fall every two years in the middle of the four-year presidential term (Rosenstone and Hansen, 1993). A county

with approximately 50% turnout in a presidential year might commonly expect turnout closer to 35% in an off-year House election (Leip, 2018; MIT, 2018). Therefore, where possible, models were run in sets of three: presidential election panels (2004, 2008, 2012, and 2016), All-Year House election panels (2004, 2006, 2008, 2010, 2012, 2014), and Off-Year House election panels (2006, 2010, 2014). Where not presented together, remaining models are included in the appendices. Finally, note that the standard deviation for voter turnout reflects the mix of trends: for presidential and House races, while the average trend indicated declining turnout, approximately 1/3 of counties and 1/3 of districts witnessed increasing turnout.

Populations in the counties and districts under study became, on average, older, more educated, and more urban. Household income decreased by an average of approximately \$900 USD per county and \$1,800 per district (median household income also decreased, at approximately -\$1,400 per county and -\$1,600 per district). The proportion of persons who are currently married decreased on average 6.51 and 5.59 percentage points for counties and districts, respectively.

Table 4.1: Summary Statistics for Disengagement Models

	Presidential Models		House Models	
	Counties: Change between 2004 and 2016		Districts: Change between 2004 and 2014	
	Mean	Std.Dev.	Mean	Std.Dev.
<i>Output Variable</i>				
Δ Voter Turnout [†]	-1.61	4.39	-21.31	7.72
<i>Input Variable</i>				
Δ Newspapers [‡]	-0.50	0.50	-6.03	8.28
<i>Controls</i>				
Δ Age	3.54	2.11	1.64	2.98
Δ Income	-0.09	0.45	-0.18	1.24
Δ Education	4.38	2.54	13.59	8.64
Δ Married	-6.51	3.39	-5.59	4.88
Δ Rural Score	-0.10	0.59		
N	250 counties		354 districts	

All figures have been truncated to two decimal points. Detailed notes on control variable construction are presented in Table 3.2. [†] = Voter turnout is listed in percentage point units, and thus Δ Voter Turnout is the percentage point difference between unit-years. [‡] = Newspapers is listed as the count of local newspapers for a unit-year. Δ Newspapers is change in the count of newspapers between unit-years.

Local newspapers were found to have a significant positive relationship with turnout in presidential election (Adj. Full Model $R^2= 0.94$, $p<.001$) and House Off-Year election panels (Adj. Full Model $R^2= 0.99$, $p<.001$) (Table 4.2). Accordingly, one-way within estimation suggested that local newspaper closure was associated with a 0.69 percentage point drop in voter turnout in presidential elections and a 0.27 percentage point drop in voter turnout in House elections within cases over time. Hausman tests confirm the suitability of FE over RE approaches ($p<.001$). As per convention, older, higher income districts were associated with higher turnout. Contrary to convention, education had a negative relationship with turnout in counties for the presidential panel. As noted in Appendix A, Table A.1, newspapers did not have a significant association in the All-Year House election model (2004, 2006, 2008, 2010, 2012, 2014) (Adj. Full Model $R^2=0.52$, $p<.001$). Again, Off-Year and All-Year House election models were run separately due to the high degree of seasonal variation in voter turnout for elections in presidential years and off-years. Analyzing

presidential and off-years together produced highly non-normal, bimodal distribution of residuals (Appendix A, presented with Table A.1), which supports the strategy of omitting the All-Years panel from discussion in relationship to turnout.

Table 4.2: Fixed Effects Model Predicting Voter Turnout in Presidential Elections by County (2004-2016) and Off-Year House Elections by District (2006-2014)

	Presidential Panel †	House Off-Years Panel†
	2004, 2008, 2012, 2016 county-years	2006, 2010, 2014 district-years
Newspapers	0.69*(0.31)	0.27***(0.03)
Age	0.06 (0.08)	0.54***(0.11)
Income	0.64 (0.46)	1.18**(0.36)
Marital Status	0.07 (0.05)	0.14 (0.09)
Education	-0.20**(0.07)	-0.03 (0.14)
Rural Score	0.34 (0.33)	
Full Model R ²	0.94	0.99
Adj. Full Model R ²	0.93	0.99
Projected Model R ²	0.07	0.21
Adj. Projected Model R ²	-0.20	-0.18
F-statistic	8.48 (df=6;249)	28.99 (df=5;353)
N	1000	2124
Number of cases	250 counties	354 districts
Number of time periods	4 elections	3 elections

***p-value < 0.001, **p-value < 0.01, *p-value < 0.05, ^p-value < 0.10. Standard Errors are listed in parentheses. Detailed notes on variable construction are presented in Tables 3.2 and 4.1.

† Model uses HAC (Arellano) estimators, clustered standard errors, and associated F-statistics.

Discussion

In studying the impact of the loss of local newspapers on civic engagement, it was hypothesized that local newspaper closure would drive declines in voter turnout (H1). FE panel models indicate strong support for rejecting the null hypothesis in favor of this alternative. Modelling county-level turnout for presidential election years on a matched-pair subset of closure/no-closure counties, findings indicate a significant 0.69 percentage point turnout decrease per newspaper closure within counties over time (Table 4.2). Predicting district-level turnout based on local newspaper closure on all eligible congressional districts during off-year elections parallels this finding: each paper closure drives approximately a

0.27 percentage point turnout decline in district-level voter turnout. Although direct comparison of unstandardized coefficients is not productive,⁵ note that, because districts are usually more populous than counties and usually have more newspapers, the magnitude of effect should not necessarily be interpreted as smaller than in presidential models. Both models explain a high, comparable degree of within-case variation (Presidential Ad. R^2 : 0.93; House Off-Year Adj. R^2 : 0.99). Finally, recall that the matched-pairs design for the presidential model—which is run on a subsample of CEM-paired counties with and without a paper closure—suggests that it is unlikely that turnout declines and paper closure are merely being driven by the same unobserved third force.

This finding is remarkable in that it links local newspaper closure to voter turnout not only in House elections—which garner limited district-specific national media (Lawless et al., 2015)—but also in presidential elections—which have abundant national media. This finding indicates support for the idea of local interpretation as a key piece of how individuals navigate their civic information environments, and indeed suggests that it is potentially dominant over other mechanisms. Were the role of local newspapers simply to provide information or local-level democratic accountability, a loss in local papers might not be expected to have an effect on national races—particularly presidential races—given the abundant national media coverage for the presidential election cycle. The finding that local newspapers affect turnout, particularly in presidential elections, supports the theory that local media are playing an essential role in interpreting and localizing political, even in the context of a high-choice media environment.

⁵ In OLS regression, variables could be standardized to produce scaled coefficients that are able to be compared. For FE panel models, however, because the focus is within cases, standardization across the sample would be counterproductive. Furthermore, although standardization could be pursued for each case individually over time or by calculating a pooled standard deviation across panels, these strategies produce standardizations that are difficult to interpret and to justify. Thus, coefficients within models cannot be directly compared, and direct comparison across models is not possible. The magnitude of change for newspapers between models is only commented on at a very general level and with detailed understanding of the underlying data, and is not a substitute for a true standardization/comparison strategy.

In each case, the magnitude of turnout changes is small. Indeed, the association of a local paper closure with a turnout change smaller than one percentage point within cases may seem negligible. However, the margins at which two-party U.S. presidential and House general elections are won is also small scale, and the distribution of power within districts and electoral colleges often makes small vote share margins very important. For example, in their oft-cited analysis of weather on voter turnout, “The Republicans Should Pray for Rain: Weather, Turnout, and Voting in U.S. Presidential Elections” (Gomez et al., 2007), Gomez, Hansford, and Kraus find that rain reduces voter participation by just under one percent and suggest that if it had not rained in Florida on election day in the 2000 presidential election, Al Gore would have won the presidential election over George W. Bush (Gomez et al., p. 660). The small magnitude of changes that local newspaper closure drives in voter turnout within counties or districts could make a difference in election outcomes.

As expected given the cyclical variation in turnout between off-years and presidential election years, House All-Year election panels do not show a significant role for papers on predicting turnout within cases (Appendix A, Table A.1). Rather, diagnostics indicated the model was non-normal with a bimodal distribution of residuals, reflecting the cyclical variation in turnout (Appendix A, accompanying Table A.1). In aggregate and in comparison to the consensus in coefficients of the presidential and House Off-Year models, the House All-Year model is not a well-fit description of voter turnout, and will not be interpreted in relation to H1.

Thus, models provide strong evidence to reject the null hypothesis in support of the alternative hypothesis (H1), establishing that paper closure is expected to drive declining voter turnout in presidential and House elections.

Chapter 5: Polarization

In addition to civic disengagement, anti-institutional voting behavior is hypothesized as another near-term rational response to feeling disconnected from national political events in the wake of local newspaper closure. Making the assumption that anti-institutional, reformist candidates will be more ideologically extreme than moderate, status-quo candidates, this response may contribute to the effect of political polarization. Moreover, loss of local newspapers is sometimes characterized as loss of an ideologically moderating force in comparison to national newspapers (Darr et al., 2018), which would also contribute to the effect of polarization. Thus, to explore these relationships, the following chapter reviews existing literature before presenting and discussing a series of models that speak to partisan vote share, ideological extremity, and voter turnout's relationship to these variables.

Literature

Political polarization is alternatively described as the distance between the ideologies of the two major parties (Democrats and Republicans) or the degree to which American voters consistently adhere to one of these parties (Pew, 2014). Polarization in both senses has been on the rise since the 1970s (Levendusky, 2013; Bafumi and Shapiro, 2009), and is believed to have many causes (Barber and McCarty, 2013). Hopkins (2018) argues that a contributor to polarization is actually the absence of meaningful policy preferences and political choices outside of the two parties. Abramowitz and Webster (2015) argue that polarization is better explained not by affinity for one's own party, but by dislike for the opposite party.

Upon the closure of a local paper and the loss of its interpretive function, one hypothetical response is anti-institutional voting behavior: pending sufficient political efficacy to continue voting, a voter who does not perceive the system as serving "people like her" may select candidates that are more reformist than more moderate toward the status quo. In such a scenario, the preferred candidate for the voter is assumed to be more ideologically extreme than moderate choices. On a unidimensional spatial politics spectrum, candidates with more partisan views in either direction would be associated with more extreme rather than more moderate policy positions. Thus, a rise in

disconnection from and distrust of national political systems in the wake of losing local newspapers is expected to lead to heightened polarization due to increases in the ideological extremity of voter policy preferences.

Alternatively, local newspaper closure has been associated with increases in political polarization due to the loss of its moderating effect, in the absence of which voters substitute in national media that is argued to be more partisan. Darr, Hitt, and Dunaway find that local newspaper closure is associated with a nearly two percent decrease in split-ticket voting⁶—an indicator that voters have mixed policy preferences that do not consistently correspond to one party (2018). Furthermore, Hayes and Lawless (2015) suggest that local newspaper closure will contribute to political polarization not through any substantive change in ideology, but rather through the decrease in voter turnout that, ala Prior (2007), would result in a higher proportion of voters with strong political interests and policy preferences at the pools.

To explore the effects of local newspaper closure on dimensions of voter polarization in terms of voter partisanship, candidate polarization in terms of ideological extremity, and the possibility that the effect of polarization is caused by selection effects in terms of reduced turnout, this analysis hypothesizes the following:

H2a: Reduced local news production will be associated with greater differences in partisan vote share.

H2b: Reduced local news production will be associated with greater differences in partisan vote share in areas with low voter turnout.

H2c: Reduced local news production will be associated with the election of more ideologically extreme House candidates.

Methods

Party Vote Margin was constructed as the percentage point difference between the vote share garnered by the Democratic and Republican party House candidates. It serves here

⁶ “Split-ticket” voting describes the selection of candidates from a mix of parties for different seats on a ballot, as opposed to voting for candidates of the same party.

as a heuristic for the degree to which support for a political party is concentrated within a given geographic unit, and has a popular association with ideology. Colloquially, this is referred to in American political discourse as an area being “redder” or “bluer”, referring to the colors associated with the Republican and Democratic parties, respectively. When used to describe a voting area, the degree of “redness” or “blueness” generally refers to how dominant either party is. In this paradigm, saying an area is growing “redder” or “bluer” over time is used to express the growing strength of the party within the area, but is also frequently used as a proxy for the reigning ideology. Political discussants will associate “redness” or “blueness” not only with the dominance of a particular party at the ballot box, but with the extremity of that area’s ideology. In other words, a “red” area that votes ninety percent republican is sometimes perceived as more ideologically conservative than a “red” area that only votes fifty percent republican, and is referred to as “redder”. Though the validity of this use can be contested—it’s possible that the ninety percent of republican voters are all, in fact, moderates who support a moderate republican candidate—this analysis acknowledges its dominance as a mode of perceived polarization in American political discourse, and will discuss results on both levels of interpretation.

As constructed, a smaller party vote share margin indicates closer elections results, wherein Democratic and Republican candidates garner similar vote shares. Larger party vote share margins indicate that one party was more dominant. In other words, large party vote share margins are used as a proxy for a unit being more “polar” than areas with small party vote share margins.

The Ideology variable was constructed based on the Campaign Finance Scores (CFscores) calculated by Adam Bonica for the Database on Ideology, Money in Politics, and Elections (DIME) (Bonica, 2015). More than 130 million campaign finance and political donation records were used to estimate the ideal point scores of political candidates and

contributors (Bonica, 2014). Bonica persuasively argues that perceived ideology is central to the relationship between donors and candidates, and shows that such a relationship can be exploited to map the ideologies of both parties (Bonica, 2014). The resultant CFScores rely on a spatial model of politics: a theoretical approach to understanding the behavior of political actors as played out on a uni-dimensional policy space, where actors' preferences are based on ideological proximity to their ideal points. Borrowing from an influential economic theory describing the incentives for firms to make products as similar as possible (Hotelling, 1929), Downs (1957) first articulated this spatial conceptualization of political parties and candidates as a way to model the behavior of political actors as players in a non-market competition. The popularity of the model drew scholars to embrace the challenge of spatial modelling of political behavior (Poole and Rosenthal, 1985, 2000; Berry et al., 1998; Cox and McCubbins, 2005; Clinton et al., 2004; Cox and Poole, 2002), particularly when it comes to political ideology (Bonica, 2014, pp "Measuring Ideology"). Bonica's DIME and CFScores are the latest innovation in the tradition of estimating spatial ideal point ideology scores, and are well-validated (Bonica, 2018, 2014; Bonica and Sen, 2017; Bonica and Cox, 2018).

Original CFScores estimate an ideal point ideology score on a scale running from -2 (liberal) to 2 (conservative), with 0 being the ideologically "neutral" point. CFScores are used here to indicate the *extremity* of ideology, which serves as a proxy for anti-institutional sentiment, based on the assumption that more ideologically extreme candidates *in either direction* are more reformist in relationship to the status quo than their moderate counterparts. Thus, the absolute value of CFScores was taken and scaled by 100 for readability. This results in an ideology variable measured on an integer on a scale of 0 to 200, where 0 reflects a representative perfectly at the midpoint of the binary political spectrum, and 200 represents someone at either the liberal or conservative extreme.

One-way case-FE regressions were used to estimate the effect of newspapers on the party vote share margin and the ideology scores of elected candidates within cases. In order to explore whether changes in polarization might be driven by substantive ideological changes or selection effects occurring at the ballot box due to lowered voter turnout (ala Prior, 2007), interaction effects were run to observe the relationship between papers in years with higher or lower voter turnout on party vote share margin within counties. Models are again run on 354 U.S. House districts and 250 matched-counties; see *Chapter 4: Methods* for a more in-depth discussion of the populations selected for analysis.

Results

Looking first to on-average trends over the period of study, party vote margin decreased an average of -2.07 points in House models and increased 10.50 points in presidential models. The absolute value of a candidate's CFscore score grew on average 17.81 units on a scale from 0 (being moderate) to 200 (being extreme). The maximum difference was 118.20 units, and the minimum was -74.60. The average change in newspapers between 2004 and 2016 was -0.5 papers for the 250 counties used for analysis of presidential races and -6.03 papers for House races. Turnout, likewise, remained -1.73 percentage points for the presidential period, -4.06 percentage points between 2006 and 2014 House off-years, and -21.31 percentage points between the 2004 presidential and 2014 House elections. Counties and districts, on average, grew older, more educated, and more urban, but saw decreases in mean and median incomes and displayed a lowered proportion of married persons over time.

Table 5.1: Summary Statistics for Polarization Models

	Presidential Models		House Models	
	Counties: Difference between 2004 and 2016		Districts: Difference between 2004 and 2014	
	Mean	Std.Dev.	Mean	Std.Dev.
<i>Output Variable</i>				
Δ Party Vote Margin [†]	10.50	13.94	-2.07	30.01
Δ Ideology Score [‡]			17.85	32.30
<i>Input Variables</i>				
Δ Newspapers*	-0.50	0.50	-6.03	8.28
Δ Voter Turnout**	-1.73	4.81	-21.31	7.72
<i>Controls</i>				
Δ Age	3.60	2.11	1.64	2.98
Δ Income	-0.09	0.45	-0.186	1.24
Δ Education	4.41	2.58	13.59	8.64
Δ Married	-6.84	3.36	-5.59	4.88
Δ Rural Score	-0.12	0.69		
N	250 counties		354 districts	

All figures have been truncated to two decimal points. Detailed notes on control variable construction are presented in Table 3.2. [†] = Party vote margin is listed in percentage point units. [‡] = Ideology score is listed in integer units from 0 to 200. * = Newspapers is the count of local newspapers for a unit-year.

** = Voter turnout is listed in percentage point units.

Newspapers were found to have a significant negative relationship with party vote margin in presidential (Adj. Full Model $R^2 = 0.83$, $p < .001$) and House Off-Year election panels (Adj. Full Model $R^2 = 0.59$, $p < .001$) (Table 5.2). For presidential elections, FE estimation suggests that the closure of a newspaper would result in a 2.15 percentage point increase in party vote margin, such that the county would be expected to grow “redder” or “bluer” with the closure of a local newspaper. The effect is mirrored for U.S. House elections in off-years: the closure of a local newspaper would be expected to be associated with a 0.36 percentage point growth in the party vote margin. Again, while direct comparison of coefficients was not pursued due to the unproductiveness of standardization in FE models, note that most districts are larger than most counties and contain more papers, and thus the magnitude of effect should not necessarily be interpreted as smaller in House elections. For the House All-Years panel, the effect was similar in strength and direction, but would only be

significant at level $p < .10$ (Appendix A, Table A.2). Hausman tests indicated the superiority of FE over RE approaches ($p < .001$). Marital status was significantly negatively associated with party vote margin within counties and districts. Education, interestingly, indicated divergent directions of effect between counties and districts. Relative to the presidential models, House models explained less of the variation within cases. Additionally, some caution must be taken regarding the size of the standard errors in relation to the coefficients, indicating that there remains a degree of imprecision in the model.

Table 5.2: Fixed Effects Model Predicting Party Vote Share Margin in Presidential Elections by County (2004-2016) and Off-Year House Elections by District (2006-2014)

	Presidential Panel [†]	House Off-Years Panel [†]
	2004, 2008, 2012, 2016 county-years	2006, 2010, 2014 district-years
Newspapers	-2.15*(0.97)	-0.36**(0.12)
Age	0.17 (0.23)	-0.68^(0.39)
Income	1.08 (1.35)	3.08*(1.39)
Marital Status	-0.48**(0.15)	-1.19***(0.36)
Education	0.52*(0.25)	-0.27**(0.08)
Rural Score	-0.25 (1.08)	
Turnout		
Full Model R ²	0.83	0.59
Adj. Full Model R ²	0.83	0.59
Projected Model R ²	0.11	0.03
Adj. Projected Model R ²	-0.18	-0.45
F-statistic	16.21 (df=6;249)	5.24 (df=5;353)
N	1000	1062
Number of cases	250 counties	354 districts
Number of time periods	4 elections	3 elections

***p-value < 0.001, **p-value < 0.01, *p-value < 0.05, ^p-value < 0.10. Standard Errors are listed in parentheses. Detailed notes on variable construction are presented in Tables 3.2 and 5.1.

[†] Model uses HAC (Arellano) estimators, clustered standard errors, and associated F-statistics.

Turnout was interacted with newspapers in an effort to understand whether papers' effect on party vote share margin varied in strength between high and low turnout counties and districts. This interaction effect was not significant in presidential (Adj. Full Model R²=

0.83, $p < .001$) or House Off-Years panels (Adj. Full Model $R^2 = 0.63$, $p < .001$), suggesting that the effects of newspapers and turnout on party vote margins are independent. For completeness, the interaction was also run with the House All-Years panel (Appendix A, Table A.3), but is not interpreted due to the non-normality and seasonal variation of voter turnout between off-years and presidential years, as established in *Chapter 4*.

Table 5.3: Fixed Effects Model Predicting Party Vote Share Margin in Presidential Elections by County (2004-2016) and Off-Year House Elections by District (2006-2014), Interacting Newspapers and Voter Turnout

	Presidential Panel [†]	House Off-Years Panel [†]
	2004, 2008, 2012, 2016 county-years	2006, 2010, 2014 district-years
Turnout*Papers	0.03 (0.03)	0.00 (0.00)
Newspapers	-4.32*(2.08)	-0.18 (0.34)
Turnout	0.08 (0.14)	-1.43*** (0.24)
Age	0.18 (0.23)	1.46*** (0.40)
Income	0.81 (1.35)	4.72*** (1.38)
Marital Status	-0.48** (0.15)	-0.99** (0.37)
Education	0.57* (0.25)	-0.31*** (0.08)
Rural Score	-0.34 (1.08)	
Full Model R^2	0.83	0.63
Adj. Full Model R^2	0.83	0.63
Projected Model R^2	0.11	0.13
Adj. Projected Model R^2	-0.18	-0.31
F-statistic	12.27 (df=8;249)	11.69 (df=7;353)
N	1000	1062
Number of cases	250 counties	354 districts
Number of time periods	4 elections	3 elections

***p-value < 0.001, **p-value < 0.01, *p-value < 0.05, ^p-value < 0.10. Standard Errors are listed in parentheses. Detailed notes on variable construction are presented in Tables 3.2 and 5.1.

[†] Model uses HAC (Arellano) estimators, clustered standard errors, and associated F-statistics.

FE models were run to examine the relationship between local newspapers and ideology of elected House candidates within congressional districts over time. For the All-Years model, newspapers were found to have a negative association with ideological extremity, such that the closure of a local newspaper will be associated with an increase in ideological extremity, but only at significance level $p < 0.10$ (Adj. Full Model $R^2 = 0.53$,

p<.001). The same effect was not observed in the House Off-Years election model, though the direction and small magnitude in effect were consistent (Adj. Full Model R²= 0.57, p<.001). Hausman tests indicated that FE were preferable over RE approaches in each instance. However, in this case, HAC estimators were a meaningful departure from the uncorrected results (Appendix B, Table B.1). The unadjusted model produced significant coefficients at a level of p<.001 for the All-Years panel and p<0.10 for the Off-Years panel, suggesting local newspaper closure drives small but significant increases in ideological extremity. Age and education were found to be positively associated with ideological extremity within districts over time

Interaction effects between Papers and Turnout were again run to determine whether turnout selection effects might be contributing to the appearance of polarization. Neither had a significant moderating effect on Ideology for either All-Years or Off-Years approaches.

Table 5.4: Fixed Effects Model Predicting Ideology of Elected House Candidates in All-Year House Elections (2004-2014) & Off-Year House Elections (2006-2014) by District

	House All-Years Panel [†]	House Off-Years Panel [†]
	2004, 2006, 2008, 2010, 2012, 2014 district-years	2006, 2010, 2014 district-years
Newspapers	-0.31 [^] (0.01)	-0.25 (0.17)
Age	1.92**(0.59)	1.74**(0.66)
Income	0.83 (1.43)	0.58 (1.57)
Marital Status	-0.56 [^] (0.28)	-0.50 (0.41)
Education	0.46***(0.09)	0.46***(0.10)
Full Model R ²	0.53	0.57
Adjusted Full Model R ²	0.53	0.57
Projected Model R ²	0.12	0.11
Adj. Projected Model R ²	-0.04	-0.33
F-statistic	21.96 (df=5;353)	13.85 (df=5;353)
N	2124	1062
Number of cases	354 districts	354 districts
Number of time periods	6 elections	3 elections

***p-value < 0.001, **p-value < 0.01, *p-value < 0.05, [^]p-value < 0.10. Standard Errors are listed in parentheses. Detailed notes on variable construction are presented in Tables 3.2 and 5.1.

† Model uses HAC (Arellano) estimators, clustered standard errors, and associated F-statistics.

Discussion

Party vote share margin—indicating the degree of concentration for party support, where low vote share margins represent moderate, evenly split districts and high vote margins indicate areas that are “redder” or “bluer”—was hypothesized to increase following the closure of a local newspaper (H2a). Models provided strong support to reject H0 in favor of this hypothesis. Models in Table 5.2 established a significant connection between papers and party vote share margin, such that after the closing of a local paper the county or district is expected to grow “redder” or “bluer” in the direction of the dominant party. Relative to the average change in party vote share by county-year ($M = 10.5$; $SD = 13.94$) and district-year ($M = -2.07$; $SD = 30.01$), the magnitude of expected change is modest. The size of the effect, however, is not unexpected, given that papers can be understood as only one of many potential factors contributing to more concentrated party dominance. By controlling for time-invariant characteristics, this analysis found a significant effect of local newspaper closure on party vote share margin in a matched subset of closure/no-closure counties. This finding strongly supports the idea that papers are driving greater differences in party vote share margin, and is evidence against the claim that newspaper closure and increase in party vote share margin might be driven by the same, unobservable third force. Results were consistent across the matched-pairs county-year analysis and the district-year analysis. This is strong evidence that a significant relationship exists between newspapers and whether counties and districts grow “redder” or “bluer” over time.

Marital status also appeared to be a significant variable in predicting party vote share margin within units over time, with a moderating effect. Both presidential and House Off-Years panels suggested that as the percent of married persons per unit increases over time, party vote share margin is expected to decrease.

Overall, presidential models did a better job of explaining within-case variation relative to the House Off-Years panel, despite having fewer significant predictors. This finding could mean that Marital Status and Education are better predictors of county-year party vote share margins than district-level vote margins. Given that counties are often, but not always, less populous and more demographically heterogeneous than their district counterparts, this is a plausible explanation. Alternatively, within the theory presented here, this finding could be interpreted as reflecting the greater geo-social distance of presidential elections relative to House elections. Perhaps the topics that take center-stage in House races are more local, and thus more inherently relatable, than presidential races—meaning that a mechanism for local interpretation would be even more important, and its loss results in greater differences that were explainable by local papers within the model.

Consistent with other analyses, newspapers were not significant in the House All-Years panel (Appendix A, Table A.2), likely due to the simultaneous analysis of presidential and off-years. Furthermore, a note of caution must be taken, in that standard errors for models in Table 5.2 are large relative to coefficients, indicating that there is substantial variation not well-captured by coefficients. Such a scenario can be anticipated in FE analysis, but the degree to which they should be tolerated is a matter of discussion. In this instance, the heterogeneity in cases and the large standard deviations in the average change in the response variable made somewhat large standard errors predictable. This analysis chose to tolerate them such that they are taken into consideration, but do not invalidate the findings presented.

In an attempt to probe at the mechanisms at play in the relationship between papers and party vote share margin, models were also run with an interaction between newspapers and voter turnout. Failing to reject the null hypothesis for H2b, models in Table 5.3 ruled out selection effects driven by lower turnout as the cause of an increase in party vote share margin, and instead indicated that the effects of turnout and papers on party vote share

margin were independent. Recall that the thinking behind examining interactions with turnout was to test for selection effects ala Prior (2007): upon the closure of a local newspapers, voters without strong political preferences may receive less mobilizing information, and be less likely to vote. Thus, with the politically-ambivalent un-mobilized or uninformed, a greater proportion of those who do go to the polls might be individuals with strong political interests. Such a scenario might result in a greater proportion of voters holding stronger views, thus giving the appearance of greater polarization at the ballot box. However, the interaction effects were not significant in either presidential or House Off-Year panels, thus failing to reject the null hypothesis that voter turnout is not a mediating factor on local newspapers' effect on party vote share margin. Were the explanation for polarization merely due to selection effects, the effect of papers would have been expected to appear stronger in areas with low turnout. In the absence of an effect, it is plausible that the moderating effect of local news is causing substantive polarization, and not just an appearance of polarization at the polls.

Finally, using the campaign finance "CFscores" from Bonica's DIME database, this analysis was able to look at the change in ideological extremity of elected House candidates. Because voter turnout was not necessary to the base model, FE models were run as both All-Year and Off-Year panels (Table 5.4). The All-Years model suggested that newspapers have a negative relationship with ideology scores of elected House candidates, but only at a significance level of $p < 0.10$. With some caution, this finding tentatively indicates that local newspaper closure would be expected to drive a small increase in the ideological extremity of elected candidates in coming election years. The House Off-Years panel, by contrast, did not show significant effects. As noted, however, newspapers were highly significant in models without robust covariance matrix estimation (Appendix B, Table B.1). In this instance, such a discrepancy indicates that heteroscedasticity, serial correlation, or both are present in the

model, but also raises question about whether the issues are driven primarily by newspapers or other variables. Indeed, when modelling ideology score on change in number of newspapers per district alone, HAC corrections did not reduce the significance of papers in predicting ideology. In aggregate, these findings provide suggestive evidence that local newspaper closure may increase the ideological extremity of elected House members. However, they also raise questions for future analyses on understanding these relationships in greater depth. Overall, this is interpreted as suggestive evidence to reject H_0 in favor of the polarizing relationship hypothesized here (H_{2c}).

Interaction effects were also run to again determine whether polarization was substantive or driven by turnout selection effects in Off-Years models, and the interaction was not found to be significant.

Taken together, the analyses presented here provide evidence to support the hypothesis that local newspaper closure drives polarizing effects—both in terms of concentration of party support and ideology. These effects did not vary at different levels of change in voter turnout within cases, and are thus not likely to be the result of turnout-driven selection effects. Although matched-pairs analysis was not possible on district-level data due to the ubiquity of paper closures at units of that size, they consistently showed parallel results to the matched subset used for analysis of presidential elections. Presidential models suggested an increase in partisan vote share margin following local newspaper closure. This effect was found even in a group of matched closure/no-closure counties selected for their similar demographic characteristics and levels of local newspapers. This suggests that, while there may be additional unobserved factors that are driving polarization, local newspapers are likely one valid driver of polarization.

Chapter 6: Incumbency Advantage

Given the rise of polarization and fall of voter turnout in areas where local newspapers close, the structural question of whether advantage falls to the incumbent, the challenger, or neither becomes very interesting. Findings in *Chapter 4* established that newspaper closure drives decreases in voter turnout. Findings in *Chapter 5* established that newspaper closure also drives increases in party vote share margin—wherein red counties get redder and blue counties get bluer—and suggested that it may also drive small increases in ideological extremity. It did not, however, find significant interaction effects between these variables and voter turnout. At a high level, these findings provided support for the theory that responses of alienation and distrust arising from loss of local newspapers may cause both civic disengagement and polarization.

In thinking through the implications of these findings in terms of affecting incumbency advantage, competing hypotheses emerge. Incumbency advantage is understood as the benefits usually enjoyed by elected politicians who are running for re-election over their challengers. Benefits of incumbents frequently include superior name recognition and greater access to media and fundraising resources as opposed to challengers (Ansolabehere et al., 2006). Greater media coverage leads to improved name recognition, more successful fundraising, and more positive public perceptions of the candidate (Schaffner, 2006).

Using the theory presented, an obvious prediction for incumbency advantage is that anti-institutional voting behavior in the wake of local paper closure and subsequent political disconnection would direct anti-institutional sentiment at the incumbents; incumbents might have a harder time justifying anti-institutional credibility given their current institutional position. In this instance, local paper closure would be expected to decrease incumbency advantage.

Alternatively, thinking about the dynamics of media coverage and its association with electoral success, there are also circumstances in which local newspaper closure might be expected to further entrench incumbency advantage. Even in the absence of local media, incumbents likely still have superior name recognition. The task for challengers, then, is to become better-known (and liked) than incumbents. In this sense, incumbency advantage may be stronger in areas without active local media systems, because incumbents will still usually hold advantage in seeking attention via their existing outreach infrastructure. Reduced local news production will also come into play in that lower social cohesion may make it more difficult for challengers to mobilize support and build infrastructure. Moreover, in terms of lower democratic accountability, weaker local press means fewer resources directed at investigating the activities of incumbents and uncovering corrupt activities, leaving more opportunity for undeserving incumbents to continue their time in office. Thus, this analysis presents a pair of competing hypotheses for consideration:

H3) Reduced local news production will be associated with greater incumbency advantage; and

H4) Reduced local news production will be associated with reduced incumbency advantage.

Literature

In terms of past research supporting a growth of incumbency advantage (H3), Schaffner (2011) found that newspaper coverage is positively associated with incumbency advantage, due to perceptions that the officials were more in touch with the district. Similarly, Schulhofer-Wohl and Garrido's (2009) study found that the closure of *The Cincinnati Post* resulted in fewer candidates running for office, thus implying fewer challengers for office, and an accruing advantage to incumbents. In terms of literature suggestions that anti-institutional voting might decrease incumbency advantage, Achen and Bartels argue in *Democracy for Realists* (2016) that incumbents are blamed for problems that

occur during their time in office—even if those events are beyond their control. This implies that a general anti-institutional sentiment toward government might reflect on those in office and decrease incumbency advantage. Relatedly, Abramowitz and Webster (2015) argue that the rise of negative partisanship—as in dislike for the opposite political party—decreases incumbency advantage because more voters are looking not to their performance while in office, but rather are voting in response to the party of the president.

Methods

For simplicity and consistency, the same subset of House districts was inherited from *Chapter 4*. This means that 354 of the 435 U.S. House districts were included in analysis. Cases were dropped if one of the following was true for an election during the period of study: had a special election, had a no-contest general election, or did not have one Democrat and one Republican candidate in the general election. Refer to *Chapter 4, Methods* for discussion of these decisions. Data on candidates and winners is drawn from DIME (Bonica, 2019).

To examine the relationship between newspapers and the likelihood of challengers winning House elections within districts over time, conditional logistic regression was used to approximate FE logistic regression (Everitt and Hothorn, 2010, p. 135; Muff et al., 2019; Croissant and Milo, 2018). The model was stratified by House districts in the estimation of likelihood of challenger victory (Incumbent Win = 0; Challenger Win = 1).

Results

Of winners of House elections where an Incumbent faced off against a challenger, success rates for challengers ranged from only 2% in 2004 to 6.4% in 2014.

Leveraging a conditional likelihood function as an approximation of a FE logit model, the Wald statistic for the Off-Years House model ($R^2=0.01/0.13$; $LRT=19.21$ with 5df at $p < 0.01$) indicated highly significant coefficients for newspapers ($p < 0.01$). The estimate of the odds ratio of a challenger winning over an incumbent for the newspapers variable was 1.15,

with a 95% confidence interval of (0.76, 1.46). This means that for every additional paper within a district, holding all else constant, the odds of a challenger winning are multiplied by 1.15. In other words, an additional newspaper increases the likelihood of a challenger winning by 15%. Conversely, if a district loses a paper, odds of challenger success would be reduced. Newspapers were not also a significant factor in predicting the likelihood of challenger victory within districts over time for the House All-Years model. This could be due to weak or no relationships between challenger success and variables of interest, but might also be explained by the limited number of challenger-victory events.

Interaction effects were run to understand the effect of papers on odds of challenger success at different levels of voter turnout within Off-Year contests, but the interaction was not found to be significantly influential.

Table 6.3: Conditional Logistic Fixed Effects Model Predicting Likelihood of Challenger Victory in All-Year House Elections (2004-2014) & Off-Year House Elections (2006-2014) by District

	House All-Years Panel	House Off-Years Panel
	2004, 2006, 2008, 2010, 2012, 2014 district-years	2006, 2010, 2014 district-years
Newspapers	0.00 (1.00)	1.15**(0.05)
Age	0.06 (1.06)	1.05 (0.16)
Income	-0.70**(0.49)	0.84 (0.51)
Marital Status	-0.02 (0.97)	0.84^(0)
Education	0.04*(1.04)	0.03 (1.03)
Concordance	0.64	0.69
R ²	0.01(max: 0.20)	0.01(max: 0.13)
Likelihood ratio test	27.12 (5 df***)	19.21 (5 df**)
Wald Test	23.13 (5 df***)	14.17 (5 df*)
F-statistic	7.42 (df=6;246)	7.42 (df=6;246)
N	2105	1028
Number of time periods	6 elections	3 elections
Number of events	163 upsets	68 upsets
Number of dropped obsvs.	217	133

***p-value < 0.001, **p-value < 0.01, *p-value < 0.05, ^p-value < 0.10. Standard Errors are listed in parentheses. Detailed notes on control variable construction are presented in Tables 3.2. Models are predicting the conditional likelihood of a Challenger (1) winning in a district-year over an Incumbent (0).

Discussion

The conditional likelihood function was used to approximate a FE logit model in predicting newspapers' effects on challenger success (Muff et al., 2019; Croissant and Milo, 2018). Results provided suggestive evidence to reject H0, as newspapers were found to slightly increase the odds of Challenger success in Off-Year House elections. This indicates an increase in incumbency advantage following the closure of a local paper, supporting H3, which reasoned that a loss of local newspapers would make it more difficult for challengers to earn media and name recognition, which would favor incumbents. This contradicted H4, which reasoned that an increase in anti-institutional voting behavior might reduce incumbency advantage, given that they are in-power as part of the status quo.

The likelihood ratio test indicated that the Off-Years model fit the data significantly better than would an empty model. However, the absence of other significant variables in the Off-Years panel does not rule out the possibility that the overall fit of the model was poor in comparison to a model with different variables that speak more directly to incumbent/challenger success. Moreover, some concern is due to the relatively low number of challenger wins (86 in the Off-Years panel and 163 in the All-Years panel). Future studies that are able to exploit longer time spans and capture more challenger upset events should focus more explicitly on model fitting for challenger outcome.

Interestingly, newspapers did not also have a significant effect in the All-Years model. Hypothetically, this could be due to the higher levels of media attention given to politics during presidential years as compared to off-years. Greater media attention to elections during presidential years may make it easier for challengers to garner political coverage, thus reducing the likelihood of an effect during half of elections included in the All-Years model.

The interaction term for newspapers and turnout was not significant in the Off-Years model, suggesting that no significant difference was found for the strength of newspapers' effect on challenger success at different levels of turnout. This indicates that the relationship between challenger success and newspaper closure is independent, and not mediated by turnout. Given the variation in turnout for All-Years House data, interaction models were not replicated with All-Year models.

Chapter 7: Conclusion

National-level political engagement is reliably more popular than local-level political engagement (DeSilver, 2014). Yet, with important exceptions (Lawless and Hayes, 2018; Gao et al., 2018; Gentzkow et al., 2011), the literature on effects of local newspaper closure largely limits itself to seeking local-level political consequences—even though a significant proportion of the populous participates only in national elections. This research took on the challenge of examining national-level effects while maintaining local specificity. Building on a novel dataset of local paper cross-sections (UNC, 2016), this analysis invested significantly in creating a statistically similar subset of longitudinally continuous paper closure years. Coarsened exact matching was used to create a matched-pairs subset consisting of equal parts like counties with and without a local paper closure during the period of study: 2004 to 2016. Counties were also aggregated into congressional districts—enabling county-level analysis of presidential elections and district-level analysis of U.S. House of Representatives elections. Fixed effects regression techniques were used to approach causal estimation of civic effects of local newspapers closure on national political life, analyzing changes within counties and House districts between 2004 and 2016.

Results clearly indicated that local newspaper closure has had a widespread and significant impact on citizen behavior in national-level elections since 2004. Findings supported both of the primary hypothesized effects: civic disengagement and polarization.

Indeed, analysis showed that within counties or districts over the periods of study, local newspaper closure drove declines in voter turnout, increases in the margin between partisan vote shares, potential for increased ideological extremity for elected House representatives, and an entrenchment of incumbency advantage. Although the magnitude of these effects were small, given the nature of the U.S. electoral system, even small changes can carry political significance. Local newspapers' effects on party vote share margin and ideological extremity were not moderated by voter turnout, suggesting that polarization is driven by substantive ideological changes and not merely reflective of selection effects arising from changes in voter turnout. Similarly, local newspapers' effect on incumbency advantage was not moderated by voter turnout—suggesting that local paper closure disadvantages challengers in ways distinct from only declining voter turnout. Although the data specificity required to perform longitudinal analysis on a population including rural areas limited potential variables, these findings are highly robust within the models presented here. This analysis provided strong support for the widespread effects of local newspaper closure in national-level elections.

Findings prove that the effects of local newspaper closure go beyond local-level politics to impact national-level democratic functioning. Consequences of local-level disengagement and anti-institutional voting behavior are expected to result in weakened checks on federal power (Snyder and Strömberg, 2010; Hayes and Lawless, 2015; Shaker, 2014) and weakened incentives for House representatives to bargain based on district outcomes (Hopkins, 2018). Literature on these shifts provides evidence for a cascade of negative reactions: reductions in democratic accountability have been linked to an increase in local government borrowing rates (Gao et al., 2018); the decline in citizen knowledge of representative behavior has been linked to decreased in-district federal spending and less active participation of members in Congress (Snyder and Strömberg, 2010); and the decline

in citizen attention toward representatives' in-district results is expected to lead to greater political polarization in Congress (Hopkins, 2018). Writes Hopkins: "In a nationalized era, the costs of defying one's constituents pale in comparison to the costs of defying one's national party" (Hopkins, 2018, p 19). In turn, political polarization has been shown to result in congressional gridlock, lower-quality legislation, and second-order harms on other branches of government (Barber and McCarty, 2015). Congressional polarization and disconnection from citizen policy preferences is expected to exacerbate the problems of distrust and alienation, creating a vicious cycle of perceived and actual failure of government to serve its constituents.

The importance of local, cultural positionality within this theory suggests troubling implications for federal democracies operating within the context of delocalized media ecosystems. Power in the U.S. government is apportioned in part by geographic space. Local identities have long played a role in focusing voters on the policy outcomes of their lived experiences within those spaces, which has in turn incentivized representatives to deliver outcomes for constituents rather than for national party leadership. Yet as news production has concentrated into major media hubs and news content has increasingly focused on national politics and events, the informational environment which enables local participation and incentivizes local responses has atrophied. The mismatch between geographically-distributed democratic representation and a nationalized, delocalized media ecosystem may be one source of polarization and civic disengagement that may impede democratic function.

These results must be understood within the context of several important limitations. First, though UNC data are presented as covering virtually all local newspapers (Whitaker, 2018), possibility for error and omissions is explicitly acknowledged (UNC, 2016; Abernathy, 2016). Although this analysis was designed to minimize the potential error through validation of exact closure years and study of the differences caused by those

closures, it cannot rule out the possibility that serious errors and omissions existed in the data and biased the results. Secondly, this paper sacrificed ability to study additional demographics, civic phenomena, and media types for the sake of achieving a level of scope that might appropriately add to the field of existing literature. Thirdly, variable construction for demographic controls used the best data available, but may have introduced noise into models by the slight time variations between demographic controls and papers variables.

As discussed in-depth, the choice of one-way case fixed effects models was based on understanding of these data limitations and desire to produce interpretable results speaking to changes within cases over time. However, by choosing one-way approaches, significant between-case data was left unanalyzed. Future studies exploring the election-specific effects of local paper closure relative to the case-specific effects might illuminate important election-specific variations not explored here. Finally, somewhat large standard errors were present at points throughout. It's possible that the ratio of variation in variables of interest *within cases* to variation of variables *between cases* was too low, thus causing large standard errors and producing subpar models (Allison, 2009). While this is not believed to be the case for models presented here, evaluation of this issue is somewhat an interpretive practice, and future analyses may illuminate features of the data that conflict with this interpretation.

The project of studying the local “at-scale” is somewhat paradoxical: the method might appear to betray the theoretical ground on which it stands. While improving on national work that fails to acknowledge the specificity and heterogeneity of the places it groups together, more in-depth future research is needed to re-localize assumptions made in this thesis. In particular, there is significant outstanding work on understanding whether the theoretical proposition of local interpretation can be substantiated. Closer study of the conditions under which different local media shape reader understanding of their place-based

positionality in the broader topography of political power in the U.S. is needed in order to substantiate important parts of the theory presented here.

Furthermore, while this thesis justified the study of local papers alone for its period of focus, the continuing evolution of the media ecosystem begs for multi-media studies in the years ahead. As noted, combination of Nielsen DMA® regions and data with FCC DTV data chronicling types of television access would be an interesting starting point for replicating this study with a focus on local television. It would also be highly desirable for future research to use a more holistic approach to local newspaper decline. Studying newspaper closure misses a broad range of cutbacks papers might be forced to make, and staffing cuts, frequency reductions, and content changes might also be incorporated in future work to give a higher fidelity picture of local news decline. Finally, future studies might also wish to give closer scrutiny to the use of voter turnout as representative of “civic engagement”: voting is only one of many ways to be civically engaged in one’s community, and moreover is not equally available or accessible to all persons and thus not fully representative of civic engagement levels.

Over the past two decades, in addition to the dominance of national political participation over local participation: place-based identities in the United States have waned in strength relative to national identities (Wong, 2012); place-based media has waned in strength relative to national media (Benton, 2016; Hamilton, 2016); and place-based political differentiation has assimilated into the national political landscape (Hopkins, 2018). Fully disentangling the interrelationships between shifts was not within the scope of this thesis, but future research should continue attending to the specificity of place and the changing role of local media in shaping place-identities.

Returning to the proposition at the outset of this thesis: the paradox of a low-or-no choice local media ecosystem emerging in the broader context of a high choice media

ecosystem matters. Following on the prior study (Simpson, 2018), which found cross-sectional evidence associating higher presidential, congressional, and gubernatorial turnout rates for counties with higher rates of local newspapers per capita: it is remarkable to observe the closure of local newspapers' impact on presidential elections. Given the abundance of media on the presidential races, these findings suggest that national media coverage of presidential races is not a true substitute for local media coverage. Rather, this thesis argues that local papers have a shared place-based identity with readers that enables them to speak from a place of cultural authenticity and in-group trust—performing a local interpretation function that is difficult for “outsider” media to replicate. Local papers exercise this function not only by discussing the impact of national-level policy proposals close to home, but also by the implicit framing that occurs throughout both human interest and hard news components of local papers' work, subtly shaping understanding of place relationships within broader topographies of power. This is the work of defining place (Massey, 2004) and of defining reality (Carey, 1988). Individuals now have record access to media to engage with in that definitional effort. But in a delocalized media ecosystem, the media space between the interpersonal and the national—between one's Instagram timeline and the scroll of the breaking news banner on Fox or CNN—may seem hollow. It is within this hollow, unfortunately, that most Americans have been asked to perform their duties as citizens.

Appendices

Appendix A: All Year House Panels

Table A.1: Fixed Effects Model Predicting Voter Turnout in All-Year House Elections by District (2004-2014)

	House All-Years Panel [†]
	2004, 2006, 2008, 2010, 2012, 2014 district-years
Newspapers	0.08 (0.05)
Age	-0.75***(0.16)
Income	-3.27***(0.65)
Marital Status	1.67***(0.13)
Education	0.29***(0.03)
Full Model R ²	0.52
Adj. Full Model R ²	0.51
Projected Model R ²	0.15
Adj. Projected Model R ²	-0.01
F-statistic	50.44 (df=5;353)
N	2124
Number of cases	354 districts
Number of time periods	6 elections

***p-value < 0.001, **p-value < 0.01, *p-value < 0.05, ^p-value < 0.10. Standard Errors are listed in parentheses. Detailed notes on variable construction are presented in Tables 3.2 and 4.1.

[†] Model uses HAC (Arellano) estimators, clustered standard errors, and associated F-statistics

Histogram of Residuals & Q-Q Plot (All-Years model, Table A.1)

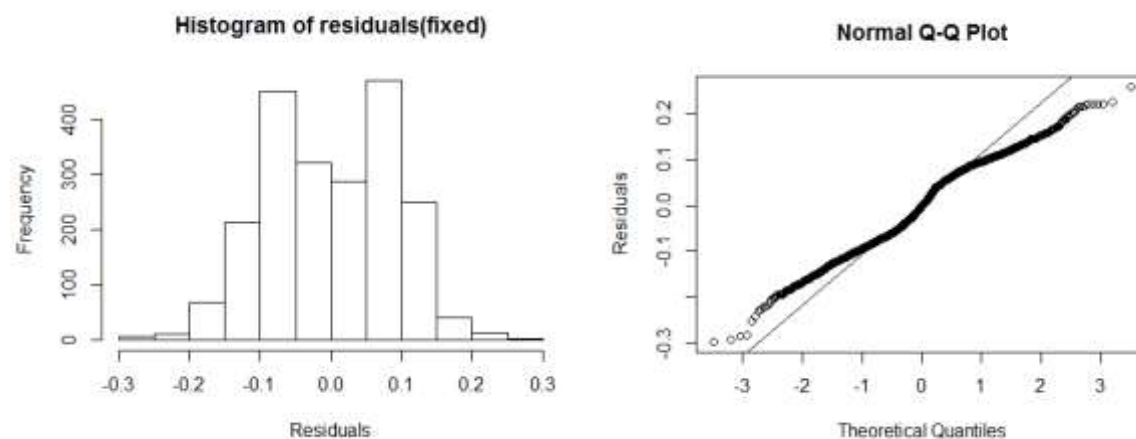


Table A.2: Fixed Effects Model Predicting Party Vote Share Margin in All-Year House Elections by District (2004-2014)

	House All-Years Panel[†]
	2004, 2006, 2008, 2010, 2012, 2014 district-years
Newspapers	-0.20 [^] (0.11)
Age	-0.73*(0.32)
Income	1.37 (1.09)
Marital Status	-0.31 (0.24)
Education	-0.21**(0.07)
Rural Score	
Turnout	
Full Model R ²	0.49
Adj. Full Model R ²	0.49
Projected Model R ²	0.01
Adj. Projected Model R ²	-0.18
F-statistic	50.44 (df=5;353)
N	2124
Number of cases	354 districts
Number of time periods	6 elections

***p-value < 0.001, **p-value < 0.01, *p-value < 0.05, [^]p-value < 0.10. Standard Errors are listed in parentheses. Detailed notes on variable construction are presented in Tables 3.2 and 5.1.

[†]Model uses HAC (Arellano) estimators, clustered standard errors, and associated F-statistics.

Table A.3: Fixed Effects Model Predicting Party Vote Share Margin in All-Year House Elections by District (2004-2014), Interacting Newspapers and Voter Turnout

	House All-Years Panel[†]
	2004, 2006, 2008, 2010, 2012, 2014 district-years
Newspapers	-0.37*(0.15)
Turnout	-0.28***(0.06)
Age	-0.85*(0.34)
Income	0.74 (1.14)
Marital Status	0.02 (0.30)
Education	-0.15*(0.07)
Rural Score	
Turnout*Papers	0.43*(0.20)
Full Model R ²	0.52
Adj. Full Model R ²	0.52
Projected Model R ²	0.02
Adj. Projected Model R ²	-0.17
F-statistic	6.34 (df=7;353)
N	2124
Number of cases	354 districts
Number of time periods	6 elections

***p-value < 0.001, **p-value < 0.01, *p-value < 0.05, ^p-value < 0.10. Standard Errors are listed in parentheses. Detailed notes on variable construction are presented in Tables 3.2 and 5.1.

[†] Model uses HAC (Arellano) estimators, clustered standard errors, and associated F-statistics.

Appendix B: Uncorrected Ideology Panel Model

Table B.1: Fixed Effects Model Predicting Ideology of Elected House Candidates in All-Year House Elections (2004-2014) & Off-Year House Elections (2006-2014) by District, Without HAC Corrections

	House All-Years Panel	House Off-Years Panel
	2004, 2006, 2008, 2010, 2012, 2014 district-years	2006, 2010, 2014 district-years
Newspapers	-0.31***(0.09)	-0.25^(0.06)
Age	1.92***(0.31)	1.74***(0.48)
Income	0.83 (0.87)	0.58 (1.31)
Marital Status	-0.56**(0.18)	-0.50 (0.33)
Education	0.46***(0.07)	0.46***(0.10)
Full Model R ²	0.53	0.57
Adjusted Full Model R ²	0.53	0.57
Projected Model R ²	0.12	0.11
Adjusted Projected Model R ²	-0.04	-0.33
F-statistic	52.68 (df=5;1765)	18.62 (df=5;703)
N	2124	1062
Number of cases	354 districts	354 districts
Number of time periods	6 elections	3 elections

***p-value < 0.001, **p-value < 0.01, *p-value < 0.05, ^p-value < 0.10. Standard Errors are listed in parentheses. Detailed notes on variable construction are presented in Tables 3.2 and 5.1.

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