FILTERING REVOLUTION:
Reporting Bias in International Newspaper Coverage of the Libyan Civil War

Abstract: Reporting bias – the media's tendency to systematically under-report or over-report certain types of events – is a persistent problem for participants and observers of armed conflict. We argue that the nature of reporting bias depends on how news organizations navigate the political context in which they are based. Where government pressure on the media is limited – in democratic regimes – the scope of reporting should reflect conventional media preferences toward novel, large-scale, dramatic developments that challenge the conventional wisdom and highlight the unsustainability of the status quo. Where political constraints on reporting are more onerous – in non-democratic regimes – the more conservative preferences of the state will drive the scope of coverage, emphasizing the legitimacy and inevitability of the prevailing order. We test these propositions using new data on protest and political violence during the 2011 Libyan uprising and daily newspaper coverage of the Arab Spring from 113 countries. We uncover evidence of a status-quo media bias in non-democratic states, and a revisionist bias in democratic ones. Media coverage in non-democracies under-reported protests and nonviolent collective action by regime opponents, largely ignored government atrocities, and over-reported those caused by rebels. We find the opposite patterns in democratic states.

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What drives media coverage of armed conflict? Do news outlets in different countries respond to the same events in the same ways? Or do they filter information according to the preferences of the political regimes to which they belong? Regime-based reporting bias – distinct from the purported ideological bias in media coverage of domestic politics (Genzkow & Shapiro, 2006; Baum & Groeling, 2008; Groseclose, 2012) – is a persistent challenge for participants and observers of conflict. To political actors, media reports provide information on the performance and strength of an incumbent regime, the costs of collective action, and the benefits offered by the opposition. The press also informs scholarship, generates data, and shapes the public and academic debate about the nature of a crisis and the interests at stake (Schrodt, 2012). To the extent that systematic differences exist in media reporting of political events, they may carry important consequences for public knowledge, policy and scientific inference (Bennett et al., 2007; Entman, 2004; Hallin & Mancini, 2004; Iyengar & Kinder, 1987; Livingston & Bennett, 2003; McCombs & Shaw, 1972).

We argue that news coverage of a conflict depends on an interaction of two factors: the type of event that occurs on the ground, and the political context in which a news organization is based. Using new data on the 2011 Libyan uprising and daily newspaper reports from 113 countries, we uncover evidence of a status-quo (i.e. pro-regime) media bias in non-democratic states, and a revisionist (i.e. pro-rebel) bias in democratic ones. Consistent with an authoritarian interest in delegitimizing political opponents and dissuading emulation efforts at home, news media in non-democratic states under-reported protests and non-violent collective action by regime opponents, largely ignored government atrocities, and over-reported those committed by rebels. We find the opposite patterns in democratic states.

This article begins with an overview of existing research on reporting bias, and our own theoretical expectations about wartime news coverage. Section two describes our data on foreign policy newspaper coverage and political violence in Libya. Section three examines the empirical relationship between news coverage and a range of covariates at the newspaper, daily and country level. Section four evaluates these results in the context of broader academic and policy debates on media bias and political unrest, and identifies several directions for future research.

REPORTING BIAS AND COLLECTIVE ACTION

Reporting bias – the tendency to systematically under-report or over-report certain types of events – shapes our understanding of war.[1] In addition to producing much of the information available to government agencies, protesters and rebels, news organizations generate the text corpora social scientists use to study political movements. Since Galtung & Ruge (1965, 65) first asked "how events become news" in the pages of this journal, an increasingly large share of social science data has come to rely on content generated by news organizations.[2] If media sources provide divergent accounts of domestic and interstate conflict, then this divergence should be highly consequential for theory and practice (Snyder & Kelly, 1977; Schrodt, Simpson & Gerner, 2001; Reeves et al., 2006; Francisco, 1996). Despite efforts to ameliorate the impact of reporting bias, recent analyses of media-generated data continue to reveal striking disparities where we should expect similar trends (Schrodt, 2012, 552).[3]

The current study attempts to take a deeper look at reporting bias – not as a statistical nuisance, but as a theoretically important outcome in its own right. We consider two sources of reporting bias: "newsworthiness" and politics. The first originates from the commercial preferences of reporters and editors, who seek to maximize readership. The second originates from the political preferences of incumbent governments, who seek to maintain power. These two sets of preferences are often in conflict, and the types of events that receive coverage depend on the press freedoms afforded by a country's political system.

To maximize readership, news organizations privilege stories that are both surprising and salient to the intended audience (Galtung & Ruge, 1965, 67). Empirical evidence suggests that unexpected, rare or counterintuitive events tend to garner more coverage than events lacking such characteristics (Snyder & Kelly, 1977; Gra-

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1 Snyder & Kelly (1977) distinguish between two types of reporting bias: selection (differential completeness of reporting across different classes of events) and content (differential interpretation of events). In the following analysis, we restrict our focus to the first type of bias – the probability that certain types of events are reported.

2 Through a variety of manual and automated techniques, scholars routinely scour news reports to ascertain the timing, location, agency and other characteristics of violent events. COPDAB is an example of a manually coded event dataset (Azar, 1980); examples of automated coding systems include KEDS (Schrodt & Gerner, 1994), VRA-Reader (King & Lowe, 2003) and the CAMEO ontology (Gerner, et al., 2009); the current iteration of Militarized Interstate Disputes relies on a combination of the two methods (Landis, et. al, 2011).

3 These innovations include various methods of sample selection, filtering and scaling. See Earl, et. al (2004); Schrodt (2007).

ber, 1997; Earl, et. al, 2004). In a recent study of major uses of force, for example, Baum & Groeling (2010a) found that criticism of the U.S. president by members of his party received significantly more coverage than criticism by the opposition.

Of course, not all novel events are equally salient. Media organizations tend to report more heavily on large-scale, dramatic events (Woolley, 2000; Davenport & Stam, 2006), and those involving conflict or "bad news" (Patterson, 1996; Sabato, 1991; Cappella & Jamison, 1997; Baum & Groeling, 2010a). Additional factors include physical and cultural proximity (Martin, 1988; Morton & Warren, 1992; Rosengren, 1974; Shoemaker & Reese, 1996), with greater attention reserved for stories in certain parts of the world (Hafner-Burton & Ron, 2009), and in certain parts of a country, like urban centers (Danzger, 1975; Kalyvas, 2004). Journalists and media consumers also tend to lose interest in a conflict over time. Barring a substantial and sustained change in the tenor of events, like the U.S. troop surge in Iraq, this "coverage fatigue" generates a secular downward trend in the volume of war reporting (Davenport & Stam, 2006; Baum & Groeling, 2010b).

If journalistic perceptions of "newsworthiness" are the leading drivers of media coverage, then we should expect relatively little cross-national variation in the types of events that become news (Galtung & Ruge, 1965, 68) – news outlets everywhere should generally favor novel, large-scale developments that represent a change from the status quo. Yet news organizations are not the only arbiters of newsworthiness. The state in which a media firm is based may have its own preferences about the appropriate breadth, depth and emphasis of news coverage, particularly when the subject is politically sensitive – as civil unrest and war surely are. The extent to which states impose these preferences varies, although nondemocratic regimes are particularly hostile to press freedom (Egorov et al., 2009; Van Belle, 2000).

A state may shape the news agenda in one of three ways. The first is through direct ownership and control of media sources (Djankov et al., 2003; Hughes & Lawson, 2004; Enikolopov et al., 2008). While 3.5 percent of newspapers are publicly owned in an average democratic state, the corresponding percentage among non-democracies is nearly seven times higher, at 23.1 percent.[4] Second, a state may regulate the activity of privately owned media through indirect forms of influence, like licensing requirements, taxation, and laws limiting certain forms of expression (Whitten-Woodring & James, 2012). Freedom House designated only 2 percent of non-democracies as having a "Free" media environment in 2011, compared to 55

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4 "Democracy" is here defined as a Polity2 score of 6 or higher (Jaggers & Gurr, 1995). Newspaper data are described in detail below.

percent of democracies. Third, states may promote norms by which media owners and journalists face strong incentives to self-censor and avoid "watchdog" reporting of potentially sensitive topics (Bennett et al., 2007; Schudson, 2003; Sigal, 1986; Djankov et al., 2003). To maintain working relationships with government patrons and sources of information, knowing when to "sit on a story" can be as valuable as "getting the scoop."

Traditional print and broadcast journalism, of course, do not represent the full spectrum of contemporary media environments, which also include online social media, blogs and forums. Research on democratic states has shown that markets for alternative information sources emerge where consumer confidence in traditional media is low, and differences between online and offline media content are greater where censorship of offline media is high (Romanyuk 2011). Opportunities for such substitution, however, remain scarce in non-democracies, where internet access is generally more limited – reaching an average of 27 percent of the population, compared to 55 percent in democracies[5] – and censorship is relatively high – the OpenNet Initiative found evidence of substantial or pervasive internet censorship in 61 percent of non-democracies, compared to 25 percent of democracies. Moreover, even where citizens have ready access to uncensored online information, recent research (Zuckerman 2013) suggests the overwhelming majority of news consumption – 97 percent on average across the 10 nations with the largest Internet consuming populations – is domestically sourced. This suggests that the same regime effects we anticipate for traditional media most likely also prevail online.

How do commercial and political sources of reporting bias interact to shape coverage of conflict? Recent research has shown that – even in very repressive regimes – censorship does not apply uniformly to all types of political unrest (Stein 2013, 2007). For instance, the highly authoritarian regime in Qatar – which in November 2012 sentenced a poet critical of the regime to life in prison (*New York Times 2012*) – allows satellite television station *Al Jazeera* to flourish, free from state censorship. In a recent study of the Chinese blogosphere, King et al. (2012) show that Beijing moves quickly to suppress language that may potentially mobilize collective action, but permits other forms of political speech and regime criticism.

Protest and rebellion represent classic collective action problems, where participation is individually costly, benefits are non-excludable, and individuals prefer to free ride on the contributions of others. While both democrats and autocrats prioritize political survival, the price of losing power is greater for dictators than elected

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5 Source: Telecommunication Development Sector (http://www.itu.int).

officials (Debs & Goemans, 2010). For this reason, non-democratic leaders face strong incentives to suppress any collective action that might result in a change of government.

Information on collective action tends to promote further collective action (Kuran, 1989; Lohmann, 2002). Media coverage of such activities – and the number of participants involved – increases public awareness of a regime's performance, and transmits informational cues about the extent of popular discontent (Lohmann, 1994), and the regime's willingness and capacity to repress protests (Stein 2007, 2013). Such coverage breaks the appearance of an inevitable status quo, raises the opposition's expected share of support, and constrains potential government responses (Kuran, 1989). Confronted with a highly visible protest movement, embattled governments face a stark choice between tolerance – which reduces the expected costs of opposition – or repression – which can invite backlash mobilization (Francisco, 2004). Either way, news coverage of a social movement may not only facilitate mobilization, but also legitimize it (Gamson & Wolfsfeld, 1993).

Not all forms of collective action are necessarily threatening to nondemocratic regimes. An emerging literature has argued that limited media freedom can be a useful source of corrective feedback for autocratic rulers. Media coverage of protests directed at local officials, for instance, may help a central government monitor the performance of subordinates (Egorov et al., 2009; Debs, 2007).

Mobilization against peer autocratic regimes, however, potentially is more dangerous. Successful contention in one state, through its example, can raise the opposition's expectations that state authority could be successfully challenged. As individuals update their prior beliefs about the resilience of seemingly powerful regimes, they become more likely to attempt emulation efforts at home. Scholars have observed such dynamics during the post-communist "color" revolutionary movements in Serbia, Georgia, Ukraine and Kyrgyzstan (Beissinger, 2007), and in earlier waves of regime contention in Europe (Weyland, 2009).

Foreign political upheavals can generate additional incentives for reporting bias due to the relative difficulties of independent verification (Gentzkow & Shapiro, 2005). Government manipulation of the news – direct or indirect – is commonly recognized as possible but cannot be easily observed (Edmond, 2008). A consumer may seek to verify, at a cost, the information she receives from traditional media. Yet these costs are relatively high if the events' participants are foreign nationals, and there is little information transmission through informal family and social networks (Francisco 2004). Although alternative media sources not as easily controlled by the state (e.g. internet news, blogs, Tweets) may offer citizens some

means to overcome closed communications, verification remains more difficult than in cases of domestic protest and rebellion, where ex post feedback is more immediately available.

In sum, the nature of reporting bias depends on how media organizations navigate the political context in which they are based. Where government pressure on the media is limited – as in most democratic regimes – the scope of reporting should reflect the "true" preferences of media organizations, most of which are privately owned and typically follow the traditional journalistic standards of newsworthiness to maximize audience attention and revenue. In military conflicts, these preferences tend to result in disproportionate coverage of surprising, large-scale, dramatic developments that challenge the conventional wisdom and, ceteris paribus, privilege change over the status quo. As one prominent journalist observed, stories "like the plane took off and flew safely [are] not really news unless that were a big change".[6]

In contrast, where political constraints on reporting are more onerous – as in non-democratic regimes – the conservative preferences of the state will wield greater influence over the scope of coverage. These favor emphasis on the legitimacy and inevitability of the prevailing order, or, stated differently, coverage of the planes that take off and then safely land.

In a revolutionary context like the Arab Spring, the media-government interaction should produce two distinct patterns of news coverage. In democracies, where government control over reporting is more limited, news coverage should reflect the commercial preferences of publishers and journalists, emphasizing change over the status quo. In non-democracies, where government ownership and influence over the media is more extensive, news coverage should reflect regime preferences for political self-preservation, emphasizing the stability of the status quo.

- *Hypothesis 1*. Relative to media outlets in democratic states, news organizations in non-democracies will offer less coverage during periods favorable to the challenger (e.g. after non-violent protests and government abuses of civilians), and more coverage during periods favorable to the incumbent (e.g. after civilian victimization by rebels).

[FIGURE 1]

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6 ABC News Washington Bureau Chief Robin Sproul, quoted in Baum and Groeling (2010a: 24).

This hypothesis, summarized graphically in Figure 1, does not imply that media organizations in democratic states are entirely immune from state influence, or that state and media interests must necessarily be in constant conflict. Wartime restrictions on reporting are common in democratic states, either through direct government censorship (Roeder, 1995; but see Hallin, 1989), or through self-imposed limitations (Bennett et al., 2007) and "rally-around-the-flag" effects (Groeling & Baum, 2008). These restrictions will not necessarily negate the media's preference for change over the status quo, and in some cases, state and media preferences may align. In other instances, their preferences will diverge, as when democracies support incumbent regimes over rebel groups seeking to overthrow them. A case in point is Afghanistan, where the U.S. has supported the incumbent regime of Hamid Karzai against the Taliban insurgency.

One alternative explanation is that reporting bias depends less on regime type than on political-military alliances. By this logic, democracies may have a pro-status quo bias where they have made commitments to the regime, and a pro-change bias where they have allied with rebels. We consider this possibility below.

LIBYA CIVIL WAR AND NEWSPAPER COVERAGE DATA

The 2011 Libyan Civil War offers a unique opportunity to test these propositions. The popular uprising against the regime of Colonel Muammar Qaddafi – and subsequent NATO intervention – represent the type of unexpected development that media organizations are likely to find "newsworthy," but non-democratic governments may find threatening. The relatively short duration of the Libyan crisis (less than one year, from the beginning of protests to the overthrow of Qaddafi) enables us to track news coverage over the full course of the uprising, with less contamination by coverage fatigue than we might find in more protracted conflicts, like the civil war in Syria.

More importantly, the Libyan case presents a hard test for theories of censorship and media bias. The conflict occurred during the height of the Arab Spring, when international media attention was concentrated on North Africa and the Greater Middle East, and abundant offline and online social media amplified voices underrepresented in print and broadcast journalism. Because the costs of verifying suspicious or incomplete news reports were relatively low, and the probability of credibility-damaging falsification was high, governments and media firms should have felt relatively few incentives to misrepresent the nature of events on the ground (Gentzkow & Shapiro, 2005; Edmond, 2008). If a democratic/non-

democratic divergence in reporting can be observed during such a high-visibility crisis, we can expect this relationship to hold under less onerous circumstances.

To test these propositions, we construct a new dataset from 213,406 articles published by 2,252 newspapers in 113 countries between 18 December 2010 (first day of protests in Tunisia, which ignited the Arab Spring) and 23 October 2011 (three days following the capture and death of Muammar Qaddafi). While news coverage certainly appears in various forms of electronic and print media, we confine our current focus to newspapers for three reasons. First is newspapers' international prevalence as primary sources of information on political, economic and social events. In 2011, there were three times as many daily newspaper readers as broadband internet users – 1.7 billion to 580 million worldwide.[7] Although the revenues and readership of print media have declined in recent years, a disproportionate share of online news still originates with newspapers – in March 2013, seven of the ten most popular online news sources either *were* online versions of print newspapers or featured aggregated content from online newspapers.[8]

Second, a focus on newspapers enables us to collect a relatively consistent and representative data sample across the largest possible set of countries. Internationally, newspapers come in three basic formats (i.e. broadsheet, Berliner and tabloid), face similar space constraints, and generally cater to more specialized, local audiences than wire services and cable news. Foreign newspaper articles also remain more extensively archived in electronic databases than broadcast transcripts, permitting us to maximize the geographical scope of our study.

Third, newspaper-based event data have a long tradition in the study of social movements (Earl, et. al, 2004). Where government and NGO data on violence and protest were unavailable or unreliable, newspapers and eyewitnesses have generally offered our *only* empirical records of conflict events. A focus on newspapers permits some continuity between our findings and previous work.

[FIGURE 2] [FIGURE 3]

Figure 2 presents our sample of 113 countries. For each country, we conducted a census of all daily and weekly newspapers listed in the electronic databases Lexis-Nexis and ISI Emerging Markets. We identified a universe of 2,252 unique and active (i.e. currently in press) newspapers, excluding weekend supplements, inserts, evening editions and similar associated materials.

7 Source: WAN-IFRA World Press Trends Database (http://www.wptdatabase.org/).

8 Source: ebizmba.com (http://www.ebizmba.com/articles/news-websites).

For each newspaper, we collected every unique article containing the term "Libya" (in English or the newspaper's source language) and published between 18 December 2010 and 23 October 2011. We found 213,406 such articles in total, including 11,781 (6 percent) opinion pieces and 201,193 (94 percent) news stories. Figure 3 shows their distribution by regime type and region.

Because news coverage of conflict is by necessity event-driven, we sought to formally account for the day-by-day dynamics of those events. We did so by collecting incident-level data on the type, intensity and lethality of insurgent and government violence within Libya. To avoid overlap with our newspaper corpus, we relied on a mutually exclusive ensemble of electronic sources and newswires, including *Al Jazeera*, *BBC News*, *CNN*, *Reuters*, *RIA Novosti*, *Xinhua* and several dozen others. Following best practices in conflict studies (Francisco, 1996; Reeves et al., 2006), we constructed our events data set from a regionally diverse set of news agencies to offset under-reporting in any single source, and drew on media with relatively few space- and advertising-related limitations on the volume of information published.

For each of 1,510 unique events identified during the window of observation, we recorded its location, timing, participants (unarmed civilians, armed rebels, government police or military forces, NATO), type (protest, arrest, use of ground force, use of artillery or air power), technology (selective vs. indiscriminate), and casualties (wounded and killed, grouped by target and perpetrator).

We aggregated the newspaper and violence data into three levels of analysis: country, country-day and newspaper-day. For the newspaper-day data, we created a dummy variable, Publish_{ijt}, coded 1 if newspaper i in country j decided to publish an article on Libya on day t, and 0 otherwise. We created an analogous variable at the country-day level, Publish_{jt}, coded 1 if at least one newspaper in country j published an article on Libya on day t. At the country level, the outcome variable is the proportion of newspapers (by country) that ran a Libya story on days following each of three types of events: non-violent protests, rebel-induced civilian deaths, and government-induced civilian deaths. Formally,

$$\text{Coverage}_j = {}^1/_{T(z)} \, \Sigma_{\tau(z)} \left({}^1/_i \, \Sigma_i \, \text{Publish}_{ij,\tau(z)} \right) \tag{1}$$

where $\tau(z) \in \{1,\ldots,T(z)\}$ indexes the set of days following an event of type $z \in$ {non-violent protest, rebel-induced civilian casualties, government-induced civilian casualties}, i indexes the newspaper and j indexes the country.

We measure democracy in several ways. First, we use a country's Polity2 score – an aggregate measure that runs from -10 (full autocracy) to +10 (full democracy). We use cutoff of +6 or higher as a democracy indicator in the results below, but provide a sensitivity analysis in the online appendix with alternative cutoffs (+4 to +8).[9] Second, we use Freedom House's Press Freedom scores – which range from 0 to 100, lower numbers representing more freedom. Unlike the more general Polity variable, this measure speaks more directly to government restrictions on speech and expression.[10] Third, we used the Cingranelli-Richards "Freedom of Speech" measure, which indicates the extent to which freedoms of speech and press are affected by government censorship, including ownership of media outlets.[11] These measures are strongly correlated with each other.[12] Yet by testing our hypothesis with three different measures of democracy and freedom of the press – and multiple thresholds within each measure – we can have more confidence in the robustness of our results. Due to space constraints, we focus on the Polity variable below, and report full results in the online appendix,

In addition to the variables described above, we collected several country-level controls, including wealth, geographic distance from Libya, internet access, internet censorship, education, and domestic conflict history. In the appendix we provide a full list of variables considered, their levels of measurement, summary statistics and source documentation.

DESCRIPTIVE STATISTICS

What does an initial glance at the data tell us about differences in reporting between democratic and non-democratic states? During our period of observation, the average country saw 1889 newspaper articles about Libya – approximately 6 per day. Their distribution, however, was far from uniform. Given the newsworthiness preferences that prevail among relatively free, market-oriented media, we would anticipate more coverage of the Libya conflict, all else equal, in democracies. In fact, this is what we find. Although the countries in our sample were about even-

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9 The Polity IV team recommends treating a Polity2 score of +6 as a lower bound for democracy (Jaggers & Gurr, 1995).

10 We used Freedom House's "Free" (0 to 30) and "Partly Free" (31 to 60) designations, separately, as measures of democracy.

11 We used values of 2 ("no censorship") and 1 ("some censorship") as measures of democracy.

12 The pairwise Pearson correlation coefficient is -.8 for Polity2 and Freedom House, .7 for Polity2 and Cingranelli-Richards, and -.8 for Freedom House and Cingranelli-Richards.

ly split between democracies and non-democracies – 52 to 48 percent – democratic states accounted for a full 86 percent (183,726 of 213,406) of all published articles.[13] This imbalance is partly due to the vastly more developed media markets of democracies. The average democracy was home to 18-19 daily newspapers, while the average non-democracy had 7-8. Yet even within individual newspapers, the divide was apparent. On any given day, an average newspaper in a democratic country had a 10 percent chance of publishing at least one story on Libya. In non-democratic states, this figure was 7 percent.[14]

Beyond a consistently lower volume of coverage, the editorial choices of newspapers in non-democracies were more homogenous. On any given day, newspapers in non-democratic states were significantly more likely than newspapers within democracies to reach the same decision on whether or not to cover Libya. News coverage in democratic states was both more frequent and more diverse.[15]

On what sorts of days were newspapers likely to run stories about Libya? Newspapers in both types of countries shared a preference toward reporting on large-scale events, and tended to publish stories following days of heavy fighting. Coverage of Libya following above-average levels of civil war violence was 72 percent higher than following below-average levels of fighting. This increase was greater in democracies than non-democracies – a 75 versus 60 percent gain – but the response was in the same direction.

The similarities end, however, once we take a deeper look at coverage of specific types of conflict events. Consistent with our expectations (Figure 1), newspapers in democratic states were significantly more likely to publish stories following protest activity. The average proportion of newspaper-days with coverage after nonviolent protests was .08 for non-democracies, but over twice as high, .22, for democracies.[16] Articles in non-democratic states generally followed below-average levels of protest, highlighting a cautious approach toward expressions of collective action.

A further disparity can be seen in coverage of civilian victimization. Newspapers in democratic states were more likely to run Libya stories following government atrocities, while those in non-democratic states were more sensitive to anti-civilian

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13 Democracy is here defined as a Polity2 score of +6 or higher.

14 $E[\text{Publish}_{ijt} \mid \text{Democracy}_j = 1] = 0.101$, $E[\text{Publish}_{ijt} \mid \text{Democracy}_j = 0] = 0.073$. Kolmogorov-Smirnov test statistic $D = 0.0272$, p-value $< 2.2\text{e-}16$.

15 We obtained this finding through normalized Shannon entropy scores of coverage decisions over time by newspapers in democratic and non-democratic countries (Boydstun, 2013: 119). We provide a description of the method and full results in the appendix.

16 Kolmogorov-Smirnov test statistic is 0.48, with $p<2.2\text{e-}05$.

violence by rebels. Non-democracies saw an average of .11 newspaper-days with coverage after government killings of civilians, compared to .22 for democracies.[17] These relative proportions flipped after rebel abuses of civilians: .18 for non-democracies and .16 for democracies.[18]

[FIGURE 4]

These patterns are visible on Figure 4, which shows several overlapping time se-ries. The first is the total number of violent civil war events in Libya per day (grey vertical bars). The second is an indicator of whether specific types of violent events occurred on a given day: non-violent protests (orange diamonds), rebel killings of civilians (black triangles) and government killings of civilians (green asterisks). The third is daily levels of newspaper coverage of Libya by democracies (solid blue line) and non-democracies (dashed red line) – measured as the proportion of country's newspapers running a story on Libya per day, averaged over all countries within each regime type.

Several patterns are apparent from Figure 4. First, the level of newspaper cover-age across all regimes is event-driven – high levels of coverage followed high levels of civil war violence. Second, coverage was consistently higher in democracies than non-democracies, with the solid line almost always above the dashed one. Third, non-democratic news coverage declined on days following protests, and spiked af-ter rebels killed or wounded civilians. This divergence is most pronounced in Feb-ruary and March 2011, when democratic news coverage soared following reports of protests and government repression, but non-democratic news coverage remained stagnant until the first report of rebel-induced civilian deaths.

This differential attention to the military conduct of the warring parties is con-sistent with our expectations. To the extent that rebel violence against civilians in-dicates the opposition's incompetence or disregard for the population's safety, in-creased attention to such incidents underscores the preferability of stability and the status quo. Similar practices by pro-regime forces, meanwhile, may signal the unsustainability or illegitimacy of the status quo.

While general patterns in the data support our argument about a democrat-ic/non-democratic divergence in reporting of protest and rebellion, and our corre-sponding hypothesis (H1), we would like to draw more general inferences about patterns of news coverage under a variety of counterfactual scenarios. In addition,

17 Kolmogorov-Smirnov test statistic is 0.39, with p<.001.
18 Kolmogorov-Smirnov test statistic is 0.17, with p>.1.

we want to see if these patterns persist when we control for other factors, like coverage fatigue, newspaper ownership, and potentially relevant country attributes like internet access, education and geographic proximity to Libya. To do so, we turn to a more rigorous set of tests.

EMPIRICAL ANALYSIS

If our theoretical expectations are valid, news coverage following protests and government-induced civilian casualties should be higher in democracies, and coverage after rebel-induced civilian casualties should be higher in non-democracies. To test these propositions, we perform a regression analysis at each level of aggregation. At the country level, we use Beta regression to model the proportion of newspapers running a Libya story after a specific type of conflict event. We use a Beta model because our outcome – $Coverage_j$, as defined in equation 1 – is continuous and confined to the standard unit interval $(0,1)$.[19] For each of three $Coverage_j$ variables (i.e. after protests, after rebel- and government-induced civilian casualties), we estimate the following equation:

Country

$$g(\mu_j) = Democracy_j \cdot \alpha + \mathbf{x}_j \beta + u_i \qquad (2)$$

where μ_j is the expected value of $Coverage_j$, $g()$ is a link function, $Democracy_j$ is a binary indicator of whether county j was a democracy in 2010, $\mathbf{x}_j$ is a matrix of covariates and u_i is an error term.

At the country-day and newspaper-day levels, we estimate a series of mixed-effect logit regression models:

Country-day

$$Publish_{jt} = logit^{-1}[Democracy_j \cdot \alpha + \mathbf{z}_t \theta + Democracy_j \cdot \mathbf{z}_t \gamma + \mathbf{x}_{ij} \beta + Publish_{j,t-1} \rho + u_j + u_t + \varepsilon_{jt}] \quad (3)$$

Newspaper-day

$$Publish_{ijt} = logit^{-1}[Democracy_j \cdot \alpha + \mathbf{z}_t \theta + Democracy_j \cdot \mathbf{z}_t \gamma + \mathbf{x}_{ij} \beta + \mathbf{W} \cdot Publish_{i,t-1} \lambda + u_i + u_t + \varepsilon_{it}] \quad (4)$$

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19 Formally, the model assumes $Coverage_j \sim B(\mu_j, \phi)$, where μ_j are country-level means and ϕ is a constant precision parameter. An additional attractive feature of the Beta regression model is that it naturally accommodates heteroskedasticity and asymmetry in the data (Ferrari and Cribari-Neto, 2004).

where the dependent variable, Publish$_{ijt}$, is an indicator of whether newspaper i in country j published a story on Libya on day t.[20] The lower-order interactive term Democracy$_j$ is a binary indicator of whether county j was a democracy in 2010.[21] We consider two vectors of covariates $\mathbf{z}_t$ and $\mathbf{x}_{ij}$. $\mathbf{z}$ includes time-variant measures of conflict intensity (number of protests, civil war violence events, rebel- and government-induced civilian casualties on day t-1).[22] $\mathbf{x}$ includes time-invariant newspaper-level and country-level characteristics (public ownership, distance of country j from Libya, internal conflict years since WWII, education, percent of population with internet access, number of newspapers in country, and internet censorship). To capture heterogeneity in coverage across different types of regimes, we interact Democracy with the covariates in $\mathbf{z}$. We also add a linear daily trend to control for coverage fatigue over time.

In addition to the relationships of central theoretical interest, we sought to control for several confounding factors. The first of these involves potential violations of the independence assumption: what newspaper i publishes on day t is probably not independent of what the same newspaper – or others within the same ownership network – published on day t-1. To this end, we include a temporal lag and a time-lagged network autoregressive term $\mathbf{W} \cdot$Publish$_{i,t\text{-}1}$, which represents the proportion of co-owned newspapers that featured a Libya news story on day t-1.[23]

Finally, we cannot exclude the possibility that unobserved heterogeneity in newspapers' (or countries') individual attributes, such as editorial idiosyncrasies, niche market characteristics and stylistic norms, could simultaneously drive variation in the explanatory variables and the propensity to publish a story on Libya. If such unobserved characteristics are correlated with the error terms of our models, pooled estimation will produce biased parameter estimates. We therefore include newspaper-level, country-level and temporal random effects (u$_i$, u$_j$, u$_t$) to control for bias induced by this unobserved heterogeneity and to examine variation within and across newspapers and countries, and over time.

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20 On the country-day level, Publish$_{jt}$ indicates whether at least one newspaper in country j publishes a story on Libya on day t.

21 Unless otherwise specified, the results reported below define Democracy as a Polity2 score of +6 or higher. However, alternative measures of regime type and press freedom yielded very similar estimates, as we report in the online appendix.

22 On the country-day level, $\mathbf{x}$ includes newspaper-specific measures aggregated to the country level (e.g. proportion of publicly-owned newspapers in country j, average network size in j).

23 $\mathbf{W}$ is a row-normalized connectivity matrix of the ownership network shown in the appendix. On the country-day level, we replace the network autoregressive term with a temporally-lagged dependent variable, Publish$_{j,t\text{-}1}$.

[TABLE 1] [TABLE 2] [FIGURE 5]

The results support our expectations in Hypothesis 1, at all levels of aggregation.

At the country level (Table 1), democracies experienced a significantly larger volume of coverage following protests and government-caused civilian deaths. 22 percent of newspapers in democratic countries ran a story about Libya on days after protests (95% CI: 16, 29), compared to 10 percent in non-democracies (95% CI: 6, 15).[24] On days after government abuses of civilians, 25 percent of newspapers in democracies would publish a story about Libya (95% CI: 18, 32), compared to 15 percent in non-democracies (95% CI: 10, 20).[25]

These results hold at all Polity2 cutoffs from +4 to +8, as well as with alternate measures of democracy and free speech. Compared to countries with a Freedom House designation of "Not Free," those designated "Partly Free" or "Free" saw 34 percent more coverage after protests (CI: +3, +74) and 26 percent more after government killings (CI: +1, +54). We found similar trends among countries with "Some" or "No" government censorship according to Cingranelli-Richards.[26]

Although media in democracies featured relatively less coverage following rebel killings of civilians, the differences – at least on the country level – were not statistically significant.[27]

The contrast becomes starker when we examine the day-by-day dynamics of news reporting (Tables 2 and 3). Figure 5 summarizes the most theoretically relevant empirical relationships for country-day and newspaper-day level data. It reports changes in the predicted probability of a publication on Libya, under counterfactual scenarios where we increase the value of a conflict variable (e.g. number of protests or killings on the preceding day) from its 1st to 99th percentile, holding all other conflict covariates constant at their median values.[28]

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24 Simulations based on Model 2. All other variables held constant at their medians (Public ownership = 0, Distance from Libya = 3817 km, Years of secondary school = 6, Conflict years since 1945 = 1, Percent with internet = 38.7, Number of newspapers = 5).

25 Simulations based on Model 6.

26 The corresponding percent increases are 41 (95% CI: 9, 79) and 25 (90% CI: 1, 53).

27 Simulations from Model 4 suggest that on days after rebel-induced civilian casualties, 22 percent of newspapers in democratic countries would publish a story about Libya (95% CI: 16, 29), compared to 28 percent in non-democratic countries (95% CI: 18, 37).

28 The median values are Protest=0, Civilian casualties (by G) = 0, Civilian casualties (by R) = 0, Civil war violence = 1.

As predicted, media firms in non-democracies responded to non-violent collective action by reducing media coverage, while those in democracies responded by increasing coverage or making no change at all. An increase in Libyan protests from 0 to 3 daily events (1st to 99th percentile) was followed by a 38 percent decrease (CI: -50.8, -22.3) in the probability that a newspaper in a non-democratic country published a story on Libya. In democracies, the same spike in protests yielded a 14 percent increase in probability of publication, though the latter increase is not statistically significant at conventional levels (CI: -4.2, +35.1).[29] More importantly, the gap between these two responses – from -38 percent to +14 percent – was itself highly significant, with no overlap between confidence intervals. As hypothesized, coverage trends in democracies and non-democracies were significantly different from each other, in degree and kind.

This heterogeneous relationship holds at the newspaper-day level, where a hypothetical increase from 0 to 3 Libyan protests produced a 45 percent drop (CI: -52, -37) in the probability of an article about Libya among newspapers in nondemocratic states. In democracies, the same counterfactual yielded no significant change in probability (-1.2, CI: -5.2, +3.4). [30] As before, the gap between democratic and non-democratic responses to protest was substantial and highly significant.

We also find differences in reporting after civilian victimization, depending on which actors inflicted the violence. The probability of Libya coverage in non-democracies rose by 47 percent (95% CI: +22.7, +72.8) following a spike in rebel-induced civilian deaths from 0 to 18 (1st to 99th percentile). Media outlets in democracies were less responsive to rebel abuses, with a statistically insignificant 5 percent decline in coverage (CI: -20.8, +12.6).[31] This difference between democratic and non-democratic media was significantly greater than would occur by chance.

These results persist at other levels of analysis. An average newspaper in a non-democratic state saw a sizeable uptick in coverage (+131.1 percent; CI: +116.7, +145.9) after an increase from 0 to 18 rebel-induced civilian casualties on the previous day. There was no change in coverage among newspapers in democracies (+1.3 percent; CI: -3.8, +6.3).[32] Once again, the confidence intervals for democracies and non-democracies did not overlap. In 10,000 simulations, the smallest predicted increase in probability of coverage among non-democratic newspapers was significantly higher than even the largest increase among democratic media.

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29 Simulations based on Model 7.
30 Simulations based on Model 11.
31 Simulations based on Model 7.
32 Simulations based on Model 11.

Civilian victimization by government forces produced the opposite patterns. Democratic states saw significantly more news coverage following an increase from 0 to 130 civilians killed or wounded by the government (1st to 99th percentile), with a 15 percent uptick in probability of a Libya story (CI: +1.6, +28.3). In the same counterfactual scenario, non-democratic states were neither more nor less likely to see a story on Libya (+4.5 percent; CI: -7.2, +16.9).[33]

We found the same pattern on the newspaper-day level of analysis, where an increase from 0 to 130 government-caused civilian casualties preceded an 8 percent increase (CI: +5.2, +10.6) in coverage probability among newspapers in democracies, but a statistically insignificant decrease among newspapers in non-democracies (-4.5 percent; CI: -11.4, +2.6).[34] Although the disparity between democratic and non-democratic responses was not as profound for government abuses as it was for other categories, it remains significant at the newspaper-day level. Democratic and non-democratic media, the data suggest, responded to the same events in very different ways.

As we report in the online appendix, these results are robust to alternative measures of democracy and press freedom. They are also consistent when we look only at major, high-circulation newspapers (i.e. greater than 100,000 copies per day, or top quintile of circulation by country), and when we disaggregate the articles into general news stories and opinion-editorials.

A potential objection to the above is that almost every country that militarily intervened in the Libyan Civil War was a member of NATO, and hence a democracy.[35] The tendency of media in democratic states to overlook rebel crimes, while emphasizing popular protests and government atrocities, may reflect alliance commitments and rally-around-the-flag effects more than regime type. This is a non-trivial concern, and one that is difficult to directly evaluate. Because democratic governance is a key criterion for membership in NATO, there is insufficient variation to ascertain whether democratic and non-democratic alliance members saw different types of coverage. Yet not all democracies are NATO members, and we can still ask whether NATO members – or the subset of NATO that directly participated in the coalition – reported differently on the crisis than other democratic states. To this end, we replicated the models in equations (3) and (4), replacing "Democracy" in the interaction terms with "NATO member" – or, more narrowly, "coalition member" – while restricting the sample to democratic states and the

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33 Simulations based on Model 7.

34 Simulations based on Model 11.

35 The exceptions were Qatar and the United Arab Emirates.

date range to post-intervention (i.e. after March 19, 2011).[36] We report the full results in the appendix due to space constraints, but offer a brief summary here.

We find little evidence of an "alliance effect." Following almost every type of violent event, the models show either no difference in coverage propensity between NATO and non-NATO democracies, or differences in the opposite direction of what we might expect. For instance, newspapers in non-NATO democracies were actually *more* likely to publish Libya stories after government killings of civilians, and *less* likely after rebel killings – although these differences were, at best, marginally significant. We found similar patterns when comparing democracies directly participating and not participating in the intervention. Although we cannot exclude the possibility that alliances have other potentially important effects on news coverage, military commitments do not drive the specific democratic reporting biases we identified in the Libyan case.

CONCLUSION

We argued that reporting biases in news coverage of conflict can be attributed to political regime type – in democracies, media firms' preferences for profit maximization have more influence on reporting than state preferences for political survival; in non-democracies, the opposite relation holds. Our data offer strong evidence in support of the proposition that media coverage of international conflict and civil war depends on the political context in which a news organization is based. At least in the case of Libya, media in non-democracies evidenced a clear pro-incumbency bias in their news coverage, while their counterparts in democracies demonstrated an opposing, pro-challenger bias. These patterns held across all of our tests, including coverage of government-inflicted civilian casualties and anti-regime protests (more coverage by democracies; less by non-democracies), and coverage of rebel-inflicted civilian casualties (more coverage by non-democracies; less by democracies). Though prior work has found some evidence of these sorts of biases, none has been able to undertake systematic testing of these propositions with similarly comprehensive data.

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36 Democratic coalition members in sample include Belgium, Bulgaria, Canada, Denmark, France, Great Britain, Italy, Netherlands, Romania, Spain, Turkey and United States. NATO members include Albania, Belgium, Bulgaria, Canada, Croatia, Czech Republic, Denmark, Estonia, France, Germany, Great Britain, Hungary, Italy, Latvia, Lithuania, Netherlands, Poland, Romania, Slovakia, Slovenia, Spain, Turkey and United States.

These findings are potentially important in helping improve our understanding of the framing war fought through the press that frequently accompanies a shooting war "on the ground." While media in democracies are in most cases independent from government influence, they have their own institutional biases – like newsworthiness criteria that emphasize novelty, conflict, proximity, and drama – that tend to result in conflict coverage favoring anti-regime forces, while the self-preservation motive of authoritarian governments, who in most cases influence or control their countries' media, favors coverage that underscores the legitimacy and inevitability of the status quo. In cases of civil wars with the potential to engender foreign intervention, the former can be quite consequential. To the extent the observed democratic pro-challenger bias results in systematically greater international support for intervening in civil conflicts, this could raise the pressure on leaders to do so, thereby potentially altering the outcomes of such conflicts. Conversely, non-democracies' pro-incumbent bias is clearly aimed at limiting the propensity of external powers to act against their authoritarian counterparts. Their ultimate goal presumably is to reduce the likelihood that they might later suffer a similar fate.

It is difficult to generalize from one civil war, as all wars are unique. However, the Libya case is a difficult test of our theory. Because it occurred at the height of the Arab Spring, intense international attention to the region essentially guaranteed that media coverage would be scrutinized and any systematic biases in coverage exposed. That we found strong evidence of reporting bias despite the watchful eye of the international community suggests that such biases are likely not limited to this case, and if anything, are stronger in less highly scrutinized contexts.

This study represents a first step in better understanding the nature and influence of reporting bias in international conflict. Still to be explored are the effects on reporting bias of different types of media ownership and variations in conflicts themselves. Do networks of media outlets converge in their coverage of civil conflict? Do different types of violence – e.g., selective vs. indiscriminate – engender qualitatively different responses from media? And do these differences matter in terms of influencing global public attitudes toward intervention? These are just a few of the topics we hope to investigate in future research. Ultimately, our goal is to better define the role of media – as the primary source of information about international events for the vast majority of citizens and leaders alike – in international conflict processes.

REFERENCES

Azar, Edward E. (1980). "The conflict and peace data bank (COPDAB) project." *Journal of Conflict Resolution* 24(1), 143-152.

Baum, Matthew A. and Tim Groeling. (2010a). *War Stories: The Causes and Consequences of Citizen Views of War*. Princeton: Princeton University Press.

Baum, Matthew A. and Tim Groeling. (2010b). "Reality Asserts Itself: Public Opinion on Iraq and the Elasticty of Reality." *International Organization* 64:3:443-479.

Beissinger, M. R. (2007). "Structure and example in modular political phenomena: The diffusion of Bulldozer/Rose/Orange/Tulip Revolutions." *Perspectives on Politics*, 5(2), 259.

Bennett, W. L., Lawrence, R. G., & Livingston, S. (2007). *When the press fails*. Chicago, IL: University of Chicago Press.

Boydstun, Amber E. (2013). *Making the News: Politics, the Media, and Agenda Setting*. Chicago, IL: University of Chicago Press.

Cappella, Joseph N., and Kathleen H. Jamieson. (1997). *Spiral of Cynicism: The Press and the Public Good*. New York: Oxford University Press.

Danzger, M. H. (1975). "Validating conflict data." *American Sociological Review*, 570-584.

Davenport, C., & Stam, A. (2006). "Rashomon goes to Rwanda: Alternative Accounts of Political Violence and Their Implications for Policy and Analysis." Unpublished manuscript.

Debs, A. (2007). "Divide-and-Rule and the Media." Unpublished manuscript.

Debs, Alexandre, and Hein E. Goemans. (2010). "Regime type, the fate of leaders, and war." *American Political Science Review* 104(3), 430-445.

Djankov, S., McLiesh, C., Nenova, T., & Shleifer, A. (2003). "Who owns the media?" *Journal of Law and Economics*, 46, 341–382.

Earl, Jennifer, Andrew Martin, John D. McCarthy, and Sarah A. Soule. (2004). "The use of newspaper data in the study of collective action." *Annual Review of Sociology* 30, 65-80.

Edmond, C. (2011). *Information manipulation, coordination, and regime change* (No. w17395). National Bureau of Economic Research.

Egorov, G., Guriev, S., & Sonin, K. (2009). "Why resource-poor dictators allow freer media: A theory and evidence from panel data." *American Political Science Review*, 103(4), 645.

Enikolopov, R., Petrova, M. & Zhuravskaya, E. (2011). "Media and political persuasion: Evidence from Russia." *The American Economic Review* 101 (7), 3253-3285.

Entman, R. M. (2004). *Projections of power*. Chicago, IL: University of Chicago Press.

Ferrari SLP, Cribari-Neto F (2004). "Beta Regression for Modeling Rates and Proportions." *Journal of Applied Statistics* 31 (7), 799–815.

Francisco, R. A. (1996). "Coercion and protest: An empirical test in two democratic states." *American Journal of Political Science*, 1179-1204.

Francisco, R. A. (2004). "After the massacre: Mobilization in the wake of harsh repression." *Mobilization: An International Quarterly*, 9(2), 107-126.

Galtung, Johan, and Mari Holmboe Ruge. (1965). "The structure of foreign news the presentation of the Congo, Cuba and Cyprus Crises in four Norwegian newspapers." *Journal of Peace Research* 2(1), 64-90.

Gamson, W. A., & Wolfsfeld, G. (1993). "Movements and media as interacting systems." *The Annals of the American Academy of Political and Social Science*, 114-125.

Gentzkow, M., & Shapiro, J. (2005). *Media bias and reputation* (No. w11664). National Bureau of Economic Research.

Gerner, Deborah J., Philip A. Schrodt, and Ömür Yilmaz. (2009) Conflict and Mediation Event Observations (CAMEO) Codebook. Available at http:// eventdata.psu.edu/data.dir/cameo.html.

Graber, Doris. (1997). *Mass media and American politics.* Washington, DC: CQ Press.

Groeling, T., & Baum, M. A. (2008). "Crossing the water's edge: Elite rhetoric, media coverage, and the rally-round-the-flag phenomenon." *Journal of Politics*, 70(4), 1065-85.

Hallin, D. C. (1989). *The uncensored war: The media and Vietnam.* Univ. of California Press.

Hallin, D. C., & Mancini, P. (2004). *Comparing media systems: Three models of media and politics.* Cambridge, England: Cambridge University Press.

Hafner-Burton, E., & Ron, J. (2011). "The Latin Bias: Regions, Human Rights, and the Western Media." Unpublished manuscript.

Iyengar, S., & Kinder, D. R. (1987). *News that matters.* Chicago, IL: University of Chicago Press.

Jaggers, K., & Gurr, T. R. (1995). "Tracking democracy's third wave with the Polity III data." *Journal of Peace Research*, 32(4), 469-482.

Kalyvas, S. N. (2004). "The urban bias in research on civil wars." *Security Studies*, 13(3), 160-190.

King, Gary, and Will Lowe. (2003). "An automated information extraction tool for international conflict data with performance as good as human coders: A rare events evaluation design." *International Organization* 57(3), 617-642.

King, G., Pan, J. and Roberts, M. (2012). "How Censorship in China Allows Government Criticism but Silences Collective Expression." *American Political Science Review* (In Press)

Kuran, T. (1989). "Sparks and prairie fires: A theory of unanticipated political revolution." *Public Choice*, 61(1), 41-74.

Landis, Stephen, Vito D'Orazio, Glenn Palmer, and Philip A. Schrodt. (2011) "Separating the Wheat from the Chaff: Application of Two-step Support Vector Machines to MID 4 Text Classification." Midwest Political Science Association, Chicago, 2011.

Livingston, S., & Bennett, W. L. (2003). "Gatekeeping, indexing, and live-event news: Is technology altering the construction of news?" *Political Communication*, 20, 363–380.

Lohmann, S. (1994). "The Dynamics of Informational Cascades: The Monday Demonstrations in Leipzig, East Germany, 1989-1991." *World Politics* 47(1): 42–101.

Lohmann, S. (2002). "Collective Action Cascades: An Informational Rationale for the Power in Numbers." *Journal of Economic Surveys* 14(5): 654–684.

Morton, L.P. and J. Warren. 1992. "Proximity: Localization vs. Distance in PR News Releases." *Journalism Quarterly* 69(4): 1023-1028.

Patterson, Thomas. (1996). "Bad News, Period." *PS: Political Science and Politics* 29 (1): 17–20.

Roeder, G. H. (1995). *The censored war: American visual experience during World War Two.* Yale University Press.

Romanyuk, G. (2011). "Agenda setting in offline and online media." Unpublished manuscript.

Rosengren, K.E. (1974). "International News: Methods, Data and Theory." *Journal of Peace Research* 11(2): 145-56.

Sabato, Larry. (1991). *Feeding Frenzy: Attack Journalism and American Politics.* New York: Free Press.

Schrodt, P., McCombs, M. E., & Shaw, D. L. (1972). "The agenda-setting function of mass media." *Public Opinion Quarterly*, 36, 176–187.

Schrodt, P. A., & Gerner, D. J. (1994). "Validity assessment of a machine-coded event data set for the Middle East, 1982-92." *American Journal of Political Science*, 825-854.

Schrodt, P. A., Simpson, E. M., & Gerner, D. J. (2001, June). "Monitoring conflict using automated coding of newswire reports: a comparison of five geographical regions." Presented at Conference 'Identifying Wars: Systematic Conflict Research and it's Utility in Conflict Resolution and Prevention', Uppsala.

Schrodt, Philip A. (2007). "Inductive event data scaling using item response theory." Presented at the 2007 Summer Meeting of the Society of Political Methodology.

Schrodt, Philip A. 2012. "Precedents, progress, and prospects in political event data." *International Interactions* 38(4), 546-569.

Schudson, M. (2003). *The sociology of news*. New York: Norton.

Shoemaker, P.J. and S.D. Reese. (1996). *Mediating the Message: Theories of Influences on Mass Media Content*. White Plains, NY: Longman.

Sigal, L. (1986). "Sources make the news." In R. K. Manoff & M. Schudson (Eds.), *Reading the news (*pp. 9–37). New York, NY: Pantheon.

Snyder, D., & Kelly, W. R. (1977). "Conflict intensity, media sensitivity and the validity of newspaper data." *American Sociological Review*, 105-123.

Stein, Elizabeth. (2013). "The Unraveling of Support for Authoritarianism: The Dynamic Relationship of Media, Elites and Public Opinion in Brazil, 1972-1982," *International Journal of Press/Politics* 18(1): 85-107.

Stein, Elizabeth. (2007). "Mainstream Newspaper Coverage: A Barometer of Government Tolerance for Anti-Regime Expression in Authoritarian Brazil." Joan Shorenstein Center on the Press, Politics and Public Policy Research Paper Series, #R-3.

Weyland, K. (2009). "The diffusion of revolution: '1848' in Europe and Latin America." *International Organization*, 63(3), 391-423.

Whitten-Woodring, J., & James, P. (2012). "Fourth Estate or Mouthpiece? A Formal Model of Media, Protest, and Government Repression." *Political Communication*, 29(2), 113-136.

Woolley, J. T. (2000). "Using media-based data in studies of politics." *American Journal of Political Science*, 156-173.

Zuckerman, Ethan. (2013). *Rewire: Digital Cosmopolitans in the Age of Connection*. New York: W.W. Norton & Company.

TABLES AND FIGURES

Figure 1. Theoretical predictions.

Regime type

Democracy   **Non-Democracy**

State control over media: low   high

Dominant preferences: media firms
(maximize readership)   state
(preserve political power)

Bias: change   status quo

Prediction:
more coverage of events that
- support challenger legitimacy
- undermine incumbent legitimacy
(e.g. non-violent protests, government-
induced civilian casualties)

more coverage of events that
- undermine challenger legitimacy
- support incumbent legitimacy
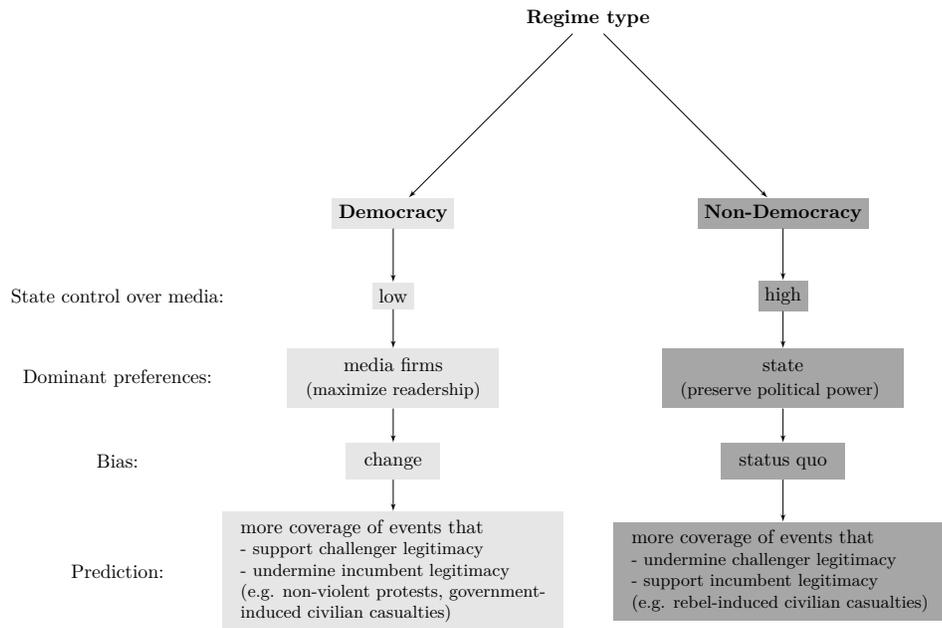(e.g. rebel-induced civilian casualties)
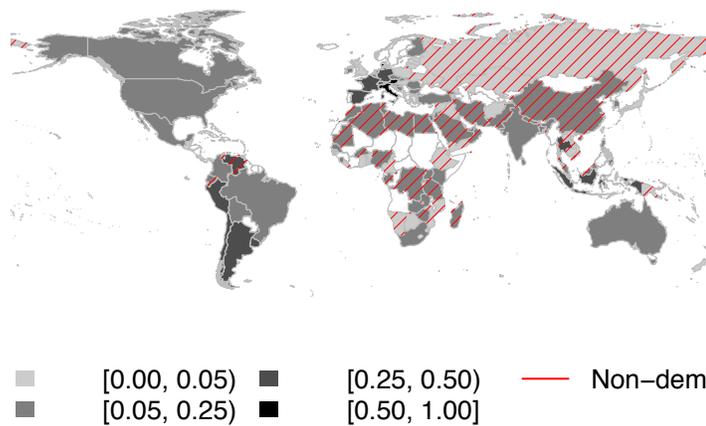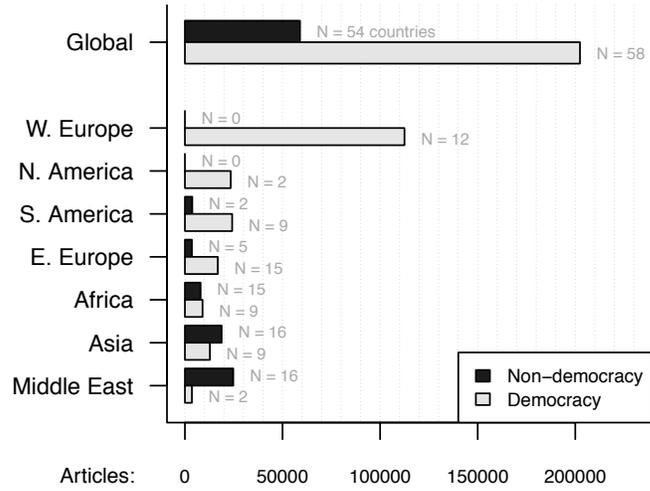
Figure 2. Libya news coverage data. Frequency of newspaper reports on Libyan crisis. Shadings correspond to proportion of newspaper-days with at least one article published.

[0.00, 0.05)   [0.25, 0.50)   —— Non–dem
[0.05, 0.25)   [0.50, 1.00]

Figure 3. Number of Libya newspaper articles, by regime type and region. Numbers next to bars represent number of countries in each group.

Figure 4. Libyan Civil War violence and news coverage. Gray vertical bars represent daily event counts of civil war violence. Orange diamonds, black triangles and green asterisks indicate, respectively, whether a non-violent protest, rebel killings of civilians or government killings of civilians occurred on day t. Blue solid and red dotted lines represent proportions of newspapers running a story on Libya on day t in democracies and non-democracies, respectively.
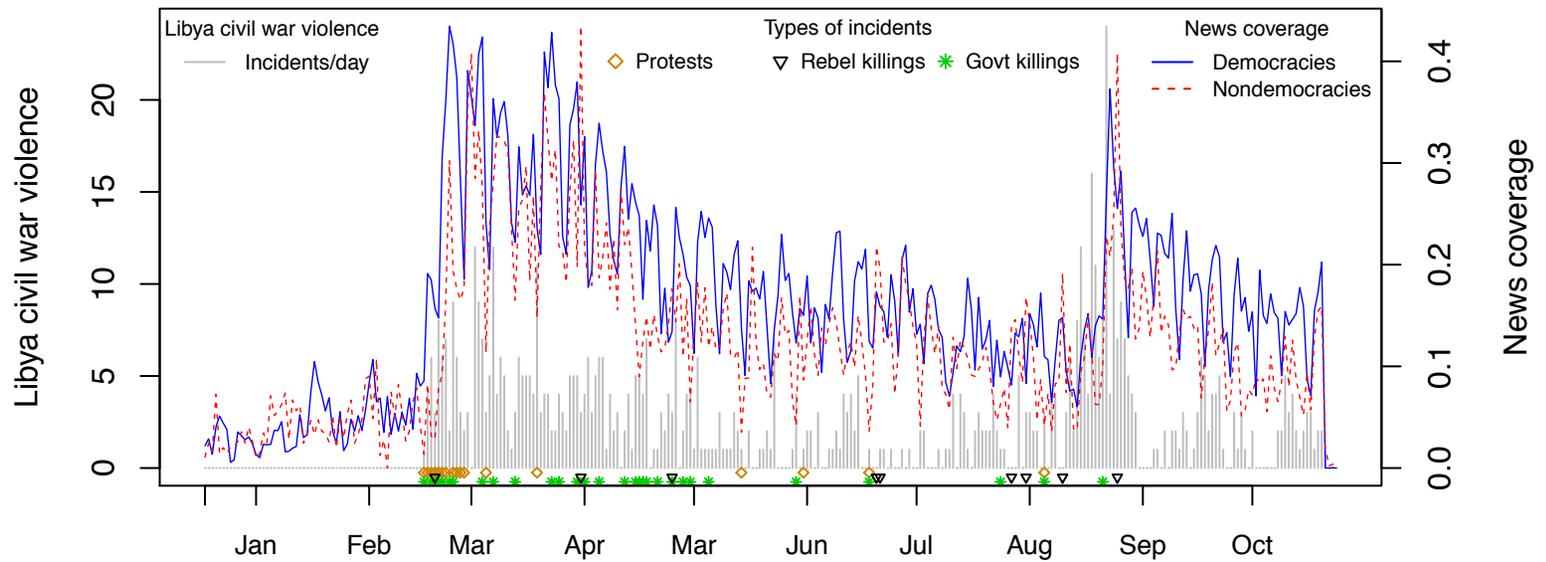
Figure 5. Percent change in probability of Libya coverage. Quantities reported have the following interpretation. How much more/less likely is the publication of an article about Libya on day *t*, if the number of conflict events **z** on day *t-1* were increased from the 1st to the 99th percentile. Actual values associated with this counterfactual are provided as "CF: [1st percentile] to [99th percentile]." White vertical stripes are point estimates. Grey bars are 95% confidence intervals.

(a) Country-day.   (b) Newspaper-day.
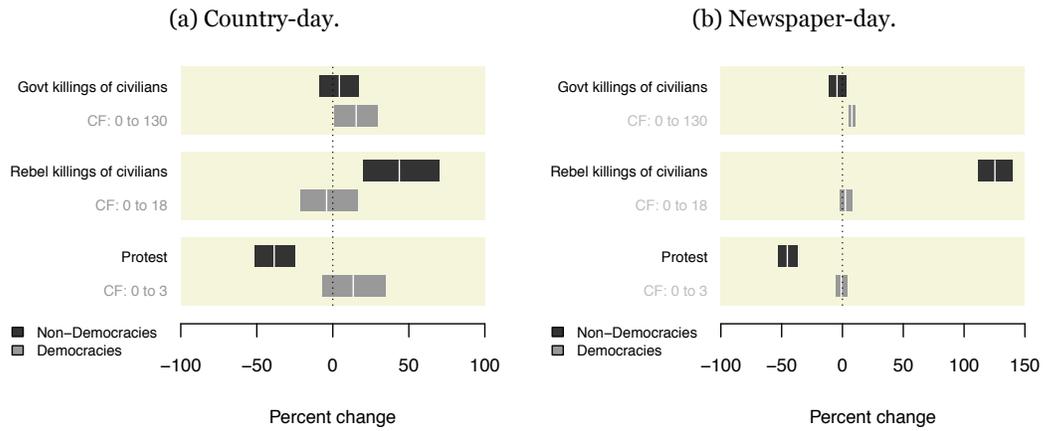
Table 1. Regression output for country-level data. Beta regression. Dependent variable is Coverage$_j$ (country's proportion of newspaper-days with Libya coverage after conflict event).

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Coverage after protests		*Coverage after civilian victimization by rebels*		*Coverage after civilian victimization by govt.*	
(Intercept)	-0.862 (0.348)*	-0.747 (0.343)*	-0.094 (0.424)	-0.083 (0.428)	-0.728 (0.382)'	-0.711 (0.378)'
Democracy	0.239 (0.093)*		-0.123 (0.112)		0.14 (0.105)	
POLITY2 score		0.021 (0.007)**		-0.008 (0.01)		0.015 (0.008)'
Public ownership	-0.343 (0.176)'	-0.312 (0.181)'	-0.201 (0.248)	-0.236 (0.268)	-0.269 (0.191)	-0.233 (0.197)
Distance from Libya	-8e-06 (1e-05)	-1e-05 (1e-05)	-1.1e-05 (1.2e-05)	-1.1e-05 (1.2e-05)	1e-06 (1.2e-05)	-1e-06 (1.2e-05)
Conflict years since 1945	0.002 (0.003)	0.002 (0.003)	-0.002 (0.004)	-0.001 (0.004)	0.002 (0.004)	0.003 (0.004)
Years secondary school	0.004 (0.048)	-0.007 (0.048)	-0.05 (0.056)	-0.049 (0.057)	0.002 (0.053)	0.005 (0.053)
Percent w/ internet	0.006 (0.002)**	0.006 (0.002)***	0.004 (0.002)'	0.003 (0.002)	0.005 (0.002)**	0.005 (0.002)**
Number of newspapers	-0.003 (0.001)*	-0.004 (0.001)**	-0.002 (0.001)	-0.002 (0.002)	-0.003 (0.002)'	-0.003 (0.002)*
φ	6.639 (0.97)***	6.827 (1.0002)***	4.886 (0.698)***	4.834 (0.696)***	4.623 (0.632)***	4.79 (0.66)***
N	98	97	95	93	105	103
AIC	-173.45	-169.67	-110.76	-105.11	-130.51	-126.16

Significance levels: 'p<.1, *p<.05, **p<.01, ***p<.001

Table 2. Regression output for country-day panel data. Mixed effects logit specification. Dependent variable is Publish$_{jt}$ (publication of article on Libya).

Variable	Model 7	Model 8	Model 9	Model 10
(Intercept)	-1.697	-1.957	-1.745	-2.034
	(0.129)***	(1.069)'	(0.138)***	(1.347)
Publish (t-1)	2.485	1.639	2.449	1.212
	(0.029)***	(0.033)***	(0.031)***	(0.037)***
Democracy	-0.187	-0.508	-0.197	-0.571
	(0.042)***	(0.307)'	(0.044)***	(0.387)
Protest	-0.185	-0.23	-0.185	-0.271
	(0.042)***	(0.043)***	(0.076)*	(0.112)*
Democracy*Protest	0.235	0.335	0.237	0.4
	(0.056)***	(0.06)***	(0.056)***	(0.062)***
Civil war violence	0.071	0.108	0.084	0.145
	(0.007)***	(0.008)***	(0.014)***	(0.021)***
Democracy*violence	0.004	0.014	0.001	0.007
	(0.01)	(0.011)	(0.01)	(0.011)
Civilian casualties	0.027	0.031	0.029	0.036
(by R)	(0.007)***	(0.007)***	(0.013)*	(0.02)'
Democracy*Civilian	-0.03	-0.029	-0.031	-0.031
(R)	(0.009)**	(0.01)**	(0.009)**	(0.01)**
Civilian casualties	0.0004	5.5e-05	0.0003	-0.0003
(by G)	(0.001)	(0.001)	(0.001)	(0.002)
Democracy*Civilian	0.001	0.002	0.001	0.002
(R)	(0.001)	(0.001)'	(0.001)	(0.001)*
Public ownership	-0.258	-0.671	-0.265	-0.766
	(0.075)**	(0.606)	(0.077)**	(0.76)
Distance from Libya	-4.4e-05	-5e-05	-5e-05	-6.4e-05
	(4e-06)***	(3.3e-05)	(4e-06)***	(4.2e-05)
Conflict years	0.006	0.009	0.006	0.011
since 1945	(0.001)***	(0.01)	(0.001)***	(0.012)
Years secondary	-0.062	-0.023	-0.071	-0.035
school	(0.017)***	(0.147)	(0.018)***	(0.185)
Percent w/ internet	0.012	0.021	0.013	0.026
	(0.001)***	(0.006)***	(0.001)***	(0.007)***
Number of newspapers	0.027	0.023	0.031	0.029
	(0.001)***	(0.005)***	(0.001)***	(0.006)***
Time	3.5e-05	0.0001		
	(0.0002)	(0.0002)		
Var(u$_j$)		1.622		2.592
Var(u$_t$)			0.382	0.992
N	33170	33170	33170	33170
AIC	30435.31	26945.53	29466.49	24769.94

Significance levels: 'p<.1, *p<.05, **p<.01, ***p<.001

Table 3. Regression output for newspaper-day panel data. Mixed effects logit specification. Dependent variable is Publish$_{ijt}$ (publication of article on Libya).

Variable	Model 11	Model 12	Model 13	Model 14
(Intercept)	-1.856	-2.159	-2.123	-2.624
	(0.04)***	(0.653)**	(0.065)***	(0.708)***
W*Publish (t-1)	2.854	2.709	2.536	1.694
	(0.016)***	(0.026)***	(0.017)***	(0.028)***
Democracy	0.651	1.347	0.684	1.55
	(0.017)***	(0.209)***	(0.018)***	(0.225)***
Protest	-0.205	-0.275	-0.198	-0.299
	(0.025)***	(0.028)***	(0.078)*	(0.112)**
Democracy*Protest	0.2	0.268	0.225	0.354
	(0.026)***	(0.029)***	(0.027)***	(0.033)***
Civil war violence	0.069	0.102	0.104	0.158
	(0.003)***	(0.003)***	(0.014)***	(0.021)***
Democracy*violence	0.009	0.028	0.011	0.034
	(0.003)**	(0.004)***	(0.004)**	(0.005)***
Civilian casualties (by R)	0.05	0.078	0.057	0.092
	(0.002)***	(0.003)***	(0.013)***	(0.019)***
Democracy*Civilian (by R)	-0.049	-0.074	-0.048	-0.078
	(0.003)***	(0.003)***	(0.003)***	(0.003)***
Civilian casualties (by G)	-0.0004	-0.0008	-0.0006	-0.0011
	(0.0003)	(0.0004)*	(0.0011)	(0.0017)
Democracy*Civilian (by G)	0.001	0.002	0.001	0.002
	(0.0003)**	(0.0004)***	(0.0003)***	(0.0004)***
Public ownership	0.029	0.255	0.046	0.292
	(0.021)	(0.297)	(0.021)*	(0.32)
Distance from Libya	-6e-05	-9e-05	-6e-05	-1e-04
	(1e-06)***	(1.7e-05)***	(1e-06)***	(1.8e-05)***
Conflict years since 1945	-0.024	-0.066	-0.026	-0.072
	(3e-04)***	(0.004)***	(3e-04)***	(0.005)***
Years secondary school	-0.007	-0.061	-0.006	-0.073
	(0.005)	(0.088)	(0.005)	(0.095)
Percent w/ internet	-0.01	-0.034	-0.01	-0.036
	(0.0002)***	(0.003)***	(0.0002)***	(0.004)***
Time	-0.0004	-0.0008		
	(5e-05)***	(6e-05)***		
Var(u$_j$)		8.495		9.954
Var(u$_t$)			0.508	1.102
N	682930	682930	682930	682930
AIC	370460.11	244640.54	355353.33	218701.92

Significance levels: 'p<.1, *p<.05, **p<.01, ***p<.001