Media Ownership and News Coverage of International Conflict

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How do differences in ownership of media enterprises shape news coverage of international conflict? We examine this relationship using a new dataset of 591,532 articles on US-led multinational military operations in Libya, Iraq, Afghanistan and Kosovo, published by 2,505 newspapers in 116 countries. We find that ownership chains exert a homogenizing effect on the content of newspapers' coverage of foreign policy, resulting in coverage across co-owned papers that is more similar in scope (what they cover), focus (how much "hard" relative to "soft" news they offer), and diversity (the breadth of topics they include in their coverage of a given issue) relative to coverage across papers that are not co-owned. However, we also find that competitive market pressures can mitigate these homogenizing effects, and incentivize co-owned outlets to differentiate their coverage. Restrictions on press freedom have the opposite impact, increasing the similarity of coverage within ownership chains.

What determines the information the press reports about war? This question has long concerned political communication scholars (Hallin 1989, Entman 2004). Yet it is equally important to our understanding of international conflict. Prevailing international relations theories that take domestic politics into account (e.g., Fearon 1994, 1995, Lake and Rothschild 1996, Schultz 2001) rest on the proposition that the efficient flow of information – between political leaders and their domestic audiences, as well as between states involved in disputes – can mitigate the prevalence of war, either by raising the expected domestic political costs of war or by reducing the likelihood of information failure.[1] Yet models of domestic politics have long challenged the possibility of a perfectly informed world (Downs 1957: 213). Citizens face incentives to transfer the costs of procuring, analyzing and evaluating information to third parties, like the news media. Because journalists report only a small subset of potentially innumerable data points at any given time, the information citizens receive becomes inherently selective and biased (Lippmann 1922). The scope and content of media coverage may reflect corporate preferences, market incentives, the constraints of the political and economic environment, as well as the day-by-day unfolding of events. The resulting variation in

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[1] This proposition assumes that, independent of expected outcomes, the downside political costs to a leader of going to war and losing outweigh the potential upside benefits of doing so and winning (Baum 2004). Domestic audience cost theory (Fearon 1994, Schultz 2012) assumes that this calculation is more likely for democracies than for autocracies, though Weeks (2008) argues that a similar logic obtains for some authoritarian regimes.

news coverage mediates the credibility, transparency and availability of information in the public domain (Strömberg 2004, Gentzkow and Shapiro 2004, Gentzkow 2006).

We argue that media ownership drives the amount, depth and diversity of publicly-available information about international conflict. Media ownership has consolidated significantly in recent decades. In 1983, 50 companies controlled 90% of the US media market. By 2012, that number had fallen to 6 companies (Lutz 2012). A similar trend prevails globally (Winseck 2008). In Australia, two companies dominate the newspaper industry, while a single company controls nearly 45% of regional radio stations (Jolly 2007). In Spain, circa 2009, five companies control more than two thirds of newspaper circulation (Pereira 2015). In the United Kingdom, also circa 2009, three companies account for over 70% of paid newspaper circulation, and two companies control 98% of radio consumption. Four companies account for 77% of all minutes of news consumed in the UK (Ofcom 2010).

Media ownership matters because parent companies exert a homogenizing effect on the coverage of their media holdings, which can leave citizens with less frequent (DiMaggio 2009, Zaller 1999, Shinar 2003), less policy-oriented (Hamilton 2004), and less diverse (Jenkins 2004, Baker 2007) information to monitor or influence their leaders' activities, including in foreign policy. We investigate the impact of ownership on news reporting, using new article-level data on international media coverage of the 2011 NATO-led intervention in Libya, the 2003 US-led invasion of Iraq, the 2001 US-led operations in Afghanistan, and the 1999 NATO-led intervention in Kosovo. We endeavor to explain three outcomes: (1) *scope*, or daily decisions to publish a news story on the crisis, (2) *focus*, or the type of coverage the crisis receives – a "soft news" emphasis on human interest and personalities or a "hard news" focus on military operations, policy or geopolitical context, and (3) the *diversity* of topics included in news stories on the crisis.

We find that ownership structure profoundly affects the volume and content of news coverage. Newspapers owned by the same parent company feature news of similar scope, focus and diversity. They are more likely to publish articles on foreign crises if other newspapers within the same ownership chain have recently done so; more likely to emphasize hard news issues of military operations and policymaking if their co-owned counterparts have done so; and more likely to feature topically diverse content if others in their chain have done so. However, market forces can mitigate these homogenizing ownership effects: as diverse, hard news content grows more prevalent within a newspaper's media market, the influence of co-owned newspapers recedes. The relative strength of ownership and market effects depends on the nature of the political regime within which a newspaper operates: market pressures drive coverage to a greater extent in states with a free press, while co-ownership matters more in states lacking press freedom.

PRESS OWNERSHIP AND NEWS COVERAGE

Rational choice theories of international conflict typically hold that the prevalence of war depends on the transparency, reliability, and availability of information to actors involved in disputes (Fearon 1995, Lake and Rothschild 1996). The literature on domestic sources of foreign policy – and audience costs in particular (Fearon 1994, Schultz 2001) – emphasizes information credibility as helping to determine which inter-state disputes escalate to violence and which resolve peacefully. Despite the centrality of information to extant theories of war, international relations scholars have largely ignored the process of information dissemination within and between states. Most research assumes that information – and any credibility or transparency it conveys – passes efficiently from leaders' mouths or actions to the intended recipients. If so, the only remaining uncertainty – which underpins much of the formal conflict literature – concerns what information a leader transmits or withholds and whether or not the intended recipient views it as credible. Where such information passes through an intermediary with its own strategic incentives (Baum and Potter 2015), however, this assumption becomes problematic.

Citizens learn about their governments' activities primarily through mass media. Acquiring information is individually costly, and citizens face incentives to transfer these costs to someone else (Downs 1957). This "outsourcing" raises the questions of whether and how the media – the primary information intermediary between citizens and leaders – might influence state behavior. Existing research on this question (Van Belle 2000, Slantchev 2006, Choi and James 2007) mostly argues that a free press might facilitate peaceful conflict resolution, by raising the domestic political costs of war.[2] Yet such conclusions require considering whether and how media institutions vary in their coverage of foreign policy. Do all media report on the same events, and write roughly the same things about them? Or do they diverge in systematic ways, with potential consequences for public debate over foreign policy?

Previous research on media coverage of an array of topics ranging from politics (Iyengar 1991) to protest movements (Smith et al 2001) to public health (Higgins et al 2006) to black bear management in New York State (Siemer et al. 2007), to name only a few, has shown that differences in the framing of news can generate quite distinct public responses. In particular, hard news-oriented, thematically framed reporting, with an emphasis on public policy themes and an issue's broader political, or military context, tends to engender a sense of collective responsibility for a policy problem. This, in turn, raises the likelihood that consumers

[2]This argument assumes that citizens are more pacific than leaders (Kant 1795). In practice, of course, democratic citizens sometimes support going to war (e.g. Spanish-American War), and autocratic governments sometimes feel public pressure to forcefully respond to perceived provocations (e.g. 1999 US bombing of the Chinese Embassy in Belgrade [Mizokami 2017]). Literature on the "CNN Effect" (Mermin 1999, Gilboa 2005) further holds that shocking images of humanitarian suffering can cause the public to pressure leaders to militarily intervene. That said, empirical evidence for the CNN Effect is scant (Livingston and Eachus 1995), and some research (Baum and Potter 2015) suggests that hawkish citizens tend to be the exception rather than the rule.

will look to the government for a solution.

By contrast, the aforementioned research finds that soft news-oriented, episodically framed reporting, with an emphasis on the dramatic experiences, characteristics, trials, and tribulations of individuals or small groups – usually presented in starkly personalized fashion – tends to push consumers to attribute a problem's cause and solution to individuals or groups, rather than states.[3] While such coverage may expand the audience for news, it typically contains less substantive ideological, political, or policy information than more thematically-oriented hard news (Baum 2005), and typical individuals gain less political knowledge from consuming it (Prior 2003). Consequently, it is less effective at generating demand for a government or societal response (Iyengar 1991, Smith et al 2001, Higgins et al 2006, Siemer et al 2007). Hence, the framing of a problem – including a foreign policy problem – can influence whether the public supports government intervention to address it, and whether it looks favorably on the government's design and implementation of its foreign policy more broadly (Strömberg 2004; Gentzkow and Shapiro 2004; Gentzkow 2006).

A growing body of research indicates that this process can, under some circumstances, influence foreign policy decisions, typically by constraining leaders' perceived freedom of action (Baum and Potter 2015; Sobel 2001). By shaping public and elite opinion, the media play a key intervening role between leaders seeking to build or sustain support for their preferred policies and the citizens they need to persuade.

Our goal is to pull back a few steps in this causal story, and explain why and when certain media institutions choose to (a) cover a foreign policy crisis in the first place, (b) present the crisis story from a soft or hard news perspective, and (c) offer topically narrow or diverse coverage of a crisis.

Cross-national political science research on such questions is a rapidly developing field (Hallin and Mancini 2004, Iyengar et al. 2010, Baum and Potter 2015), but has until recently been limited by data constraints. Most existing explanations of media coverage reside at the level of national political and economic attributes, like party systems, wealth and education. This emphasis on cross-national differences leaves much subnational variation unexplained. Aggregate explanations describe the environment in which media organizations operate, and the systemic constraints they face. Yet two media organizations may not navigate the same environment in a uniform fashion, and similar environmental conditions could produce quite different types of news coverage.

[3]The literature frequently treats episodic framing as a characteristic of soft news, and thematic framing as a characteristic of hard news (Reinemann et a. 2012, Baum 2003, Patterson 2000). Zaller (2003) defines soft news as "information that is either personally useful or merely entertaining." Patterson (2000) describes soft news as lacking a public policy component, featuring sensationalized presentation, human interest themes, and dramatic subject matter. Consistent with past research (e.g., Reinemann et al. 2012), we treat the presence of a public policy component as indicative of hard news, and the presence of personality or human interest focus as indicative of soft news. Some soft news stories may, of course, include greater substantive information than some hard news stories. As Baum (2003) reports, soft news-oriented outlets offer substantial coverage of major political issues, notably foreign policy crises and military conflicts. Yet, they typically do so quite differently from traditional hard news outlets, disproportionately focusing on dramatic stories of individual heroism or villainy, survival against long odds (e.g., the experiences of POWs and their families), or other sensational events. They less frequently provide geopolitical context, or focus on the underlying political or policy issues.

Ownership structure and news content

All else equal, co-owned outlets are likely to make editorial choices similar to other outlets within the same media chain. One reason is economic: co-owned newspapers achieve economies of scale by drawing on a common pool of resources and syndication services, and may feature stories that cross-promote each other's work. Another reason is political: owners may select editors who share their policy preferences and ideology. Either pathway leads to increasingly homogeneous news coverage within ownership networks.

Past research (e.g., Bagdikian 2000) suggests that both editorial (Gilens and Hertzman, 2000, Snider and Page 2003a) and news content (Snider and Page 2003b, Bailard 2016) tend to follow the economic interests of media ownership. Increases in ownership concentration – that is, control of more outlets by fewer owners – further reduces diversity in content across a variety of media, in the United States (Baker 2007, Peterson and Berger 1996, Bielby and Bielby 2003, Bagdikian 2000, Jenkins 2004), in other established democracies, like New Zealand and Australia (Rosenberg 2008), and in the newer democracies of Eastern Europe (Perusko and Popovic 2008) and Indonesia (Haryanto 2011).

These homogenizing ownership effects are prevalent in news coverage of conflict. Past studies of the 2003 Iraq War, for instance, have shown that media outlets belonging to corporate conglomerates featured a narrower range of voices (Jenkins 2004, Hayes and Guardino 2013) than their non-conglomerate counterparts. On its face, this is unsurprising. Economists since Adam Smith have argued that competition begets diversity. For this reason, diversity is a "foundation principle in communications policy" (Napoli 1999: 7). A central goal of European Union regulatory policy on media consolidation is to preserve a diversity of voices and perspectives (Doyle 2002). In the United States, case law surrounding media regulation emphasizes the importance of maintaining "the widest possible dissemination of information from diverse and antagonistic sources" (Dizard, 1994, 74, 75; quoted in van Cuilenburg 2007: 30). Consolidation of media ownership directly threatens this ideal, by placing fewer owners in control of more outlets (Baker 2007).[4] Given the high likelihood of shared interests and goals across co-owned outlets, one can easily imagine a foreign crisis being covered from an increasingly narrow range of perspectives.

The implication of these arguments for newspapers within an ownership chain – especially the vast majority that do not share a common market – is straightforward.[5] Such outlets are likely to feature coverage that is more similar in scope, content, and diversity to their fellow co-owned newspapers than to

[4] As the FCC argued in rejecting cross-ownership of a local newspaper and broadcast station, "it is unrealistic to expect true diversity from...[cross-ownership]. The divergency of their viewpoints cannot be expected to be the same as if they were antagonistically run." Amendment of Rules Relating to Multiple Ownership of Standard, FM, and Television Stations, Second Report and Order, 59 F.C.C.2d 1046, 1079-80 (1975). Quoted in Baker (2007:15).

[5] In cases where two co-owned newspapers are located within the same media market, the ownership chain might maximize its audience reach, and hence its revenue, through a niche strategy, with each paper pursuing a distinct audience. However, empirical instances of co-owned papers within a single media market are exceptionally rare. In our data (see below) only one half of one percent of newspapers shared a common owner and were located within a common media market.

newspapers that do not share the same owner. Our baseline hypothesis follows:

H1: All else equal, the content of newspapers within the same ownership network is more similar in (a) scope, (b) focus, and (c) diversity, than is the content of newspapers across separate ownership networks.

a: Scope. All else equal, a newspaper is more likely to publish a news story on a foreign policy crisis if other newspapers in the same chain are publishing stories on the crisis.

b: Focus. All else equal, a newspaper is more likely to provide hard news coverage of a foreign policy crisis if other newspapers in the same chain are providing hard news coverage of the crisis.

c: Diversity. All else equal, a newspaper is more likely to cover a foreign policy crisis through a diverse set of frames if other newspapers in the same chain are covering it with a diverse set of frames.

Ownership structure and market competition

Ownership chains, of course, do not exist in a vacuum. Their media holdings compete for readers with outlets from other ownership chains, and this market competition also influences content (Zaller 1999, Hamilton 2004). Newspapers located in the same area often seek to reach the same audience, and these potential consumers have overlapping preferences and interests. Newspapers in the same market may therefore reach very similar decisions about the scope, focus, and diversity of news coverage their audience will consider salient. These decisions may be at odds with what their co-owned papers typically publish.

The pressures of meeting market demand – especially when individual outlets have limited resources, as is common with local newspapers – can produce incentives to maximize a story's reach through "pack journalism" (Kraus 2008). King et al 2017 (777) define pack journalism as "writing stories on the same subjects, piling on' immediately after a story is broken by one outlet, occasionally collaborating, and sometimes even co-authoring stories." This strategy can "help get stories out and ensure that they reach a wide variety of differentiated audiences" (King et al. 2017: 777).

Consequently, if local newspapers are collectively following a foreign crisis through pack journalism, but other co-owned papers in different local markets are not, a newspaper editor may reason that there is a mismatch between the kind of coverage the ownership chain supplies, and what local consumers want. Rather than mimic their chain partners, such newspapers may instead follow the lead of other outlets competing for the same audience. If softer news and less diverse coverage is "what sells" in their market, a newspaper may offer more such coverage than what their co-owned counterparts typically provide.

H2: Market competition moderates the homogenizing effect of co-ownership on the (a) scope, (b) focus, and (c) diversity of conflict news coverage.

a: Scope. As a co-owned newspaper's media market offers more coverage of a foreign policy crisis, the influence of crisis coverage in co-owned newspapers will decline.

b: Focus. As a co-owned newspaper's media market offers more hard news coverage of the crisis, the influence of hard news coverage in co-owned newspapers will decline.

c: Diversity. As a newspaper's media market offers more topically diverse coverage of the crisis, the influence of topic diversity in co-owned newspapers will decline.

Ownership structure and press freedom

All ownership chains and media markets are not alike. The kind of content they produce depends on the political context in which they function. While the invisible hand of the market may drive media coverage in democracies, research has shown that the heavy hand of the state plays a much larger role in autocracies (Baum and Zhukov 2015). Given that nearly all democracies have freedom of the press and nearly all autocracies do not (Baum and Potter 2015), we may expect stronger market effects on foreign policy coverage in free press states, but stronger ownership effects in the absence of a free press.

While the profit motive is not irrelevant for media enterprises within autocracies, the state's preferences heavily mediate these market incentives. As the volume of coverage of a foreign crisis within a newspaper's market increases, that newspaper may have an economic incentive to follow the logic of pack journalism and increase its own coverage of the crisis. Yet if the state does not prefer additional coverage, or if the state's preferences are unclear, a newspaper in a non-free press environment is likely to proceed with caution before significantly changing its coverage emphasis. For instance, media enterprises in autocratic China are generally able to cover news and politics as they see fit to maximize revenues, so long as they do not cross any unwritten but universally understood lines by covering topics that the central government deems off limits (Stockmann 2013).

Conversely, coverage of a foreign crisis in co-owned newspapers should exert a stronger effect in non-free press states. While media owners across all regime types influence coverage decisions in newspapers they own, this process is more pronounced in autocracies. In addition to direct state ownership of media, such regimes can appoint political supporters to head these chains, or pressure owners to keep their holdings in line through threats of expropriation. Sparks (2008, 56) cites one such example in Russia,

> Although private ownership of the media has grown in Russia in recent years, the range of owners of large-scale media politically independent of the Kremlin has... been reduced since the mid-1990s, and their degree of operational freedom has... shrunk since the beginning of that

> decade. The media in private hands are either dedicated to non-political entertainment or, if they continue to have a political dimension, are very closely linked to the Kremlin.

Of course, government preferences also influence news coverage in free press states, due to the media's dependence on government officials for authoritative policy information (Bennett 1990) and favorable regulatory policies (Gentzkow and Shapiro 2008, Herman 2002). For instance, Donald Trump's Presidential Administration has selectively denied access to White House press briefings to media outlets it deemed overly critical – such as *Politico*, *The New York Times*, *The Los Angeles Times*, *USA Today*, *The Guardian*, and *CNN* (Sink 2017, Guardian 2017). President Trump has also tweeted that "Network news has become so partisan, distorted and fake that [broadcast] licenses must be challenged and, if appropriate, revoked."

Despite these anecdotes, newspaper chains in free press states traditionally are more responsive to market incentives than government pressures (Dunaway 2008, Baum and Potter 2015). This pro-market bias is less compelling when an autocratic government is the controlling interest in a media chain or can otherwise intimidate its owners. It is simply easier for an autocratic, non-free-press state – with full control of the nation's regulatory policies and police apparatus – to influence what the press publishes within its borders.

While past studies (Baum and Zhukov 2015) have found that regime type is a significant determinant of scope – the decision to cover a story – we extend our investigation to the content and diversity of such coverage. Specifically, we expect stronger market effects in free press states (primarily democracies) and stronger ownership chain effects in non-free press states (primarily autocracies).

H3: Press freedom attenuates the effect of media ownership and increases the effect of market competition on (a) scope, (b) focus, and (c) diversity.

a: Scope. In determining whether or how much to cover a foreign policy crisis, newspapers in free press states will be more strongly influenced by local market incentives – and less influenced by coverage in co-owned newspapers – than their counterparts in non-free press states.

b: Focus. In determining how to cover a foreign policy crisis (hard vs. soft news emphasis), newspapers in free press states will be more strongly influenced by local market incentives – and less influenced by coverage in co-owned newspapers – than their counterparts in non-free press states.

c: Diversity. In determining how to frame a foreign policy crisis (high vs. low topic diversity), newspapers in free press states will be more strongly influenced by local market incentives – and less influenced by coverage in co-owned newspapers – than their counterparts in non-free press states.

News Coverage and Media Ownership Data

To test these propositions, we analyze new data on news coverage during four recent international crises: (1) the 2011 Libyan uprising and NATO-led intervention, (2) the 2003 US-led invasion of Iraq, (3) the 2001 US-led operations in Afghanistan, and (4) the 1999 NATO-led intervention in Kosovo. Beyond their historical significance as instances of major power war, these cases represent three distinct types of armed conflict: third-party interventions (Libya, Kosovo), a preventive war (Iraq), and a war of retaliation (Afghanistan). Their selection enables us to examine how patterns of news coverage vary across conflicts and over time. The data comprise a corpus of 591,532 international newspaper articles published in the weeks and months before and after the launch of military operations.[6] We confine our focus to newspapers due to their international prevalence as primary sources of information on political, economic and social events, and our ability to collect a consistent and representative data sample across the largest possible set of countries.

For each of 116 countries in our dataset (Figure 1), we conducted a census of all daily and weekly newspapers listed in the electronic databases Lexis-Nexis and ISI Emerging Markets. We identified 2,505 unique and active (i.e. in press at time of conflict) newspapers, excluding weekend supplements, inserts, evening editions and associated materials (full list in Appendix A and B).

[Figure 1 about here]

Ownership network and market data

To assess the influence of ownership and market pressures on news coverage, we identified each newspaper's parent company and the geographic location of its main office at the time of each conflict (1999, 2001, 2003, 2011).[7] Our sources include industry organization listings (e.g. Audit Bureau of Circulations), international news media guides (e.g. Mondo Times), financial databases (e.g. WorldScope), annual company reports and the websites of individual news organizations and their parent companies.[8] For each conflict, we updated the data to account for the entry and exit of newspapers, and occasional changes in ownership structure.[9] We defined a newspaper's media market as the first-order administrative unit (e.g. US state, Canadian province, Russian oblast) in which its head office is located.[10] We defined separate,

[6] The Libya corpus includes 197,864 articles published by 2,233 newspapers in 113 countries. The Iraq corpus includes 278,361 articles from 2,254 newspapers in 63 countries. The Afghanistan corpus includes 72,727 articles from 2,133 newspapers in 52 countries. The Kosovo corpus includes 42,580 articles from 1,776 newspapers in 33 countries.

[7] For Kosovo, we look at newspapers' parent companies and geographic locations circa 1999. For Afghanistan, Iraq, and Libya, we collect such information for 2001, 2003, and 2011, respectively.

[8] Following La Porta et al. (1999) and Djankov et al. (2001), we identified legal entities (families, corporations, holding companies, political parties, governments) that own majority voting stakes in each newspaper.

[9] The Libya data include 843 owners and 455 markets; Iraq data include 833 owners and 385 markets; Afghanistan data include 802 owners and 360 markets; Kosovo data include 589 owners and 267 markets.

[10] Since media markets often cross administrative lines, provinces and states are an imprecise measure of the concept. However, absent subnational geospatial data on media market boundaries for all 116 countries in our dataset, administrative units provide an

national-level markets for newspapers with a national or expanded distribution. We used these ownership and location data to calculate network-lagged versions of coverage variables (discussed below), as well as other theoretically significant statistics (like the number of newspapers in each market).

Foreign policy news coverage data

Testing our hypotheses requires three measures of news coverage: whether a newspaper publishes an article about a crisis on a given day (scope), whether that article is hard news or soft news (focus), and the relative number of topics the article considers (diversity).

We measure the *scope* of coverage as a newspaper's daily decision to publish or not publish at least one article about a given conflict. We construct this variable by collecting a corpus of every unique article archived in Lexis-Nexis or ISI, containing the terms "Libya," "Iraq," "Afghanistan" or "Kosovo" (in English or the newspaper's source language) and published within a distinct time window for each conflict, spanning the weeks and months immediately prior to and following the beginning of US-led military operations.[11] The text corpus is multilingual, including articles in the native language and – where available – in English. Where the articles are in languages other than English, we use statistical machine translation (Google Translate API) to convert them to English.[12]

The corpus contains 197,864 articles on Libya, 278,361 on Iraq, 72,727 on Afghanistan and 42,580 on Kosovo. The average newspaper published 70 stories per conflict, including 89 on Libya, 123 on Iraq, 34 on Afghanistan and 24 on Kosovo. To test H1a, H2a and H3a, we created a dummy variable, Pub$_i t$, coded 1 if newspaper i published an article on each crisis on day t, and 0 otherwise.

We measure the *focus* of news coverage as the balance between hard and soft news in articles about conflict. Since many news stories contain elements of both, we use a relative rather than absolute metric. We construct this variable by using Wordscores, a supervised learning method that locates statements in a pre-determined issue space (Laver et al., 2003; Lowe, 2008). The algorithm uses information from texts whose positions on some policy dimension are assumed known ("training set") to learn about a second set of texts whose positions are unknown ("test set"). Specifically, it measures the relative rate at which a word

alternative that is both politically meaningful (e.g. defamation laws and media regulations often operate at the regional level) and directly comparable across countries.

[11] For Libya, the time window is 18 December 2010 to 20 October 2011. These dates mark, respectively, the day of first protests in Tunisia following Mohamed Bouazizi's self-immolation – generally accepted as the beginning of the Arab Spring – and the death of Muammar Gaddafi. For Iraq, the window is 20 December 2002 (three months prior to military operations) to 28 April 2003 (three weeks after the fall of Baghdad). For Afghanistan, it is 10 September 2001 (the day preceding the 9/11 terrorist attacks) to 27 October 2001 (three weeks following the launch of US air strikes). For Kosovo, our data range is 20 December 1998 (three months prior to the NATO intervention) to 24 April 1999 (oabout six weeks before the conclusion of NATO's bombing campaign).

[12] Although Google Translate uses statistical methods based on bilingual text corpora, rather than grammatical or rule-based algorithms, this approach is well-suited for the automated content analysis techniques employed in this paper and discussed below – which rely on natural language processing that discards grammar, stop words (e.g. "a", "the", "and") and word order, producing an unordered array of terms ("bag-of-words" model). To evaluate whether machine translation systematically biases our results, we replicate our analysis with English-only and non-English subsets of the data (Appendix E).

appears in each training text, and generates a score for each word. It then uses these scores to scale the documents in the test set, by taking a frequency-weighted average score of the words they contain.[13]

Each conflict's training set comprises 400-500 randomly-selected texts classified by a team of research assistants across four sub-dimensions of coverage focus, based on instructions and examples provided in a codebook (Appendix C). The dimensions include (a) human interest, which emphasizes human needs, concerns or achievements, (b) personality, which emphasizes personal stories, motivations or feelings of political, military or civilian individuals, (c) military, which focuses on the execution of foreign policy on the ground by armed forces, and (d) policy, which includes any discussion of foreign policy, outside of military operations. We treat these dimensions as non-mutually exclusive (i.e. coders could check all that apply), with human interest and personality indicative of a soft news focus, and military and policy indicative of hard news.[14] In addition, we asked coders to indicate whether each text was (a) ambiguous or otherwise presented a tough call for a given category, (b) a particularly clear, unambiguous example of a given category, or (c) incomprehensible, mistranslated, missing or written on a topic other than foreign policy. We implemented this procedure separately for articles on Libya, Iraq, Afghanistan and Kosovo.

We considered four measures of training set intercoder reliability: (a) percent agreement, (b) Fleiss' Kappa (c) Kendall's W, and (d) Krippendorff's Alpha, with bootstrapped confidence intervals.[15] Every test demonstrated positive and highly significant agreement between coders, meeting or exceeding conventionally acceptable levels of intercoder reliability (Appendix B).[16] For instance, coders assigned identical values to 72-94 percent of documents, with Alpha statistics ranging from .52 to .83 (.61 to .82 with "tough calls" removed), where 1 indicates perfect agreement and 0 indicates that all agreement is due to chance.

To train the Wordscores algorithm, we used a subsample of "ideal type" reference documents from the training set. This subset contained only those documents, which at least one of our six coders considered a clear example of a category, none considered a tough call or incomprehensible, and to which all coders assigned the same value (e.g. all human interest). Following this step, the algorithm assigned each article in

[13] Formally, let R be a set of reference texts in the training set (e.g. a pair of news articles: one with a human interest focus and one without). Each text in $r \in R$ takes a position on dimension d (coverage type), denoted A_{rd}. For example, $A_{rd} = 1$ if article r has a human interest focus, and 0 otherwise. Let F_{wr} be the relative frequency of word w in text r, as a proportion of total words in the text. Let $P_{wr} = F_{wr} / \sum_r (F_{wr})$ be the probability that we are reading text r, given the occurrence of word w. The Wordscore is the expected position of a text on dimension d, given that we are reading word w: $S_{wd} = \sum_r (P_{wr} A_{rd})$. This statistic is an average of a priori reference text scores A_{rd}, weighted by probabilities P_{wr}. Let K be a set of texts included in the test set. The scores calculated for the training set are used to estimate the position of any new text $k \in K$ on dimension d: $S_{kd} = \sum_w (P_{wk} A_{wd})$, where F_{wk} is the frequency of scored word w in document k and S_{wd} is that word's score in the original training set.

[14] We used the first 50 documents to train the human coders, comparing their classifications against each other and the authors' own "gold standard" classifications of the same 50 documents. On the basis of this evaluation set, we gave the coders feedback on their performance and any obvious irregularities or systematic sources of error evident from the sample. We held the remaining sets of 350-450 documents constant across coders to assess levels of agreement.

[15] The first measure is the proportion of documents in the training set, for which all coders gave the same value. The other three explicitly account for chance agreement among coders, and test the null hypothesis that agreements can be regarded as random.

[16] According to the general "rule of thumb" threshold of .67 for Krippendorf's Alpha, our results suggest moderate-to-high levels of inter-coder reliability. That said, there are no firm guidelines for what level is truly sufficient. As Krippendorff (2004) noted, "[E]xcept for perfect agreement, there are no magical numbers."

the corpus a score for the four dimensions of coverage focus. To reduce the dimensionality of our quantity of interest, we created a relative measure of hard-to-soft news from the subcategories:

$$\text{HardNews}_k = \text{Policy}_k + \text{Military}_k - \text{Human interest}_k - \text{Personality}_k(1) \quad (1)$$

where the variables on the right side are scores for each document k on the four dimensions of coverage focus. These individual scores range from 0 (e.g. no policy focus) to 1 (e.g. strong policy focus). The aggregated score ranges from -2 (i.e. all focus is on human interest and personality) to 2 (i.e. all focus is on policy and military topics). We use this relative HardNews_k score to test H1b, H2b and H3b.

[Figure 2 about here]

Figure 2 shows word clouds for articles from each conflict that received high (i.e. 99th percentile, in blue) and low (1st percentile, in red) relative hard news scores. The scale of each word reflects the relative frequency with which it appears in articles on each side of the spectrum. Consistent with our theoretical concept, articles with high hard news scores focused on military operations or broader foreign policy concerns. Terms like "aircraft," "attack" and "nato" featured prominently here, while the Iraq articles, for example, disproportionately mentioned weapons of mass destruction, inspections, and North Korea – which withdrew from the Non-Proliferation Treaty in early 2003, just as public debate about Iraq was intensifying. Articles with low hard news scores had a heavier human-interest focus on the plight of non-combatants (e.g. "children", "student," "refuge").

We measure the *diversity* of news coverage as the relative abundance of frames an article contains. Specifically, we used Shannon's H Information Entropy index to calculate the proportional abundance of 17 topics in each article.[17] These topics include (1) technical military decisions or actions on the ground, (2) personal military stories, (3) military casualties, (4) international institutions, (5) suffering among civilians on the ground, (6) humanitarian aid concerns or initiatives, (7) democracy or democratization, (8) weapons of mass destruction, (9) terrorism, (10) financial costs of cost of the foreign policy mission, (11) plans for reconstruction, (12) specific political leaders, (13) US allies, (14) other countries, (15) the Arab-Israeli peace process, (16) public opinion and (17) the media's coverage of the conflict.[18] We coded these topic variables using a more simple Boolean logic, matching terms contained in each document against a custom dictionary of keywords.[19] Higher values of Shannon's H for each article, Diversity_k, indicate a more equal spread

[17] Formally, the index is $Diversity_k = \sum_{Y=1}^{n_k} p_Y log_{n_k}(p_Y)$, where p_Y is the proportion of attention article k devotes to topic Y, and n_k is the total number of possible topics in document k.

[18] Topic list represents those frames that human coders identified as most prevalent in the subsamples of the data they hand coded for inter-coder reliability testing.

[19] Formally, given a list of m_Y dictionary terms $d(Y) = \{d(Y)_1, d(Y)_2, ..., d(Y)_{m_Y}\}$ defined for topic Y, and given K documents indexed by $k \in \{1, ..., K\}$, each topic variable Y_k takes a value of 1 if it contains any of the terms in $d(Y)$ and 0 otherwise.

of attention across these topics, and lower values indicate concentrated attention on relatively few topics. We use the Diversity$_k$ variable to test H1c, H2c and H3c.

Additional variables

In addition to our primary empirical focus on the day-to-day dynamics of news coverage, we consider several more static, structural features of newspapers and their market competitiveness, including average daily circulation, whether an outlet has national-level distribution, whether it is a news or trade publication, and the number of newspapers in its media market.

Past research (Zaller 1999, Hamilton 2004, Dunaway 2008) shows that the number of news outlets (print or electronic) within a given media market influences the volume of hard news, relative to soft news. As the number of competitors in a local market increases, the ratio of hard-to-soft news goes down (Zaller 1999, Hamilton 2004).[20] We expect market size to have the opposite effect for national newspapers. As with the "big three" US television networks during their oligopolistic heyday, national papers compete for the largest possible share of the overall national audience rather than for narrower audience niches. We account for this additional source of variation by exploring whether heightened market competition affects scope and diversity in a manner comparable to focus (see Appendix E for full results).

To account for macro-level sources of variation, we collected several country-level covariates commonly used in research on comparative media systems, like Internet access, number of parties and democracy scores. To account for coverage fatigue, we measured the number of days between the article's publication and the beginning of military operations. Table 1 provides summary statistics on all variables.

Table 1 about here]

EMPIRICAL ANALYSIS

We are interested in how newspaper ownership shapes news coverage of foreign policy crises. If H1 is valid, then newspapers co-owned by the same parent company should feature coverage similar in scope,

[20]This logic is particularly applicable to local media markets, where competitive pressures produced by each additional entrant tend be especially direct and intense. Local and regional newspapers typically compete against a high number of rival outlets for a small pool of customers, while national newspapers are fewer and less likely to face comparable pressures for survival. The average country has 18 local or regional newspapers, but only 3 newspapers with national distribution (e.g. *USA Today*) or expanded distribution beyond their home metropolitan areas (e.g. *The New York Times*). A typical local market has 5.6 newspapers, compared to 4 for national markets (difference significant at p=.002), while average daily circulation for a national paper is nearly 3.5 times higher than for a typical local paper (p<.0001).

focus and diversity. We estimate three sets of regression models to test H1a, H1b and H1c:

$$\begin{aligned}\text{Pub}_{ijmt} =& \text{logit}^{-1}\mathbf{W}_O\text{Pub}_{ijm,t-1}\lambda_1 + \mathbf{W}_M\text{Pub}_{ijm,t-1}\lambda_2 \\ &+ X_{im}\beta + X_{jm}\gamma + t\tau_1 + Post_t\tau_2 + t\cdot Post_t\tau_3 + \upsilon_m + u_j + \epsilon_{ijmt}) \end{aligned} \tag{2}$$

$$\begin{aligned}\text{HardNews}_{kijmt} =& \mathbf{W}_O\text{HardNews}_{ijm,t-1}\lambda_1 + \mathbf{W}_M\text{HardNews}_{ijm,t-1}\lambda_2 \\ &+ X_{im}\beta + X_{jm}\gamma + t\tau_1 + Post_t\tau_2 + t\cdot Post_t\tau_3 + \upsilon_m + u_j + \epsilon_{kijmt}) \end{aligned} \tag{3}$$

$$\begin{aligned}\text{Diversity}_{kijmt} =& \mathbf{W}_O\text{Diversity}_{ijm,t-1}\lambda_1 + \mathbf{W}_M\text{Diversity}_{ijm,t-1}\lambda_2 \\ &+ X_{im}\beta + X_{jm}\gamma + t\tau_1 + Post_t\tau_2 + t\cdot Post_t\tau_3 + \upsilon_m + u_j + \epsilon_{kijmt} \end{aligned} \tag{4}$$

where k indexes articles, i indexes newspapers, j indexes countries, t indexes days, and m indexes the case (i.e. Libya, Iraq, Afghanistan, Kosovo). Units of analysis are newspaper-days in the first model, and individual articles in the other two. Pub_{ijmt} is an indicator of whether newspaper i in country j publishes a story on crisis m on day t. HardNews_{kijmt} is a normally-distributed score for article k from newspaper i on day t, with lower values indicating a relatively greater soft news focus on human interest and personalities and higher scores indicating a greater hard news focus on military and policy issues. Diversity_{kijmt} is the Shannon's Entropy index for article k, with higher values indicating a greater diversity of frames.

To account for interdependence of coverage in newspapers owned by the same company and located in the same market, we include temporal network lags of dependent variables. $\mathbf{W}_O$ is a row-normalized connectivity matrix of the ownership network, and $\mathbf{W}_M$ is a similar network for co-location in the same media market. The autoregressive terms $\mathbf{W}\text{Pub}_{ijm,t-1}$, $\mathbf{W}\text{HardNews}_{ijm,t-1}$ and $\mathbf{W}\text{Diversity}_{ijm,t-1}$ represent, respectively, the proportion of co-owned newspapers that featured stories about the conflict, and average HardNews and Diversity scores of articles printed by those newspapers on the most recent day.

Also on the right-hand side are matrices of covariates, including both newspaper-level measures (X_{im}) like daily circulation and national vs. local/regional distribution, and country-level covariates (X_{jm}), including Internet access (percent of population), number of parties and Polity 2 democracy scores (-10 = full autocracy, 10 = full democracy). To adjust for coverage fatigue and other temporal dynamics, we include a linear time trend t, interacted with a post-intervention binary indicator (0 = pre-intervention, 1 = post-intervention). ϵ_{kijmt} are robust standard errors, clustered by newspaper.

Finally, we account for variation due to the unobserved idiosyncrasies of each conflict (υ_m), and time-invariant characteristics unique to each country (u_j). For example, we may expect more media attention for all countries and newspapers during the 2003 Iraq War than during the 1999 Kosovo War, or we may expect

US newspapers to devote more attention to all four cases than Australian newspapers.[21] If such unobserved characteristics are correlated with error terms, pooled estimation will produce biased estimates.

If H1 is valid, coefficient estimates should be positive for λ_1, indicating that papers within the same ownership network have similar coverage.

H2 holds that market competition reduces co-ownership homogeneity in scope, focus and diversity. To test H2a, H2b and H2c, we expand the models in (2-4) to include ownership-market interactions:

$$\text{add to (2): } + (\mathbf{W}_O \text{Pub}_{ijm,t-1} \cdot \mathbf{W}_M \text{Pub}_{ijm,t-1})\lambda_3 \tag{5}$$

$$\text{add to (3): } + (\mathbf{W}_O \text{HardNews}_{ijm,t-1} \cdot \mathbf{W}_M \text{HardNews}_{ijm,t-1})\lambda_3 \tag{6}$$

$$\text{add to (4): } + (\mathbf{W}_O \text{Diversity}_{ijm,t-1} \cdot \mathbf{W}_M \text{Diversity}_{ijm,t-1})\lambda_3 \tag{7}$$

A positive test of H2 would obtain if coefficient estimates are positive for λ_1 (papers within the same ownership network have similar coverage), but null or negative for $\lambda 1 + \lambda_3$ (market competition moderates the homogenizing ownership effect).

H3 claims that, in states with a free press, ownership effects are weaker but market effects are stronger. To test H3a, H3b and H3c, we add further extensions to the models:

$$\text{add to (2): } + \text{Free}_{jm}\phi_1 + (\text{Free}_{jm} \cdot \mathbf{W}_O \text{Pub}_{ijm,t-1})\phi_2 + (\text{Free}_{jm} \cdot \mathbf{W}_M \text{Pub}_{ijm,t-1})\phi_3 \tag{8}$$

$$\text{add to (3): } + \text{Free}_{jm}\phi_1 + (\text{Free}_{jm} \cdot \mathbf{W}_O \text{HardNews}_{ijm,t-1})\phi_2 + (\text{Free}_{jm} \cdot \mathbf{W}_M \text{HardNews}_{ijm,t-1})\phi_3 \tag{9}$$

$$\text{add to (4): } + \text{Free}_{jm}\phi_1 + (\text{Free}_{jm} \cdot \mathbf{W}_O \text{Diversity}_{ijm,t-1})\phi_2 + (\text{Free}_{jm} \cdot \mathbf{W}_M \text{Diversity}_{ijm,t-1})\phi_3 \tag{10}$$

where Free_{jm} is equal to 1 if country j had a "Partially Free" or "Free" press during conflict m, according to Freedom House.[22] If H3 is valid, we should see negative coefficient estimates for ϕ_2 (smaller ownership effect in free press states) and positive estimates for ϕ_3 (larger market effect in free states).

Results

Our hypotheses find strong support in the data. Table 2 reports coefficient estimates for nine models, one for each of our (sub-)hypotheses. Figure 3 summarizes the most theoretically relevant relationships[23].

[Table 2 about here]

[21] Conflict fixed effects also help us account for the Internet's role in reshaping news media over time, creating greater specialization and niche market opportunities.

[22] In Appendix E, we report sensitivity analyses with a more limited definition of free speech ("Free" only), as well as alternative measures from Reporters Without Borders. Results are substantively the same.

[23] The predictions in the left pane of Figure 3 are based on Models 1 and 2 from Table 2; the right pane uses Models 3 and 4. Predictions are based on m =Libya and j =United States.

[Figure 3 about here]

Co-owned papers publish similar stories at similar times, unless the market compels them to differentiate. All else equal, the scope of news coverage is quite consistent among co-owned newspapers (H1a). A newspaper is more likely to run a story on any of the four conflicts if a high proportion of co-owned newspapers also ran such a story the previous day. As the blue curve at the top-left of Figure 3 shows, if all other outlets owned by a newspaper's parent company are covering the Libyan crisis, an average newspaper has an 80.2 percent chance of covering it on the following day (95% CI: .79, .82). This figure has remained relatively constant over time, at 77 percent for Kosovo, 79 for Afghanistan and 76 for Iraq. Yet if no other co-owned newspaper ran a crisis story, the probability drops to 2.2 percent (95% CI: .020, .024) for Libya, 1.8 for Kosovo, 2 for Afghanistan and 1.7 for Iraq.

In addition to explaining whether media outlets say something at all about a foreign policy crisis, ownership also drives what they say. All else equal, coverage focus is generally shared across co-owned newspapers (H1b). Newspapers whose co-owned peers had above-average hard news scores (on the previous day) received average daily scores over 51.8 percent larger than those whose peers had below-average scores. This percent difference ranges from 26 percent for news coverage of Libya to 61 percent for Afghanistan. In the Libyan case, an increase from one standard deviation below to one standard deviation above the mean in co-owned hard news content yielded a corresponding rise from .33 (95% CI: .31, .35) to .40 (95% CI: .38, .43) in an average US newspaper's hard news score the following day.

Our models also confirm that newspapers are more likely to offer topically diverse news coverage if co-owned outlets did so on the previous day (H1c). For Libya, an increase in the average Shannon's Entropy index among co-owned newspapers from .8 to 2.6 (1st to 99th percentile) is associated with a 32 percent increase (95% CI: 27, 37) in a US newspaper's own index on the following day. This increase ranged from 23.3 percent for Kosovo (95% CI: 20, 27) to 41 percent for Iraq (95% CI: 35, 48).

As the second row in Figure 3 indicates, all these patterns see a reversal when other newspapers in a media market offer either (a) frequent coverage of a crisis, (b) high levels of hard news, or (c) highly diverse content. Consistent with H2, the interaction between coverage in co-owned newspapers and coverage in the local media market is strongly negative. If a large proportion of papers in the local market are also covering a conflict, coverage in co-owned papers has less of an effect, and – in the extreme – switches from positive to negative. A similar pattern unfolds when a large proportion of papers in the local market are featuring hard news. In the case of topic diversity, the influence of co-owned papers doesn't fully reverse, but becomes relatively flat. In sum, local market competition mediates the homogenizing ownership effect. Newspapers differentiate themselves from others in their chain – along all three dimensions of news content

– if local market conditions provide them with strong incentives to do so.

Coverage in co-owned newspapers has more influence in states without a free press, but coverage in the local market is more influential where press freedom exists. As the third row of Figure 3 shows, the slope of the darker curves (ownership effect without free press) is consistently higher than the lighter curves (free or partly free press). If we take two counterfactual scenarios – one in which the same country has a free press and another in which it does not – an increase in the proportion of co-owned newspapers covering a crisis from 0 to .25 would produce a 371 percent increase (95% CI: 363, 378) in the probability of coverage in the free press scenario, and 503 percent (95% CI: 477, 530) in the non-free press scenario (H3a). For coverage focus, a 1st-to-99th percentile increase in hard news among co-owned newspapers yields a 47 percent (95% CI: 41, 53) increase in hard news for newspapers in free press states, and 180 percent (95% CI: 97, 325) for non-free press states (H3b). For diversity, the corresponding increases are zero for free press, and 16 percent (95% CI: 12.5, 20) for non-free (H3c).

While press freedom weakens the co-ownership effect, it amplifies the influence of newspapers in the same market. Consistent with Baum and Zhukov (2015), market incentives drive the scope of coverage more in free press states. An increase in the proportion of same-market newspapers covering a crisis from 0 to .25 increases the probability of coverage by 157 percent within non-free press states (95% CI: 143, 172), and 233 percent (95% CI: 227, 239) in free press states.

The impact of press freedom is even more profound for *how* newspapers cover a conflict, beyond simply whether they cover it. A 1st-to-99th percentile increase in hard news among same-market newspapers yields no change in hard news within non-free press states, but a 49.7 percent increase (95% CI: 41, 59) where press freedom exists. The pattern for topic diversity is starker: the market effect is negative for states without a free press, but flat for states with free press. A possible explanation for this unexpectedly strong interaction is a desire among editors in autocracies to avoid unwanted attention and a potential crackdown, as they observe their counterparts' foreign policy coverage addressing an increasingly wide range of topics.

Two additional findings are worth noting. As we report in Appendix E, local and national newspapers respond differently to market competition. For local and regional papers, the size of a media market (i.e., the number of papers in the market) has a negative impact on scope, hard news focus and topical diversity, but for national newspapers these relationships are positive. Consistent with Zaller (1999), each new local/regional market entrant will tend to offer less, less diverse, and more soft news-oriented, foreign policy coverage. Zaller (1999) argues, and our data show that because journalists have a stronger preference for hard news than the general public, each new entrant will provide as much hard news as its market will tolerate. This tolerance declines as markets grow. Extending Zaller, we find comparable patterns for scope and diversity. Larger, national papers are immune to some of these pressures because they are competing for

readership in markets with higher barriers to entry, but a larger potential base of consumers. Competitive pressures in these environments favor oligopolistic practices over niche strategies, as national newspapers vie for the median citizen and produce more mainstream content to expand their market shares.

Robustness checks

It is important to consider several potential limitations of our analysis, and implications. These include concerns over the types of newspapers in our sample, our use of machine translation for non-English texts, and our measurement of key variables.

Trade publications The analyses reported above utilize a restricted sample of newspapers, including only traditional news publications (e.g. Le Monde) and excluding trade publications (e.g. Automotive News). Trade publications represent 3.2% (79) of newspapers in our sample, and generally have less to say on the topic of foreign policy, unless it affects their industry directly. However, such coverage does occur: we found 224 such articles in our data, by 37 different trade publications. Because trade outlets are already highly specialized, their editorial decisions may be relatively immune from some of the network pressures that would otherwise impact general audience outlets in the same chain. Dropping these publications entirely may therefore bias our coefficient estimates in favor of finding a positive ownership effect.

To ensure that the exclusion of trade publications is not driving our findings, we replicated our main analyses on an expanded sample of both news and trade publications, while directly controlling for publication type in all of our main model specifications. These additional results (see Appendix E) confirm that trade publications are significantly less likely to cover foreign policy. However, this adjustment does not affect estimates of ownership effects, which are consistent in sign, magnitude and significance.

Machine translation Because our text corpus is multilingual, processing these data entails choosing how best to handle non-English texts: preserve native languages or translate to English. We took the latter route due to both the costs of developing over a dozen distinct, language-specific training sets, dictionaries, parsers, classifiers and scaling algorithms, and the many more heterogeneities and biases such an approach would introduce at later stages of analysis. While machine translation (in our case, with Google Translate API) greatly simplifies the problem, machine-translated text is structurally different from native text, often contains errors, scrambled word order, and awkward phrases. Machine translation might therefore systematically bias our measurement of key variables, and our results – particularly for focus and diversity, which directly depend on the scaling or classification of translated text.

We addressed these potential problems in two ways. First, we included an "incomprehensible/mistranslated"

variable in the training set, allowing human coders to flag potentially problematic articles. We used these human-coded labels (6.9% of training articles) to predict similarly problematic articles in the larger corpus, and remove them prior to aggregation and analysis. We exclude these mistranslations from the 591,532 articles we consider here.

Second, we split the sample between English-only and non-English newspapers, and replicated our analyses of coverage focus and diversity on each subsample. These additional results, reported in Appendix E, show similar patterns to those in the pooled analysis. Because most of the English-language newspapers are from free-press countries, however, we were unable to test H3 using this approach.

Alternative measures of press freedom

Press freedom indices are not uncontroversial. The underlying methodologies behind them are rarely transparent, and organizations that produce them are frequent targets of criticism for alleged political bias. We relied on a dichotomized version of Freedom House's "Freedom of the Press" index, with a critical value of 60 ("Partially Free") determining a country's status.

To ensure that our test of H3 is not overly dependent on this choice, we replicated our analyses with an alternative threshold for the Freedom House measure (30, "Free"), as well as with two similar dichotomous variables calculated from Reporters Without Borders' World Press Freedom index, with thresholds of 25 ("Fairly Good") and 15 ("Good"). As Appendix E reports, these alternate measures affect the relative sizes and standard errors of the coefficients, but not their signs or substantive interpretation.

DISCUSSION

Using four recent international conflicts as examples, we set out to explain three types of variation in newspaper coverage of international conflict: daily decisions to publish a news story on a developing crisis, the type of coverage – hard vs. soft news – given to the story, and the diversity of topics included in that coverage. We hypothesized that much of this variation emerges from differences between and within media organizations and markets. All else equal, the scope, focus, and diversity of a newspaper's coverage of foreign policy should be more homogenous across newspapers located within ownership chains. This prediction is broadly consistent with the prevailing views among communication scholars (Baker 2007, Hamilton 2004, Dunaway 2008). Building on and extending this past work, we theorized that market incentives can mitigate the homogenizing effect of co-ownership, as can freedom of the press.

To test these predictions, we developed a unique global content analytic dataset on newspaper coverage of multinational conflict-related events in Libya, Iraq, Afghanistan and Kosovo. These data provide the

most fine-grained and expansive empirical evidence to date of news homogenization, and the conditions under which it thrives. We found that ownership chains have a strong homogenizing effect on the scope, focus, and diversity of coverage of foreign crises within co-owned newspapers. The effects of co-ownership, in turn, vary with market conditions. As a newspaper's media market provides greater scope, hard news focus, and diversity, co-owned newspapers have less of an effect on each other's coverage scope, focus and diversity. Market incentives also mattered relatively more in free press states, while co-ownership had a stronger impact in non-free press states.

The determinants of variation in news coverage of international conflict should be a critical concern for scholars and practitioners. In recent decades, governments – especially democracies with free press institutions – have deregulated media markets, owing to a belief that liberalization and competition maximize market growth and diversity, and benefit consumers via more innovation and lower prices. A clear consequence of global media deregulation has been a trend toward the consolidation of media enterprises.

The effects of this consolidation for news content are a matter of debate. Our findings are decidedly mixed for the pro-liberalization argument. The tendency of ownership chains to homogenize news coverage potentially substantiates the views of critics of market deregulation (e.g., Baker 2007, Herman and Chomsky 2002, Herman 2002). Competitive market pressures can generally mitigate this pattern, but in some markets (e.g. national newspapers), market competition can actually enhance, rather than reduce, the homogenizing effects of ownership consolidation. This could be good or bad, depending on the preferences of the national audience. In a market where typical consumers prefer soft over hard news – as is the case in many countries (Popkin 2006, Tanaguchi 2007) – this could mean a race toward ever-more soft news-oriented coverage of politics and foreign policy, at the expense of more substantive and in-depth content. Such a shift, in turn, may shape the policies political leaders consider and pursue (Popkin 2006).

Absent sufficient internal market competition to hold them in check, media chains' consolidation into ever-larger networks of outlets will make local news and editorial content less diverse. As our baseline results demonstrate, co-owned outlets tend to share editorial sensibilities. Yet, competitive market pressures can incentivize such outlets to differentiate their content from other papers within their ownership chain. At least in some circumstances, competition can mitigate the homogenizing effects of consolidation.

That said, competition can be a double-edged sword. In addition to our main findings on homogenization, the data reveal that local and regional markets with a high number of competing newspapers generally see foreign policy coverage with a softer news focus, and less topical diversity. This seeming paradox highlights the complexity facing regulators. Too much consolidation leads to homogenized coverage; too little leads to under-provision of hard-news-oriented and diverse foreign policy coverage. Navigating this path is a difficult undertaking, but our findings suggest that a competitive "sweet spot" likely exists, where local

or regional media markets are sufficiently competitive to induce differentiation within ownership chains, yet not so much as to drive news content too far "down market."

Our findings also speak to research on the domestic sources of foreign policy, in general, and the voluminous literature on domestic audience costs in particular. As noted, rationalist theories of war see information failure as a primary cause of interstate conflict (Fearon 1995, Lake and Rothschild 1996), and the accountability of leaders to their electorates as a means to peacefully resolve international disputes (Fearon 1994). Both perspectives emphasize information transparency as essential to mitigate international conflict. Yet they mostly ignore the primary transmitter of information from leaders to citizens: mass media. Recent research on the media's influence on states' conflict behavior (Baum and Zhukov 2015), shows that media ownership is a structural factor that can influence the nature and extent of information available to citizens, and the parameters of public debate about foreign policy. The downstream effect of this homogenization on national-level crisis behavior is outside the scope of this study. However, our findings are consistent with the view that states with media dominated by large ownership chains may have a more difficult time disseminating information about foreign policy to citizens and, as a consequence, may become less able to credibly communicate to adversaries during crises.

By utilizing recent advances in data availability, automated text analysis and network statistics, we offered the first quantitative analysis of foreign policy news coverage on a cross-national scale and a fine-grained level of disaggregation. This is a research area with exciting potential, and we foresee a proliferation of applied research on comparative media systems over the next decade that may uncover new insights and challenge existing views on the role of information in international conflict. This study offered an initial glimpse at how this might be done, and what some of these insights might be.

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FIGURES AND TABLES

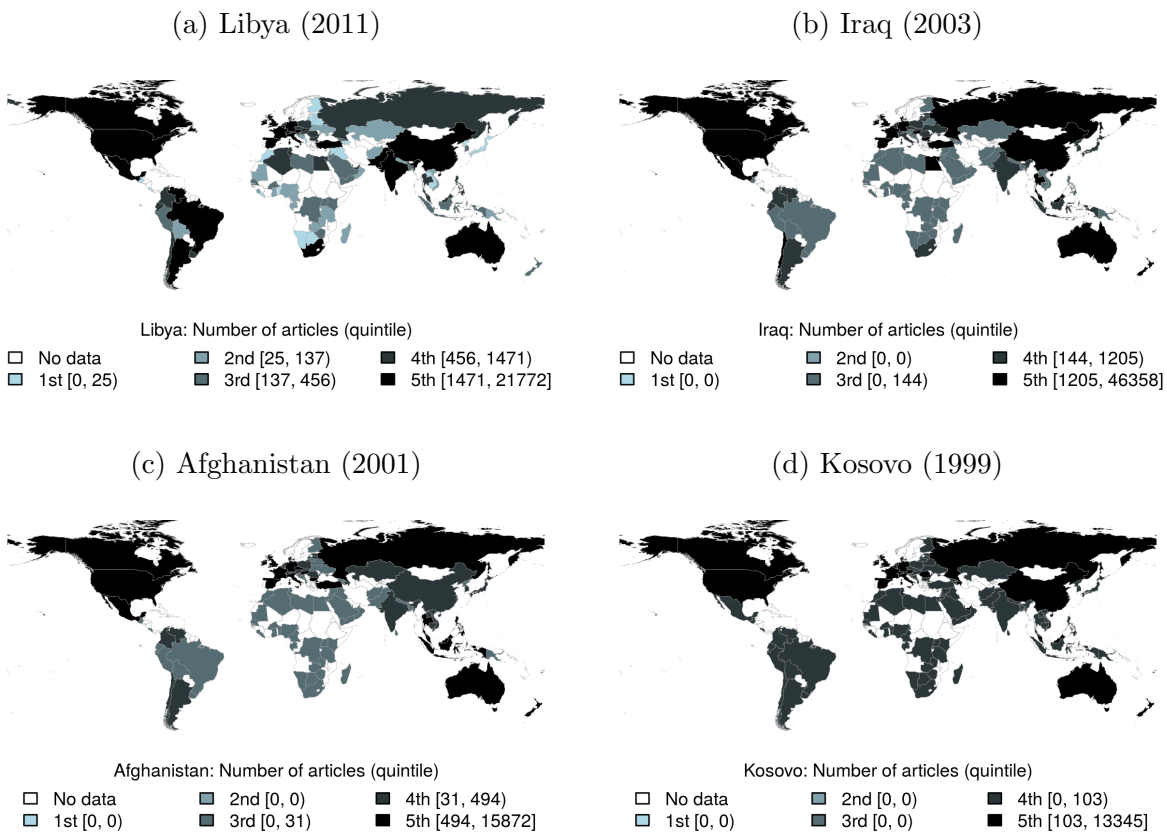


Figure 1: Geographic extent of news coverage data.

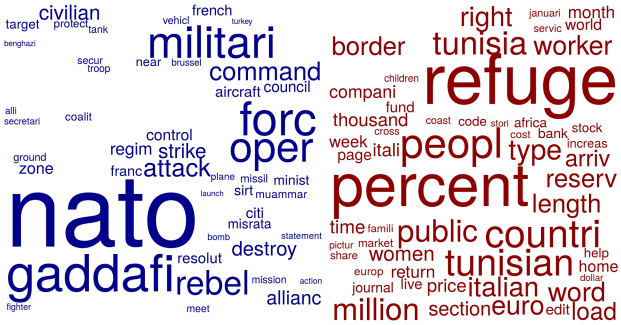
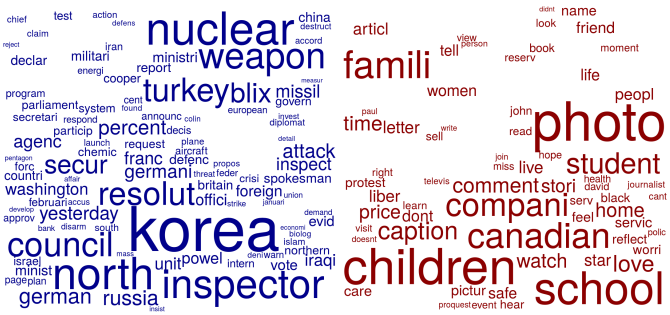
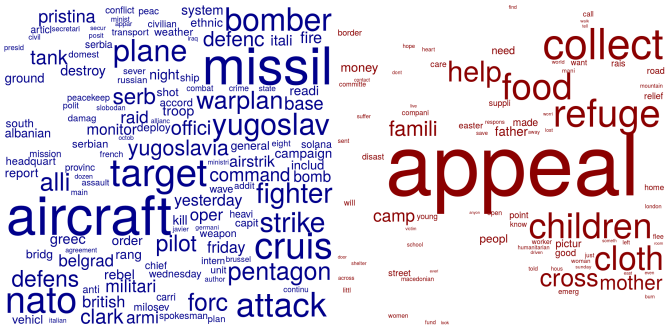
	Hard news (99th percentile)	**Soft news** (1st percentile)
Libya		
Iraq		
Afghanistan		
Kosovo		

Figure 2: High vs. low hard news scores.

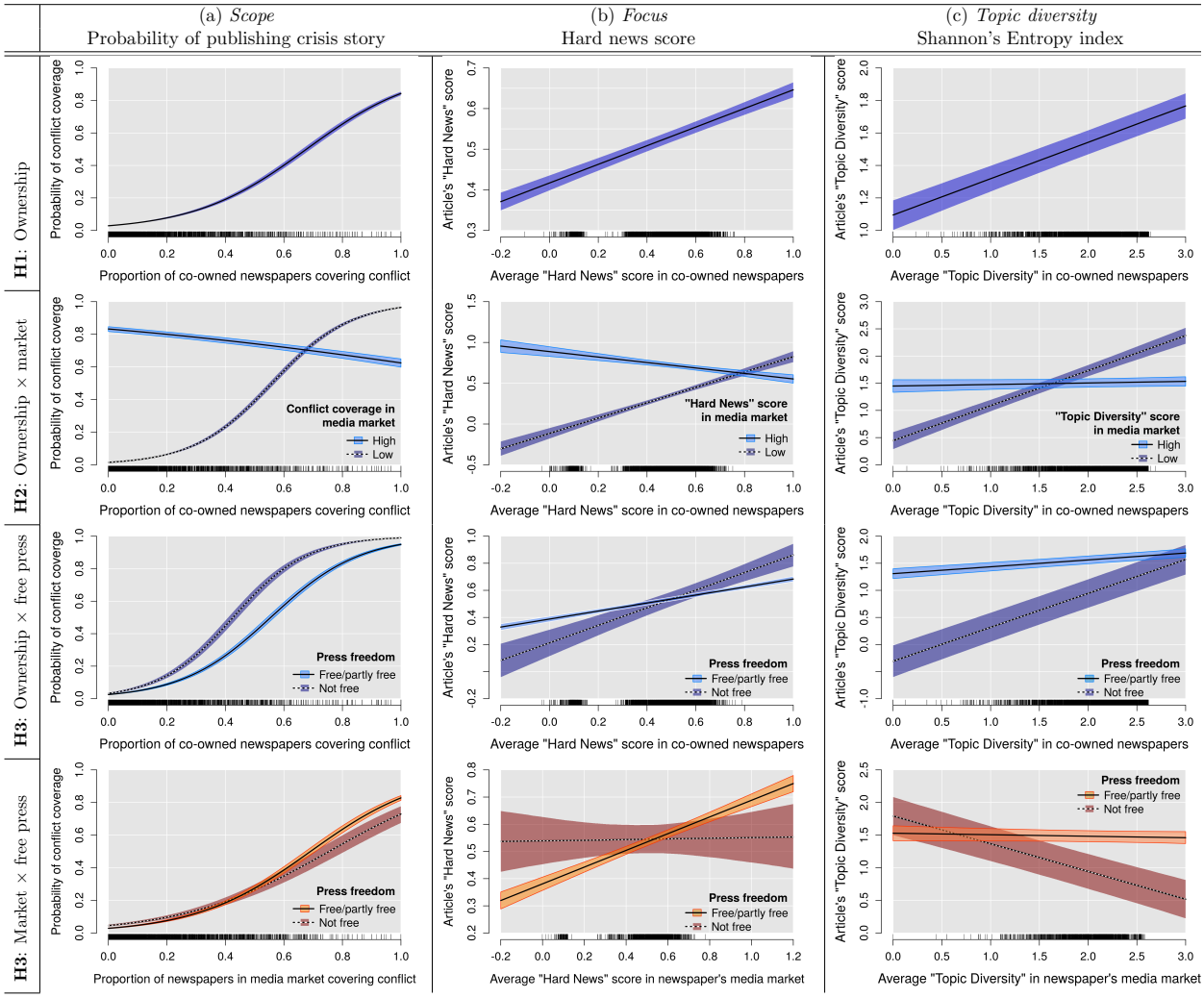


Figure 3: Determinants of crisis coverage. Predicted values shown with solid lines. 95% confidence intervals shown with grey shading or error bars. Predictions are based on Models 1-9 in Table 2, with j =United States, m = Libya.

Variable	Mean	Std. Dev.	Min.	Max.	N
Newspaper-day level					
News coverage	0.082	0.275	0	1	1,313,643
Coverage in co-owned papers (t-1)	0.082	0.159	0	1	1,305,247
Coverage in local market (t-1)	0.082	0.143	0	1	1,305,247
Article level					
Hard news score	0.438	0.187	-0.494	1.207	584,098
Hard news in co-owned papers (t-1)	0.465	0.152	-0.103	0.938	189,563
Hard news in local market (t-1)	0.511	0.126	-0.057	1.099	98,994
Topical diversity	1.472	0.721	0	2.708	591,532
Diversity in co-owned papers (t-1)	2.082	0.395	0	2.689	189,693
Diversity in local market (t-1)	1.99	0.319	0	2.674	99,676
Newspaper level					
National newspaper	0.145	0.352	0	1	1,313,643
Daily circulation (log)	3.469	1.441	-2.718	9.213	1,094,927
Trade publication	0.031	0.174	0	1	1,313,643
Size of local market	2.964	1.965	0	6.174	1,313,643
Country level					
Democracy score (Polity2)	13.929	3.582	1	21	1,302,544
Number of parties	10.412	20.408	0	249	1,311,466
Internet access	48.392	28.201	0	90.72	1,284,782
Partly free or free press (FH)	0.831	0.375	0	1	1,313,643
Free press (FH)	0.683	0.465	0	1	1,313,643
Partly free or free press (RSF)	0.749	0.434	0	1	1,313,643
Free press (RSF)	0.712	0.453	0	1	1,313,643

Table 1: Summary statistics

Model:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Dependent variable:		**Prob. of news coverage**			**Hard news score**			**Topic diversity**	
Hypothesis:	H1a	H2a	H3a	H1b	H2b	H3b	H1c	H2c	H3c
Daily news coverage dynamics									
Coverage in co-owned papers (t-1)	5.05***	7.49***	8.74***						
	(0.15)	(0.19)	(0.49)						
Coverage in local market (t-1)	2.69***	5.82***	4.78***						
	(0.20)	(0.23)	(0.58)						
Coverage in co-owned papers (t-1)		-8.61***	-8.53***						
* Coverage in local market (t-1)		(0.39)	(0.38)						
Hard news in co-owned papers (t-1)				0.23*	0.87***	1.20***			
				(0.17)	(0.63)	(0.87)			
Hard news in local market (t-1)				0.30***	0.86***	0.56**			
				(0.21)	(0.58)	(0.38)			
Hard news in co-owned papers (t-1)					-1.09***	-1.07***			
* Hard news in local market (t-1)					(-0.60)	(-0.59)			
Diversity in co-owned papers (t-1)							0.22**	0.65**	0.92***
							(0.11)	(0.32)	(0.46)
Diversity in local market (t-1)							-0.015	0.38*	-0.11
							(-0.0065)	(0.17)	(-0.048)
Diversity in co-owned papers (t-1)								-0.23*	-0.15*
* Diversity in local market (t-1)								(-0.37)	(-0.24)
Press freedom interactions									
Partly free or free press (FH)			0.0083			0.037			0.33
			(0.39)			(0.057)			(0.13)
Coverage in co-owned papers (t-1)			-1.40**						
* Partly free or free press (FH)			(0.50)						
Coverage in local market (t-1)			1.10′						
* Partly free or free press (FH)			(0.59)						
Hard news in co-owned papers (t-1)						-0.36*			
* Partly free or free press (FH)						(-0.38)			
Hard news in local market (t-1)						0.30*			
* Partly free or free press (FH)						(0.31)			
Diversity in co-owned papers (t-1)									-0.50***
* Partly free or free press (FH)									(-0.46)
Diversity in local market (t-1)									0.39***
* Partly free or free press (FH)									(0.35)
Daily circulation (log)			0.14′			0.0040			0.018
* Partly free or free press (FH)			(0.080)			(0.038)			(0.045)
National newspaper			-0.69***			-0.00079			-0.60**
* Partly free or free press (FH)			(0.20)			(-0.0023)			(-0.44)
Size of local market			-0.24**			-0.018			0.74**
* Partly free or free press (FH)			(0.080)			(-0.077)			(0.78)
Newspaper-level covariates									
Daily circulation (log)	0.28***	0.24***	0.10	0.0023	0.0018	-0.0020	0.038	0.039	0.022
	(0.032)	(0.032)	(0.074)	(0.016)	(0.012)	(-0.014)	(0.064)	(0.065)	(0.036)
National newspaper	-0.081	0.00055	0.53*	-0.033**	-0.037***	-0.034′	-0.19*	-0.18*	0.39′
	(0.21)	(0.21)	(0.23)	(-0.098)	(-0.11)	(-0.10)	(-0.14)	(-0.13)	(0.28)
Size of local market	-0.058	-0.018	0.21**	-0.0099*	-0.011*	0.0077	0.018	0.00090	-0.73**
	(0.042)	(0.043)	(0.069)	(-0.041)	(-0.044)	(0.032)	(0.018)	(0.00091)	(-0.74)
National newspaper * Size of local market	0.24*	0.11	0.14	0.023**	0.026***	0.024**	0.053	0.062	0.079
	(0.11)	(0.11)	(0.11)	(0.11)	(0.13)	(0.12)	(0.062)	(0.072)	(0.092)
Country-level covariates									
Democracy score (Polity2)	-0.0038	0.0044	-0.00021	-0.0025**	-0.0037***	-0.0044**	0.015	0.015′	0.012
	(0.024)	(0.025)	(0.025)	(-0.059)	(-0.088)	(-0.11)	(0.086)	(0.088)	(0.072)
Number of parties	0.0014	0.00049	0.0024	-0.00033	0.00025	0.00034	-0.011′	-0.010	-0.012′
	(0.0083)	(0.0082)	(0.0076)	(-0.018)	(0.014)	(0.019)	(-0.15)	(-0.14)	(-0.16)
Internet access	0.0038	0.00025	0.00057	0.00064′	0.00092**	0.00099**	0.00060	0.00040	0.000013
	(0.0039)	(0.0040)	(0.0040)	(0.095)	(0.14)	(0.15)	(0.022)	(0.015)	(0.00047)
Time effects									
Post-intervention	-0.11*	-0.37***	-0.37***	0.025*	0.022′	0.022′	-0.061	-0.0087	0.0015
	(0.050)	(0.050)	(0.050)	(0.072)	(0.062)	(0.063)	(-0.043)	(-0.0061)	(0.0011)
Time	0.0074***	0.0046***	0.0046***	0.000040	0.000017	0.000021	-0.0014**	-0.00096*	-0.00095*
	(0.00043)	(0.00045)	(0.00045)	(0.016)	(0.0068)	(0.0084)	(-0.14)	(-0.093)	(-0.092)
Post-intervention * Time	-0.0081***	-0.0055***	-0.0055***	-0.00014	-0.00011	-0.00011	0.0014**	0.00093*	0.00086′
	(0.00050)	(0.00051)	(0.00051)	(-0.075)	(-0.057)	(-0.060)	(0.18)	(0.12)	(0.11)
Country FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Conflict FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Newspaper-clustered SE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Unit of analysis	Newspaper -day	Newspaper -day	Newspaper -day	Article	Article	Article	Article	Article	Article
Observations	1,046,699	1,046,699	1,046,699	58,340	58,340	58,340	59,003	59,003	59,003
R-squared				0.499	0.500	0.500	0.139	0.140	0.144
ll	-205559	-199736	-199352	41488	41555	41571	-57031	-56969	-56862
df_m	121	108	114	53	55	59	53	54	59

Robust standard errors in parentheses. Standardized coefficients reported for Models 4-9.
*** p<0.001, ** p<0.01, * p<0.05, ′ p<0.1

Table 2: Coefficient estimates. Fixed effect models.