THE INCENTIVES AND EFFECTS OF INDEPENDENT AND GOVERNMENT-CONTROLLED MEDIA IN THE DEVELOPING WORLD

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The rise of broadcast, and then digital, media has had important political implications across the developing world. First considering independent media outlets, we review evidence showing that the media's editorial content, revelation of information about candidates, and capacity to provide a platform for politicians has significantly shaped electoral outcomes and mobilization. Unlike developed democracies, the media is often used to buttress and oppose autocratic regimes. With respect to government control of the media, we review evidence of media bias, as well as it determinants and effectiveness at reducing opposition. With respect to media's liberation potential, we highlight how broadcast and internet-based technologies are—not without difficulties—providing new opportunities for facilitating dissent and change. We highlight methodological innovations, the challenges of isolating theoretical mechanisms, and avenues for future research throughout.

Keywords: developing countries; independent media; political participation; persuasion; state-controlled media.

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1 Introduction

Print, broadcast, and digital media are becoming pervasive across the developing world. This shift is likely to herald both opportunities and challenges for electoral persuasion and accountability. On the one hand, greater access to media may provide voters with novel information about the platforms, characteristics, and performance of candidates, or provide candidates and parties with more equal opportunities to reach voters that could help to break down clientelistic or identity-oriented electoral equilibria. In more autocratic regimes, the media could further help to engage and coordinate citizens to pressure governments for liberalization or democratization. On the other hand, these same virtues may be captured by the state or other powerful interests. By controlling information flows and seeking to parameters of political debate, expanding media influence could also consolidate power and sustain economic and political inequalities. In this chapter, we ask: how does media persuade and influence citizens, and thus shape the nature of electoral politics, in developing countries?

We review evidence from Africa, Asia, Eastern Europe, Latin America, and historical analyses of today's developed countries. For the purposes of this chapter, we focus on the role of traditional mass media (newspapers, radio, and television, including group screenings) and more nascent digital media (internet- and mobile-based technologies). Given the extensive reach of the state in many developing countries, we distinguish independent from state-controlled media. We regard media outlets as state-controlled where content is directly or heavily indirectly influenced by the state, although the dividing line may not always be clear in practice.

This chapter seeks to locate innovative empirical work within theoretical models of the media. We draw on a surge in empirical work using creative observational and experimental designs to tease out causal effects of different types of media in real-world settings. The challenges surrounding causal inference are particularly acute in the context of studying media, given that individuals generally choose which content to consume. We seek to "micro-found" the evidence in theoretical models that build from individual-level actions up to beliefs, preferences, and actions. While the focus is primarily on attitudes and electoral behavior, we also consider citizen participation in protest and conflict among our dependent variables, which are salient in the many developing contexts where democratic institutions are weak or minimal.

Our review starts with independent media, considering the extent to which they inform, persuade, and mobilize citizens. We then turn to the determinants, extent, and persuasiveness of state-owned media. Finally, we examine the extent to which citizens can be politically liberated by reducing dependence on the state for news and information. We conclude by emphasizing key topics for future research.

2 The persuasive role of independent media

We start by considering the extent to which independent media outlets—those over which politicians exert limited control via ownership or operational control—can alter citizen behavior. We proceed by considering belief updating and coordination theories, before reviewing the empirical evidence through these lenses.

2.1 Theories of political information provided by the media

Theories of media effects on voter attitudes and behaviors draw from three main traditions of belief updating. The first tradition, which is rooted in the communications literature, rests on the idea that media outlets can control the political agenda and persuade voters to change their beliefs and preferences (see Leeper and Slothuus 2019 in this volume for additional discussion). By controlling the agenda, media outlets can frame and filter news to determine which issues and information define political debate (e.g. Iyengar and Kinder 2010). By persuading, media can explicitly combine information and argumentation to change consumers' beliefs and behaviors. Both factors can alter the weight that voters attach to different issues in developing attitudes and making vote choices, as well as change how they view an issue without necessarily altering the weight attached to it.

The second tradition is Zaller's (1992) receive-accept-sample (RAS) model. In its first step, voters may be exposed to a message and may process that message. They next decide whether to accept the message, by incorporating its content in the corpus of facts and arguments that they consider acceptable, on the basis of how persuasive the message is and cues about the credibility of the message's sender (see Cotter et al. 2019 in this volume for additional discussion). Older messages that are not reinforced exit this corpus. Finally, when expressing an opinion, voters sample from this corpus, such that the likelihood that they express a view on an issue reflects the fraction of such facts and arguments in their corpus. The electorate can then be divided into three main types of voters: uninformed voters that never receive or do not process

information; partially aware voters that lack the knowledge of cues required to reject content; and informed voters with strong views that can use cues to discredit a source and then reject its content—what Ditto and Lopez (1992) call "motivated skepticism." The partially aware voters are thus most susceptible to media persuasion, although the extent to which media exposure translates into opinions or actions is likely to depend on the intensity and recency of exposure. Informed voters may also be affected to the extent that media reports facilitate "motivated reasoning" or confirmation bias (Mullainathan and Shleifer 2005), or even elicit opposing reactions (Ditto and Lopez 1992).

The third tradition instead builds on a more rational information consumer (see Grofman 2019 in this volume for additional discussion). Citizens are defined by their capacity to understand the reporting incentives facing the information (or signal) provider or the underlying data generating process, and accordingly update their beliefs using Bayes' rule (Chiang and Knight 2011). To the extent that a signal is credible, an attempt to persuade voters will succeed to the extent that voters initially thought the opposite, and will do so most dramatically when the signal is precise relative to voters' prior beliefs.[1] Bayesian voters can be influenced by media reports when their prior beliefs are imprecise, even by less credible outlets. However, when the credibility of media outlets is uncertain, Bayesian consumers may also perceive sources that conform with their prior beliefs to be more credible, which could perpetuate segmented media markets that pander to consumers' prior beliefs (Gentzkow and Shapiro 2006).

Although the foundations of these traditions differ significantly, their core predictions are ultimately relatively similar. On the face of it, agenda-setting theories appear most distinct in their explicit emphasis on the weights attached to different considerations. However, although the mechanism differs, this is also consistent with the other approaches: from a Bayesian perspective, repeated information on a particular issue will typically increase the precision of a voter's belief on that issue, inducing voters to upweight that consideration when making decisions that reflect multiple issues; similarly, from a Zallerian perspective, increasing exposure to information on an issue increases the chance that an associated claim or argument is drawn upon when expressing an opinion. Moreover, conditional on exposure to information, Bayesian voters are also hard to separate empirically from Zallerian voters: both theories suggest that voters will shift their views in the direction of new information relative to prior beliefs or the pre-existing corpus of opinions,

[1]If voters are risk-averse, even information that reinforces their prior beliefs could alter their behavior. This may often be a second-order consideration relative to the direction of belief updating.

and the most informed voters will respond least to such information. Differences may arise in response to sources with different levels of credibility, as Zallerian voters may fail to filter out known outlets biases.

While the preceding accounts focus on individual belief updating, the effects of the media could also operate through citizen coordination. From this perspective, the media provides a "public signal" that many/all citizens observe and also know that others are also likely to have observed. This can be crucial for revealing mass shared experiences and willingness to protest (Kuran 1991; Lohmann 1994). Such common knowledge can play a powerful role when voters benefit from acting like others as well as making good individual choices. However, while a public signal can help voters settle on superior outcomes, a precise public signal can also cause voters to herd around actions that are not beneficial (Morris and Shin 2002). In principle, a media report could therefore induce individuals to update positively about a candidate while also coordinating them around a different candidate (Arias et al. forthcoming).

Armed with these predictions, we proceed to examine the extent to which media persuasion has proven effective, and for which types of voters. The following analysis distinguishes two main types of political content encountered through the media: news programming and other political content, together with its editorial stance or bias; and content that is directly provided by politicians through the media.

2.2 The effects of independent media content

2.2.1 Editorial biases

It is widely recognized that different media outlets provide content underpinned by different political positions. This is generally reflected in three classes of editorial control. First, "news" may distort the facts by misrepresenting true events. Second, news may be truthfully, but selectively, reported; this form of agenda setting entails *filtering* the set of possible news stories. Third, news may be truthfully reported, but subject to emphases or *framings* that seek to influence how consumers view the news within a grander narrative. Such biases or slant may be, at least somewhat, known by voters. Nevertheless, the theoretical models outlined above suggest that voters may still update their beliefs and alter their electoral behavior in response.

The effects of differences in content produced by independent media outlets is a central empirical focus in advanced democracies (e.g. DellaVigna and Kaplan 2007; Gentzkow, Shapiro and Sinkinson 2011; Martin and Yurukoglu 2017). In developing contexts, the literature is less extensive, in part due to the relatively

greater role of state-owned media—which we address in the next section. Nevertheless, from a Bayesian or Zallerian perspective, editorial content is unlikely to be any less important in contexts where partisan ties and political platforms are less established (e.g. Enikolopov, Petrova and Zhuravskaya 2011; Greene 2011; Lawson and McCann 2005), as a number of studies illustrate.

An influential early article by Lawson and McCann (2005) leverages a Mexican panel survey to show that exposure to television news channels favoring particular presidential candidates increased both enthusiasm toward and self-reported vote for the corresponding candidates in the 2000 presidential election. One drawback with panel-based designs, though, is that changing support for a candidate (due to other factors) could induce voters to start watching the channel favoring that candidate. Another potential concern is whether voters truthfully report their vote choices, especially once the winning candidate is known.

To address these issues, a now-common observational approach exploits differences in access to broadcast media outlets due to "naturally occurring" variation in signal strength. This typically entails using signal propagation formulas that account for transmitter location, signal power and direction, and topographical impediments to identify otherwise-similar locations with and without access to the signal (see Olken 2009). A prominent example is Enikolopov, Petrova and Zhuravskaya's (2011) study of the effects of NTV—the only national channel independent of the government—in Russia's 1999 parliamentary elections. They conclude that the vote share of Putin's Unity party dropped by 9 percentage points at polling stations with a high predicted probability of access to NTV. This substantial effect of independent, but clearly partisan, media extends to cross-border spillovers as well, as Peisakhin and Rozenas (2018) show—using a similar design—with regard to the large increase in support for pro-Russian parties in Ukrainian precincts covered by Russia's substantial and critical coverage of the Ukrainian government ahead of the 2014 general elections.

However, partisan media's political effects appear to be heterogeneous, varying with the extent to which it alienates citizens in a given context. On one hand, Conroy-Krutz and Moehler (2015) conduct a field experiment manipulating access to partisan talk radio in Ghanian commuter buses, finding that exposure to partisan messages from other sides can reduce partisan polarization, while messages from copartisans have limited effect. On the other hand, DellaVigna et al. (2014) leverage spatial variation within Croatia in access to Serbian radio station RTS to show that its nationalistic content antagonized Croats oppressed by Serbia

10 years earlier, resulting in heightened anti-Serbian attitudes and a greater vote share for extreme Croatian nationalist parties. Similar reactions against content conflicting with prior dispositions are also observed by voters in historically Jewish areas in response to Nazi-controlled radio propaganda (Adena et al. 2015).

Despite their benefits in terms of causal identification, quasi-experimental designs often entail examining a less direct and often bundled treatment. First, the treatment is typically access to, rather than consumption of, content; estimates thus typically represent lower bounds and apply specifically to those willing to consume the content. Experimental designs can provide creative solutions for this issue (e.g. Conroy-Krutz and Moehler 2015), although they avoid the key question of understanding where demand for particular types of content comes from in the first place. Second, content itself is generally the bundle of all programming or articles that a media outlet reports, rather than a specific political report. While some studies have address this issue by leveraging comparisons with otherwise-similar outlets that differ in one key way (e.g. Adena et al. 2015; Larreguy, Marshall and Snyder 2018*a*; Yanagizawa-Drott 2014), researchers might also consider complementary analyses that randomize exposure to different types of content in comparable lab settings (e.g. DellaVigna et al. 2014) or provide participants with incentives to consume particular programs. The latter could be achieved by rewarding participants for correctly answering questions about content (e.g. Chen and Yang 2018), creating mass listening/viewing groups (e.g. Arias 2018; Platas and Raffler 2017), or creating forums to discuss a program's content.

2.2.2 Media revelations and electoral selection

To the extent that media outlets credibly report political news, another key way in which the media can influence voters is by revealing candidate information that can cause voters to update their beliefs about how well the politician will serve them in the future. Moreover, selection-based models of electoral accountability imply that the revelation of positive (negative) information about the incumbent, relatively to voters' prior beliefs, will increase (decrease) electoral support for that candidate or party (see Ashworth 2005; Fearon 1999; Rogoff 1990). In most parts of the world, the media is the most effective mechanism through which voters can cheaply obtain credible performance information.

Several studies provide evidence that voting behavior indeed reflects this Bayesian logic. Ferraz and Finan (2008) leverage the randomization underpinning Brazil's municipality audit program to compare sup-

port for incumbents for whom the audit results were released before they were up for re-election with incumbents for whom the audit results were released after the election. While the average mayor's vote share is unaffected, their findings indicate that mayors revealed to have engaged in more than one corruption violation suffer a 10 percentage point drop in vote share and a 30 point reduction in the probability of being re-elected. In contrast, the vote share of clean mayors somewhat increases. These results imply that voters expected one violation and are willing to sanction mayors for worse performance. Most pertinently, Ferraz and Finan (2008) find that these results are driven by the municipalities that contain an AM radio station able to publicize such information. However, one concern is whether voter sanctioning is caused by media presence, as opposed to other factors that correlate with media presence. For example, frequent word of mouth information transmission, high levels of concern about corruption, or higher prior beliefs about incumbent corruption could correlate with media presence and also make voters more likely to sanction malfeasant incumbents.

Two subsequent studies in different contexts reinforce the importance of the media's dissemination of incumbent performance information. First, and most directly extending Ferraz and Finan (2008), Larreguy, Marshall and Snyder (2018*b*) examine a similar municipal audit program in Mexico and further exploit plausibly exogenous variation in access to commercial quality local radio and televisions stations that neighboring electoral precincts. They find that each additional media outlet increases voter sanctioning of mayors revealed to have misused more than 10% of funds by around 1 percentage point, while the vote share of clean incumbents instead increased by a slightly smaller amount. Moreover, the authors highlight the importance of media market structure, showing that these effects are most pronounced where there are fewer non-local competitors and outlets have stronger incentives to serve the municipal audience in which a precinct is located. Second, Banerjee et al. (2011) experimentally manipulate the free provision of 80,000 newspapers containing benchmarked incumbent performance scorecards and incumbent and challenge candidate qualifications across urban slums ahead of state elections in Delhi, India. Consistent with reported performance conforming with the average voter's prior belief, the newspapers produced no effect on average but significantly increased the vote share of the best-performing incumbents and best-qualified challengers.

One general caveat regarding these studies is that, while the media's *provision* of information is randomly assigned, that information's *content* is not. Consequently, it remains possible that the media is induc-

ing electoral sanctioning in places where politicians perform badly, but not because it is revealed that they performed badly. Indeed, extant estimates could reflect coordination, rather than informational, channels. Building on earlier comments, critical media content that is correlated with, but unrelated to, incumbent performance can also influence voters.

Nevertheless, the media's accountability-enhancing effects are particularly stark in comparison with information dissemination mechanisms targeting individuals voters, like pamphlets (e.g. Chong et al. 2015; Cruz, Keefer and Labonne 2019; de Figueiredo, Hidalgo and Kasahara 2013; Humphreys and Weinstein 2012). Most notably, the recent information and accountability Metaketa initiative, which used leaflets, SMS messages, or local screenings to provide voters with similar incumbent performance metrics across six developing countries, finds limited effects on information recall, voter beliefs, or electoral behavior relatively shortly after the interventions (Dunning et al. forthcoming). While this difference in the efficacy of information dissemination could reflect the greater credibility or reach of mass media, it is also possible that the media serves additional theoretical functions. In particular, the media might differentially coordinate voters by transmitting a public signal to a critical mass of voters (Adida et al. 2017; Arias et al. forthcoming; Enríquez et al. 2019) or frame incumbent performance in more dramatic ways (Iyengar and Kinder 2010). Both interpretations receive suggestive support in the apparently greater willingness of voters to punish lower levels of malfeasance when they are reported by the media in Mexico; e.g. compare the effects of leaflets in Arias et al. (2018) with Facebook ads in Enríquez et al. (2019) and local media in Larreguy, Marshall and Snyder (2018*b*). However, understanding the mechanisms underpinning the greater effectiveness of media dissemination is important, from both an academic perspective and for NGOs seeking to optimize their information campaigns.

While these studies show that media reports are often effective at enhancing accountability, they beg a deeper question: absent external experimental interventions, what equilibria support the consistent supply of relevant and credible performance information? As Larreguy, Marshall and Snyder (2018*b*) show in Mexico, media outlets often (perceive that they) lack economic incentives to produce local news content (e.g. Baron 2006; Gentzkow and Shapiro 2006; Strömberg 2004). This concern is especially acute for local news production as national television networks and the internet, which serve broader audiences, increasingly predominate (Martin and McCrain forthcoming). A separate challenge reflects media bias, given that

even apolitical media outlets often face incentives to pander toward voters' prior beliefs (e.g. Gentzkow and Shapiro 2006; Mullainathan and Shleifer 2005). As discussed in greater detail below, these concerns are compounded by incumbents often lacking incentives to facilitate a transparent media environment (Ashworth and Bueno de Mesquita 2014, Bowles and Larreguy 2018), which has been shown to in turn reduce responsiveness (Avis, Ferraz and Finan 2018; Besley and Burgess 2002; Casey 2015; c.f. Keefer and Khemani 2016). A central challenge for this research agenda is thus to understand the media market conditions that can sustain electoral accountability, and how the low-accountability equilibria that characterize many developing contexts can be broken down (Khemani et al. 2016).

2.3 The media as a platform for political actors

In addition to providing its own content and slant, the media often provides a platform for politicians. This typically occurs through political ads and broadcast public debates, and considerable evidence has amassed to suggest that such communication can be electorally persuasive.

In the case of political ads, much of the most convincing evidence comes from Latin America. Durante and Gutierrez (2014) exploit the randomized allocation of radio and television ad slots to parties around the 2012 Mexican general elections to show that favorable opinion polling tracks a party's prime time ads. Larreguy, Marshall and Snyder (2018*a*) further leverage differences in party ad shares across entire election campaigns to show that advertising for the traditionally-disadvantaged PAN and PRD parties was substantially more effective in the 2009 and 2012 Mexican legislative election than for the previously-hegemonic PRI party (see also Greene 2011). Consistent with Bayesian updating, the latter effects were concentrated in electoral precincts where the party was not dominant but baseline support for the locally dominant party was insurmountably large. Beyond Mexico, Da Silveira and De Mello (2011) exploit changes in ad allocations preceding Brazilian runoff elections to similarly show that television slots substantially increase the associated party's vote share. In this case, though, it is hard to separate the effects of ads from strategic campaign shifts between first and second round elections.

Political debates transmitted to voters through the media have also shaped electoral outcomes. Across Liberia, Sierra Leone, and Uganda, recent field experiments have randomized voter access to pre-election debates, whether via radio (re)transmission (Bowles and Larreguy 2018) or group screenings (Bidwell,

Casey and Glennerster 2018; Platas and Raffler 2017).[2] The most consistent finding is that debate "winners," as defined by voters—who generally value both policies and competencies (Bidwell, Casey and Glennerster 2018; Bowles and Larreguy 2018)—or experts (Platas and Raffler 2017), experience a 2-7 percentage point increase in their local vote share relative to debate "losers." This occurs even when there was limited scope for voters to update positively (Platas and Raffler 2017) or incumbents out-debate challengers (Bowles and Larreguy 2018). These findings may thus suggest that the public component of the debates helped to coordinate voters—whether because incumbents strategically incorporate the debates into their campaigns and induce challengers to drop out (Bowles and Larreguy 2018) or by generating common knowledge about the information that other voters are likely to act on (Bidwell, Casey and Glennerster 2018). Perhaps most importantly, tentative evidence suggests that public debates increase post-election responsiveness to now-informed voters (Bidwell, Casey and Glennerster 2018).

2.4 The media's capacity to mobilize (informed) voter participation

It has long been believed that the media can help shape a participatory citizenry (Dahl 1973; Lerner 1958). Particularly through electoral turnout and political protest, voter mobilization stimulated in part by the media's capacity to disseminate information and create common expectations of others behavior could facilitate democratic transitions and help to sustain and consolidate democratic practices.

Broadcast and mobile media technologies are increasingly being used to disseminate civic education messages, and have successfully mobilized electoral participation in the short term. Civic education messages conveyed by newspapers and SMS messaging technologies have proved to be an effective and scalable means of increasing turnout in India (Banerjee et al. 2011) and Sub-Saharan Africa (Aker, Collier and Vicente 2017; Marx, Pons and Suri 2017), although the generally small effect sizes vary notably across contexts. While "get out the vote campaigns" have increased turnout, civic education can breed both engagement and disappointment with the system more broadly. On one hand, Mozambique's civic education campaign in newspapers increased the likelihood of voters using SMS to make requests from the President-elect (Aker, Collier and Vicente 2017). On the other, Marx, Pons and Suri (2017) find that similar text messages bred distrust in electoral authorities in parts of Kenya where violence occurred and voters' pre-

[2] Fujiwara and Wantchekon (2013) and Wantchekon et al. (2017) examine debates in the context of town hall meetings not broadcast via the media.

ferred candidate lost. In addition to providing a short-term stimulus, Cagé and Rueda (2016) suggest that early access to newspapers has cultivated sustained long-term political participation across Sub-Saharan Africa.

Non-partisan ad campaigns run by electoral institutes and NGOs have also reduced vote buying and electoral violence. Vasudevan (2019) finds that 60-second radio ads emphasizing the economic costs of vote buying after the end of campaigning reduced the vote share of vote buying parties by around 5 percentage points in the 2014 Indian general elections. The implied 10-20% rate of listener persuasion appears to reflect a somewhat coordinated voter response against more corrupt parties, and generally exceeds the effectiveness of anti-vote buying campaigns operating on the ground rather than through the airwaves (e.g. Vicente 2014). Furthermore, Collier and Vicente (2014) find that a randomized community-level town hall, popular theater, and in-person citizen empowerment campaign designed to counteract electoral violence substantially increased voters' sense of security and turnout and reduced journalist reports of violence in Nigerian states. The civic education campaign disseminated by newspapers similarly reduced electoral violence in Mozambique (Aker, Collier and Vicente 2017). This plausibly occurred by shifting parties' expectations of whether voters would tolerate electoral violence.

The information-spreading and coordinating role of the media, especially new media technologies, is particularly pronounced when it comes to political protest. Using cell phone coverage maps, Pierskalla and Hollenbach (2013) suggest that communication facilitated violent collective action across Africa by enhancing common knowledge, on the ground coordination, information diffusion, and monitoring. Using a similar design and instrumenting for network coverage, Manacorda and Tesei (2016) further show that cell phone coverage across the continent also facilitated political protest. Providing the clearest link to the coordination channel, Manacorda and Tesei (2016) show that Afrobarometer respondents without mobile phones were more likely to protest when others in their area protest. Similarly in the context of social media, Enikolopov, Makarin and Petrova (2018) find higher rates of anti-Putin protest in cities with more users of Russia's Facebook-like platform VK. Based on VK users not becoming more dissatisfied with Putin's government and protest being lower where users were split between Facebook and VK, the authors also attribute this primarily to social media's coordination capacity. Steinert-Threlkeld (2017) also finds that common twitter hashtags at the periphery of protester social networks during the Arab Spring significantly

increased protester turnout.

3 Government control of the media

The previous sections considered media outlets independently owned and operated by the private sector. However, the reality of media environments in many developing contexts—both democratic and autocratic—is the prominent role of media editorially controlled by the state. According to Djankov et al.'s (2003) analysis of 97 countries in 1999, the state owned more than half the major radio and television stations. Editorial control could thus be enforced directly through government ownership, but also indirectly through government subsidies or bribes provided to private media outlets and/or (legal or tacit) government censorship. With the exception of a few notable outliers like North Korea and Turkmenistan, present day editorial control is rarely total (Walker and Orttung 2014). Nevertheless, state control of the media is generally correlated with bad outcomes ranging from the jailing of journalists to low political rights, high threats of expropriation, and low life expectancy (Djankov et al. 2003), potentially emanating from—or, more likely, reflecting—the government's capacity to bias media coverage in its favor.

Just like independent media outlets, government-based media bias can be achieved through distortion, agenda-setting, and framing.[3] Distortion can entail falsely reporting protest numbers, economic performance, or government popularity, or be created by the government itself (e.g. the Nazi or Hutu pro-genocide propaganda described below). Agenda setting often entails selecting or emphasizing stories that paint the government in a more favorable light, or ignoring or de-emphasizing those with the potential to generate collective action (King, Pan and Roberts 2013, 2014). Framing is also common when addressing inescapable adverse circumstances, such as when the Russian government blames external factors like foreign interference or international markets, rather than Putin, for poor economic performance (Rozenas and Stukal 2018).

[3] Other studies examine the propensity of autocratic governments to release data, such as economic reports (Hollyer, Rosendorff and Vreeland 2015). This is not the focus of this chapter.

3.1 The causes and effects of government media bias

Why would democratic or autocratic governments wish to manipulate media content? The extant literature again centers around how media can either alter the beliefs of individuals or individuals' beliefs about other individuals. In game theoretic jargon, this is the distinction between first- and second-order beliefs.

Starting with first-order beliefs, perhaps the most obvious explanation for manipulating media content is to avoid criticism that could imperil their ability to stay in power. For Geddes and Zaller (1989), this is premised on the idea that uncritical voters can be fooled by media coverage into thinking that the government is doing better than it actually is. Consequently, governments have incentives to flood the electorate with positive messages seeking to persuade them that the government should be re-elected or not revolted against. This fear is widely shared among academics and non-governmental institutions (e.g. Curry and Dassin 1982; Siebert, Peterson and Schramm 1956; Voltmer 2013; Walker and Orttung 2014).

However, this form of persuasion—or the lack of dissuasion—need not depend on uncritical or irrational voters. Besley and Prat (2006) model the decision of a politician seeking re-election to buy off the media when the media discovers poor performance or high corruption. In their model, media bias amounts to a failure to report such negative signals, and the government is willing to pay bribes up to the point at which they become willing to forgo re-election. Bribes are thus most common (and lower in value) when there are few media outlets to buy off , the returns of increased audience share for those reporting the revelations are limited, and the transaction costs of engaging in bribery (e.g. the cost of getting caught) are low.

Rather than persuade voters of the government's merits, demonstrated media control can also signal the strength or resolve of the state. Edmond (2013) formally shows that the availability of costly media manipulation can allow weaker autocratic governments to fool citizens into believing that the government is sufficiently strong that it does not need to manipulate the media in order to survive. Huang (2015) proposes a similar argument for China. In competitive authoritarian context of pre-2000 Mexico, Simpser (2013) similarly notes that governments may openly demonstrate their control over the media to discourage challengers.

Even if biased content does not alter citizens' beliefs on either dimension, controlling media outlets could still inhibit the coordination required for effective collective action against the government by influencing whether citizens believe that *other citizens* will act. In contexts where voters value some form of

conformity, e.g. not protesting if others are not protesting, Little (2017) shows that even non-credulous voters that want to support competent governments and do not believe reports by government-controlled media may still act as if they do when they believe that there is a significant fraction of credulous voters that will fall for government propaganda. Even when all voters are rational, the logic of Edmond (2013) described above can be further compounded by a coordination motivation that amplifies the reduced risk of revolution, and thus further incentivizes controlling media content. A similar logic is vividly illustrated by Kuran's (1991) tipping point account of the revolutions the ended Soviet rule in Eastern Europe happened, where the lack of an independent media contributed to preventing citizens from learning the true preferences of others, and thus declining to revolt. Lohmann (1994) points to similar cascades of opposition in East Germany.

Beyond the obvious costs of orchestrating media content, there still remain reasons that governments might think twice about asserting control. First, by increasing the threat of monitoring, investigative media could facilitate central government survival by serving as a watchdog that identifies incompetent bureaucrats and minimizes corruption at the local level. For example, Egorov, Guriev and Sonin (2009) suggest that autocrats lacking natural resources might use free media to discipline bureaucratic excesses that impede the economic growth required to enrich and sustain themselves. Similarly, Lorentzen (2014) argues that generally rising, but often adjusted, media freedom in China to report on low-level corruption reflects the central government's strategic decision to emphasize rooting out bad bureaucrats when social discontent—and thus the risk of coordinated collective action—is comparatively low. Second, governments might also support truthful media reporting of local discontent in order to learn about voter grievances before they become a threat (Huang, Boranbay-Akan and Huang 2016). Third, voters may consume less government-controlled media content if they believe it to be uninformative. By endogenizing the consumption of information, Gehlbach and Sonin (2014) note that government control can be problematic for a government seeking to harness coordinated citizen behavior, and thus highlight the potential benefits of engaging in "Bayesian persuasion" (Kamenica and Gentzkow 2011): committing to a credible reporting mechanism, even when it sometimes reveals poor performance. Fourth, Edmond (2013) suggests that such economies of scale in dissemination encourage greater manipulation, which implies that traditional media produced for the masses is especially vulnerable to manipulation. In contrast, policing and influencing social media communications is more challenging because intervention must occur at many different nodes.

These theoretical accounts raise two central empirical questions: (1) To what extent, and under what conditions, do governments manipulate media content? (2) Is government-influenced content actually effective in changing the beliefs or behaviors of voters?

3.2 Do governments directly or indirectly manipulate media content?

Gaining control of the airwaves is close to the top of the list for actors seeking to establish political control (e.g. Singh 2014). From Nazi Germany to modern day Mali, as well as the 2016 failed coup in Turkey, those seeking to take over the state quickly assert influence over mass broadcast technologies. This is even true of local politicians, who also appear to be aided by a system biased in their favor—Boas and Hidalgo (2011) report a sharp rise in radio license approvals for city councilors that narrowly won office in Brazil, relative to those that narrowly lost. Hegemonic regimes typically also maintain close ties or control over media outlets once in power, as the seven-decade rule of Mexico's Institutional Revolutionary Party illustrates (Lawson 2002). On the face of it, there appears to be a substantial will to manipulate media content.

However, government manipulation of the media is not usually easy to detect or quantify. This reflects measurement challenges for both the independent variables (state control) and dependent variables (media content). While government ownership and strictly-enforced regulations are relatively straight-forward to observe and compare across contexts, inventive techniques are required to examine the extent to which the government actually directly or indirectly controls the content of private media outlets. Similarly, while the quantity of reporting on adverse stories (or non-reporting) can be observed (e.g. Baum and Zhukov 2015 count the number of reports covering the Libyan civil war), it is much harder to measure the extent of bias in relative terms (e.g. Groseclose and Milyo 2005) and, especially, absolute terms. These measurement challenges are often further complicated by the difficulty of identifying relevant counterfactual scenarios to compare government-influenced content against, given that outlets often compete by replicating or distinguishing their content from their competitors (e.g. Cagé, Hervé and Viaud 2017; Gentzkow and Shapiro 2006). In other words, if one outlet changes its content, it may induce others to do so as well, which could accentuate or attenuate the effects of the initial outlet's change. As a consequence, estimates comparing outlets subjected and not subjected to political influence could under- or over-state effects to the extent that equilibrium content is altered across the board by changes in political influence.

Nevertheless, various studies compellingly document sharp and immediate shifts in content after changes in control. For example, Nazi control of Germany's national radio system dramatically increased radio access for Nazi politicians and anti-Semitic content (Adena et al. 2015), Gazprom control of NTV reduced favorable coverage of anti-Putin parties in Russia (Enikolopov, Petrova and Zhuravskaya 2011), and coup leaders ramped up inclusive nationalistic messages and musical depictions of coup leaders as reluctant patriots overcoming insurgency and corruption in Mali (Bleck and Michelitch 2017). However, while these examples substantiate the intuitive claim that ownership influences content and propaganda, they struggle to capture more holistically the extent to which non-state owners may have felt constrained to limit their content in order to retain their audience or maintain the content's credibility among their audience in the absence of changes in control. It is also important to note that changes in content in less clear-cut cases may not necessarily imply an increase in bias relative to an objective truth, if previous media owners were also biased.

In contexts where a significant private media market exists, legal strategies have induced media outlets to report favorably about the government. The clearest examples involve outright bans, such as Hugo Chavez's refusal to renew the public broadcast license of RCTV—Venezuela's main opposition television outlet, in 2007 (Kronick and Marshall 2018). Moreover, consistent with the prevalence of strict regulations across the globe (Djankov et al. 2003), the threat of punishment appears to have curtailed criticism of the government and bureaucracy. Stanig (2015) shows that newspapers in Mexican states where defamation laws are stricter report fewer corruption articles. The importance of incentives imposed by powerful states is reinforced by Di Tella and Franceschelli (2011), who leverage a difference-in-differences-type design to show that an increase in government advertising purchased by the Argentine government reduces a newspaper's coverage of government corruption scandals, increases the number of times that a scandal is ignored, and decreases the number of market-leading scoops. Qin, Strömberg and Wu (2014) similarly report a negative correlation between non-government advertising revenues and pro-government coverage of nine salient political issues across over 100 Chinese newspapers.

Estimating the government's influence over private media outlets has also inspired some particularly creative approaches illuminating "hidden" state influence, which can be extensive as well as expensive. McMillan and Zoido (2004) show that all major television stations and many large newspapers received

annual bribes worth millions of U.S. dollars during Fujimori's presidency in Peru. Notably, bribes received by media outlets often exceeded those received by parliamentarians by a factor of 100. This study, however, does not link these payments to media coverage. To get at this in the context of Chinese censorship of social media, King, Pan and Roberts (2013) continuously scraped 1,400 social media websites for new posts in order to detect the quantity and type of posts that were subsequently removed. Pointing to the potential importance of—or at least fear of—the media for coordinated action, they estimate that around a quarter of posts related to collective action are censored. Extending this analysis using a novel experimental design, whereby social media posts containing different content were randomized and sent from fake accounts across the world, King, Pan and Roberts (2014) subsequently demonstrated that the probability of censoring posts referencing collective action was around 40 percentage points higher than posts that did not. Interestingly, criticism of the government was no more likely to be censored then praise of the government. This stark contrast merits further investigation in less stable authoritarian regimes and democracies, where the costs of criticism may be more substantial than in China.

While differences in content between media outlets subject to varying levels of government control are compellingly documented, less is known about the conditions under which the state chooses to, or is able to, exert control over the media. This is likely due to difficulties in drawing comparisons across many media environments and the inferential limits of single case studies. Nevertheless, the economics of media market structure appears to play a key role. One detailed account of this process from within a single country is Lawson's (2002) examination of Mexico. Charting the gradual rise in media independence from Mexico's hegemonic ruling party, he posits that competition between outlets and journalistic norms played key roles. Leveraging more systematic data, Qin, Strömberg and Wu (2014) also support the predictions of Besley and Prat (2006) and Gehlbach and Sonin (2014) by showing that Chinese newspapers in growing advertising markets exhibit less pro-government bias. Petrova (2011) adds greater causal credence to this relationship by using a within-outlet and local regulation variation to show that newspaper independence and entry increased with advertising rates in the U.S. in the late nineteenth century. The importance of such economic incentives is underlined by Hughes and Lawson (2004), who suggest that simply changing ownership is unlikely to substantially alter state control in a "crony capitalism" equilibrium where the state continues to grants media outlets key business concessions.

Beyond ad revenues, the most notable cross-country study seeking to explain variation in media freedom is Egorov, Guriev and Sonin (2009). Leveraging within country variation, they find (2009) finding that such freedom is less likely to occur as non-democratic governments accrue natural resource wealth. This is consistent with the authors' argument that natural resource wealth reduces the government's dependence on an effective bureaucracy for securing rents, which in turn reduces the benefit of using the media to monitor bureaucrats relative to the cost that a negative media report could coordinate the regime's downfall. Intriguingly, though, no such relationship holds in democracies.

3.3 Is government-controlled media content effective?

As with independent media, extant evidence generally suggests that government editorial control is at least somewhat effective at altering voters' beliefs, voting behavior, and coordinated action. However, the benefits of editorial control for autocrats appear to face some important limitations.

Starting at the level of citizen beliefs, various studies highlight the significant influence of government propaganda by randomizing exposure to government propaganda within surveys. For example, Di Tella, Galiani and Schargrodsky (2012) find that Argentine government propaganda is as effective at reducing support for water privatization as being a direct beneficiary of water privatization is at increasing it. Huang (2018) similarly find that even Chinese propaganda that fails to persuade voters about overall performance can still convince citizens of the state's power and reduce their willingness to protest—which may be the government's ultimate objective anyway. Even when it is made clear to voters that different news sources are reporting the same government information, Bai et al. (2015) still find that Chinese citizens become more likely to believe the government claims about pollution propagated by multiple "independent" media outlets effectively under its control than a single outlet. Although the effects are rarely uniform across respondents (e.g. Bai et al. 2015; Stockmann and Gallagher 2011), such designs with atomized citizens imply that government-controlled media can influence beliefs in ways that are unlikely to reflect coordination motives or political maneuvering in response to the information's provision. Conversely, such studies abstract—by design—from the realities of voter interactions with other voters and politicians that define the political phenomena of arguably greatest interest.

Across a number of contexts and using a variety of empirical designs, politically-controlled media out-

lets have translated into greater electoral support for aligned candidates and parties. In Brazil, Boas and Hidalgo (2011) match city council candidates that acquired radio licenses with otherwise similar mayors that did not, finding that owning a radio station substantially increased the candidate's probability of victory. This is reinforced at higher levels of government too, where Boas (2015) uses a matched spatial difference-in-difference design to estimate a significant increase in the vote share of state and federal deputies in municipalities covered by FM outlets that the candidates own or oversee. Enikolopov, Petrova and Zhuravskaya (2011) report similar results in the more authoritarian context of Russia, where the takeover of NTV by the state-aligned oil giant Gazprom reversed the large anti-Putin electoral effects documented above when NTV was independent.

While the aforementioned electoral effects emanate from media outlets in place for most of an electoral cycle, it is natural to wonder how immediately state media control can be influential. To estimate this, studies have leveraged changes in ownership that altered content over a short period. Adena et al. (2015) compare the five weeks of Nazi propaganda that were broadcast by state-controlled radio stations between Hitler becoming Chancellor and the March 1933 elections with the previous pro-Weimar Republic content broadcast ahead of previous elections. Their difference-in-difference estimates imply that 10% of listeners voted for the Nazis due to such exposure. Bleck and Michelitch (2017) leverage a similarly sudden ownership change in the context of a small-scale field experiment rural Mali following a coup that established a military junta government. They randomized the provision of solar-powered radios to clans in villages that could only receive state-run radio broadcasts, whose content was used to bring ethnic groups together and celebrate the new governing junta's ability to save Mali from external threats. They find that, while ethnic identification indeed declines, voters became more likely to agree with the need to hold off elections within several months. Together, these findings rationalize the widely-held belief that capturing broadcast media is central in asserting state control.

Government propaganda exploiting fear and ethnic and religious differences has also proved alarmingly effective at encouraging mass engagement in state-sanctioned violence. The infamous RTLM "hate radio" broadcasts linked with the majority Hutu government during Rwanda's genocide appear to have, in villages with access to RTLM and their neighbors, encouraged approximately 10% of Tutsi deaths (Yanagizawa-Drott 2014). In addition to influencing vote choices, Adena et al. (2015) similarly show that Nazi-run

state radio stimulated anti-Semitism, including initial discrimination and violence against Jews, as well as subsequently increasing the deportation of Jews and attacks on synagogues. Both studies reach these conclusions by leveraging spatial variation in radio signal access induced by topographical features that inhibit line of sight radio waves, and tentatively ascribe media's effects to persuasion rather than coordination mechanisms. In sum, these studies suggest that even extreme forms of behavior are malleable to effective media messaging, and further highlight the risk of malevolent leaders controlling the airwaves.

However, manipulation of the media is not entirely unconstrained. First, propaganda can sometimes—at least partially—backfire. In some cases, this is due to its varying impact across heterogeneous populations. Adena et al. (2015) illustrate this by reporting negative electoral effects of Nazi propaganda in areas that were not historically anti-Semitic. Peisakhin and Rozenas (2018) similarly find that Russian television polarizes support for pro-Russia parties between those disposed for and against the West. In other cases potentially consistent with Bayesian persuasion, citizens can update negatively about the government's performance, even while they become less likely to oppose to the government (Huang 2018).

Second, and consistent with Gehlbach and Sonin (2014), excessive state-owned media content can also reduce the consumption of such content. Knight and Tribin (forthcoming) provide evidence of this in the context of Venezuela's *cadenas*—unannounced simultaneous takeovers of all broadcast public television channels by the government, often featuring Hugo Chávez himself. Using program-level audience rating data, they find that audiences drop off by up to one half on opposition channels during unannounced *cadenas*, relative to pro-Chávez channels. Moreover, cable channels that were not required to show *cadenas* also experienced a significant increase in viewership. Although these results do not necessarily imply longer-term electoral consequences or downstream effects on consumption of opposition outlets, they substantiate the risk that government propaganda could prove counterproductive if citizen receptiveness is limited when it is truly needed. Of course, substitution away from propaganda may not reduce its effectiveness if those that shift away were already resistant to its effects. Few studies speak directly to these questions of consumption, and in contexts like rural Mali it may matter less if no other media outlet is available.

Third, politicians' ability to impose state programming may be constrained by voters' desire to continue consuming existing popular programs. Kronick and Marshall (2018) argue that Chavez's shutdown of RCTV, which removed both the most robust criticism of his government and a substantial quantity of

popular television content, creates a rare opportunity to contrast media's persuasive effects with voter sanctioning of unfavorable outcomes. They evaluate the net electoral consequences by comparing—before and after RCTV went off the air—those that lost access to RCTV to those either never had it or still had access to RCTV through its cable and satellite relaunch. In this Venezuelan context, the sanctioning effect dominated, and could even have accounted for Chavez's loss in the 2008 constitutional referendum—the only electoral defeat of his career. This suggests that leaders in autocratic regimes have incentives to remain sensitive to voters' media consumption preferences, and perhaps exercise softer control over existing outlets. Considering the broader context, however, Chávez's crackdown could also have credibly threatened other private broadcasters enough to moderate their content subsequently (Kronick and Marshall 2018). In line with this possibility, Qin, Strömberg and Wu (forthcoming) find that forced newspaper exits in China bifurcate the market in terms of producing government propaganda news.

These creative empirical designs speak to important aspects of the effectiveness of media control, and generally highlight significant potential for states to reshape voter's political attitudes and behavior. However, there are natural limitations to these analyses. First, because empirical studies require variation in the independent variable, it is hard to assess the political impact of potentially scandalous events that are never unreported, which arise when all media outlets accept bribes (Besley and Prat 2006). Consequently, the evidence speaks more compellingly to the effects of framing, distorting facts, and creating propaganda than the most extreme forms of the "second face of power"—selectively dictating the agenda. Second, as Yanagizawa-Drott (2014) shows, disentangling direct from spillover effects is often problematic when assessing the effects of mass media. To help distinguish these effects, as Enríquez et al. (2019) do in the context of independent digital media, future experimental studies might consider using randomized saturation designs capable of isolating direct and spillover effects (see Baird et al. 2018). Third, as with independent media, the use of quasi-experiments trades off identification with precision regarding the content of the media outlets that cause the effect. Although it is harder to see how engaging in genocide could have resulted from less extreme content, in other cases it is not obvious whether media effects can be attributed to particular types of programming, e.g. whether support for the government arises from persuasion or the popularity of its non-political programming.

For related reasons, the evidence is not straight-forward to interpret in terms of the theories described

above. First, there is often a fine line between persuasion and coercion, where the latter might plausibly be defined to include strategic misrepresentation of views (e.g. Kuran 1991; Little 2017), the anticipation of sanctions, or direct manipulation. Second, the evidence thus far is yet to decisively separate media's capacity to quell or stimulate coordinated action—by changing perceptions of others' participation—from persuading voters to change their beliefs. Nevertheless, given the findings of King, Pan and Roberts (2013, 2014), it is hard to believe that the media does not at least have the potential to play a key coordinating role beyond influencing beliefs. Future studies might fruitfully be designed to more explicitly vary the extent to which it is common knowledge that other citizens also received information, as George, Gupta and Neggers (2018) do in the context of revealing criminal charges against candidates via mass SMS messages in India, as well as citizens' opportunities to directly communicate with each other.

4 "Liberating" access to the media

While fears about the effectiveness of state propaganda appear to be well-founded, modernization theorists have enthusiastically expressed the expectation that free mass media could also encourage political engagement and democratization (Lerner 1958) and erode regime legitimacy (Lawson 2002). The successes of "color revolutions" in Eastern Europe and the "Arab Spring" lend *prima facie* support to these hopes.

4.1 Broadcast media

Electoral evidence from several studies discussed in greater detail above suggests that novel exposure to opposition parties may be more effective than continued exposure to a dominant party's media content (Enikolopov, Petrova and Zhuravskaya 2011; Larreguy, Marshall and Snyder 2018*a*; Platas and Raffler 2017). While independent and opposition access to media can hurt autocratic and dominant party regimes, less is known about the origins of such challenges and when they will be tolerated. The examples just cited arise from rare situations like media regulation reforms resulting from contentious elections and geographically-specific external experimental interventions, although Lawson (2002) provides the beginnings of a template for media professionalization in Mexico. However, as noted above, a common reality is that governments remove opposing outlets, as observed in the case of RCTV in Venezuela, or at least subsume them under the state's propaganda control, as in the cases of NTV in Russia and China's censorship of

social media. This suggests that the empirical findings observed thus far may apply to a set of "complier" regimes that are less capable of removing opposition media or were more tolerant of challenges in the first place.

For these reasons, it is critical to know whether international interventions—whether by design or inadvertently through cross-border signal coverage—can overcome violence and dictatorship. Although this is an emerging literature, evidence thus far offers relatively sanguine evidence for policy-makers. One optimistic finding indicates that radio messaging can be effective in counteracting citizen violence. Examining the trail of violence left by the Lord's Resistance Army across central Africa, Armand et al. (2017) find that spatial variation in access to "come home" messages from previous participants and their families on FM radio predicts insurgents returning home, which in turn reduces fatalities in the local area. The popular press has credited similar targeting efforts for inducing FARC defections in Colombia. Providing systematic support for various historical accounts (e.g. Nelson 1997; Puddington 2000), Garcia-Arenas (2016) reports similar effects of anti-communist U.S. station Radio Liberty in the Soviet Union's tightly controlled media environment ahead of the 1991 Russian presidential elections.

However, there is also surprising evidence that popular foreign media can reduce the impetus for political reform. Leveraging districts with and without good access to West German television coverage to instrument for consumption of such channels, Kern and Hainmueller (2009) find that the net effect of exposure to West German television actually increased support for communist ideology and the East German regime and reduced exit visa applications in the late 1980s. Although their media coverage data is less precise than more recent studies adopting similar designs, the authors' interpretation that East Germans able to watch West German entertainment programming became more satisfied with life chimes with the reverse dynamic reported by Kronick and Marshall (2018) in Venezuela. A follow-up study further confirms that affected East Germans were not more likely to protest during the 1989 revolution (Kern 2011). These results point to the likely importance of reformers selecting content that inspires political opposition.

4.2 Internet and social media

Beyond broadcast media, the internet age is perceived to provide an unprecedented opportunity for disseminating political information. On one hand, this could help overthrow autocrats by revealing their poor

performance or coordinating citizen action. Those excited by this potential cite the role of social media platforms such as Facebook and Twitter in the "Arab Spring" and relatively recent demonstrations in Hong Kong, Iran, and Russia. On the other hand, social media provides the government with another means of spreading misinformation (Edmond 2013). An innovative nascent literature now provides some support for the former.

Although it is challenging to determine which factors were decisive in particular electoral and protest moments, various studies provide concrete evidence suggesting that social media can play an important role. Most notably, Miner (2015) argues that Malaysia's mass uncensored internet penetration drive significantly increased access to critical information about government performance, relative to the previously captured media environment. Leveraging a difference-in-differences design and using geographic factors limiting access to the internet service backbone as instruments, he finds that rising internet penetration accounts for around half the 14 percentage point drop—and even some political turnover—in district vote share for the hegemonic Barisan Nasional party in 2008. Paralleling the broadcast media results described above, internet information may first need to be politicized, as scandals in Malaysia were. More specifically addressing this issue, Reuter and Szakonyi (2015) show that voter perceptions of fraud after the 2011 Russian parliamentary elections were only positively correlated with consumption of social media platforms politicized by opposition elites.

Although the lack of effect on turnout in Malaysia suggests that internet penetration did not induce mass mobilization against the regime (Miner 2015), various accounts of the Arab Spring suggest that social media can also facilitate citizen coordination (see Howard and Hussain 2011). In addition to Steinert-Threlkeld's (2017) evidence discussed above, Acemoglu, Hassan and Tahoun (2017) report a strong positive correlation between daily Tahrir Square hashtags and daily protests numbers in the same square in Cairo during the Arab Spring. This correlation complements more compelling designs showing that mobile technologies support protest (Enikolopov, Makarin and Petrova 2018; Fergusson and Molina 2018; Manacorda and Tesei 2016).

For all its potential, the rise of the internet poses another important question: as cheap information becomes more accessible, will citizens seek out information not already provided by the state? And if they do, will they use the opportunity to learn about politics? Although the findings of Miner (2015) are positive in this regard, the study lacks corroborating evidence of internet consumption patterns. Delving further

into this issue yields somewhat mixed evidence. On one hand, akin to the U.S. finding that providing free newspapers had limited impact on political understanding (Gerber, Karlan and Bergan 2009), Chen and Yang (2018) experimentally show that providing Chinese students with free access to uncensored content for 18 months does not induce them to seek out politically sensitive information. This suggestion that a lack of political engagement is not necessarily a supply problem is consistent with the "rational ignorance" view that citizens would find ways to seek out information if they truly valued it (Downs 1957).

On the other hand, however, citizen demand for political information can be stimulated. In the same experiment in China, Chen and Yang (2018) also show that temporary financial encouragement to visit foreign news websites can produce persistent increases in such news consumption and critical assessments of the regime. Hobbs and Roberts (forthcoming) similarly find that a sudden imposition of government censorship induced Chinese citizens to seek out VPN technologies that enabled them to retain access to previously-uncensored websites as well as access politically sensitive websites that were previously inaccessible. These results suggesting that voters underestimate the value of less-biased political information are consistent with the need for opposition elites to activate the political use of internet-based technologies, and more broadly support the recurring finding that careful manipulation of the media can produce large effects. The flip side, of course, is that these findings simultaneously create strong incentives for autocrats to limit information or prevent potential opponents from propagating critical content. A key question is thus how citizen interest can be developed and harnessed, given that the motives underpinning the demand side of information consumption remain poorly understood in both developed and developing contexts.

5 Conclusions

The preceding review highlights many recent advances in understanding the persuasive effects of media on electoral and non-electoral outcomes in developing contexts. Across independent and state-controlled media, and the many cases that lie in between, several consistent and consequential findings stand out. First, across a variety of regime contexts, media appears to be an important tool of persuasion in democratic and autocratic developing contexts whether for better (e.g. accountability) or worse (e.g. inciting violence). Second, media's influence can nevertheless be constrained by citizens with different prior beliefs, low levels of credibility, and the presence of competing outlets. Third, while the media clearly influences voter actions by

directly altering consumers' beliefs, its role as a public signal also appears to coordinate electoral behavior, protest, and violence. Fourth, at least in certain situations, liberating access to media can provide an impetus for important societal changes.

As these observations indicate, academic understanding of the *effects* of media on beliefs and various important behaviors has progressed significantly. This in large part reflects the increasing emphasis of the field on creative natural experiments and increasingly field-based experimental designs that are able to isolate the effects of access to media outlets (and, to a lesser degree, particular content). In our view, this empirical basis is an essential foundation for further theoretical exploration, posing several key challenges for the next generation of research.

First, after focusing heavily on the effects of what information organically exists, the literature would benefit from a greater focus on endogenizing the consumption of information. On one hand, and in spite of the range of theoretical accounts of owner and government content generation, little is known empirically about the factors determining what content voters receive and how it is reported. As mass text, audio, and video data become easier to access and process, we anticipate that significant advances can be made in this area. Furthermore, few empirical studies have grappled with the question of how autocrats decide how extensively they should control the media. On the other hand, more research is required to understand the conditions under which voters seek out different types of information. Although existing work has highlighted the possible roles of election cycles, social incentives, and induced exposure, much is still to be learned about who consumes information when. As Marshall (2019) highlights, the interaction of supply and demand for information is likely to have important implications for political behavior.

Second, another key challenge is to better understand the mechanisms through which media operates, and thus how the media can be best harnessed to foster economic development and good governance in developing contexts. Because the large-scale study of the media in natural settings often relies on observational quasi-experiments or heterogeneity in the effects of randomized treatments, researchers often lack the control to decouple the mechanisms influencing beliefs and coordination and separate which elements of media content cause what. Similarly, outside of autocratic regimes, another key issue is establishing how politicians respond to and complement media. These issues of content and complementarities call for creative designs with multiple sources of exogenous variation able to separate between these mechanisms.

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