Fourth Estate or Mouthpiece? A Formal Model of Media, Protest, and Government Repression

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New media dramatically increase citizens' access to information and decrease governments' ability to control the flow of communication. Although human rights nongovernmental organizations have advocated that access to independent news media will improve government respect for human rights, recent empirical studies have shown this is not always the case. We posit that media independence and the presence or absence of democratic characteristics, in particular political competition, have substantial effects on government repression because these factors determine the degree to which the government is vulnerable to public pressures. The model developed here includes three equations that encompass the impact of interaction between and among the news media, citizens, and government. The first equation specifies the influences on the news media's decision whether or not to perform a "watchdog" role regarding government repression. The second equation represents public reaction to the news media's coverage of government repression (i.e., protest). Here access to news media via traditional and new media is an important factor. The third equation represents government repression. Solutions to the system of equations are derived for four scenarios (a) Democracy and media independence are both present, (b) democracy is present but media independence is absent, (c) democracy is absent (autocracy) and media independence is present, and (d) democracy is absent (autocracy) and media independence is absent. We then consider interesting properties of the anticipated behavior from the government, media, and general public through case illustrations for the Netherlands and Myanmar/Burma.

[Supplementary material is available for this article. Go to the publisher's online edition of Political Communication *for the following free supplemental resource: two additional case illustrations (Tanzania and Brazil).]*

Keywords   media, human rights, democracy, protest, repression

There are three estates in Parliament but in the Reporters' Gallery yonder there sits a Fourth Estate more important far than they all.
> —Edmund Burke (c.f. American Newspaper Foundation 2005, p. 3)

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Waves of pro-democracy uprisings cascaded across the Middle East and North Africa in 2011. In Tunisia, Egypt, Libya, and beyond, protesters used social media, especially Facebook and Twitter, and text messaging to organize and mobilize. Global media, in particular Al Jazeera, provided 24-hour coverage of the protests and government efforts to put down the dissent. In Egypt, citizens used mobile phones to record and send videos of protesters being mowed down by government vehicles and gunned down by snipers. These videos were posted on YouTube and retrieved and broadcast on Al Jazeera. Clearly new media played an important and facilitating role in this "Arab Spring," yet the use of media by dissidents is not new. Consider the role of the pamphleteers in the American Revolution. For hundreds of years, citizens and governments have used whatever types of media are available in the struggle for power and control. Indeed, the struggle to control media, particularly news media, is often a central battleground in the repression-protest nexus.

Sometimes referred to as the fourth estate, the idealized role of journalism is that it serves as a "watchdog," keeping government honest and watching out for the interests of people (Kovach & Rosenstiel, 2001). It follows then that independent news media should collectively keep the government responsive and responsible, especially in regards to how it treats citizens. Indeed, human rights nongovernmental organizations have argued that free news media will help to improve government respect for human rights (Amnesty International, 2006). This makes sense intuitively, yet empirical research shows that the effect of free media varies across regime types (Whitten-Woodring, 2009).

We develop in this article a formal model of the interaction between and among the news media, citizens, and government.[1] Specifically, we look at the role that the news media play in the repression-protest nexus. We posit that levels of institutionalized political competition and participation and media independence have substantial effects on repression because these factors determine the degree to which the government is vulnerable to public pressures.[2] Moreover, we stipulate that media independence facilitates mobilization of protest movements, which in turn may lead to further state coercion, especially in the absence of democratic institutions. The first section reviews existing literature on human rights, democracy, and media freedom. In the second section, we present our model. The empirical implications of this model are discussed in the third section, where we look at several cases including the Netherlands and Myanmar/Burma. In the concluding section, we consider the potential directions that our findings indicate for further research.

The Role of News Media in the Repression-Protest Nexus

While repression can take many forms, arguably the most atrocious are political imprisonment, torture, murder, and disappearance.[3] The right to be free from these violations is termed the human right to physical integrity (Cingranelli & Richards, 2010). We know from quantitative empirical studies of human rights that wealthy, highly developed democracies are less likely to violate physical integrity rights, whereas autocratic, densely populated states engaged in international or internal war are more likely to repress these rights (McCormick & Mitchell, 1997; Poe & Tate, 1994; Poe, Tate, & Keith, 1999).[4] While these studies have found that democracy is all-important in improving government respect for human rights, evidence suggests this is not a linear effect (Bueno de Mesquita, Downs, Smith, & Cherif, 2005; Davenport & Armstrong, 2004). Davenport and Armstrong (2004) identified a "threshold of domestic democratic peace," above which democracy improves government respect for human rights and below which democracy has no effect. Bueno de Mesquita et al. (2005) analyzed the effects of different dimensions of democracy and thresholds of democracy and concluded that only democracy at the highest level is associated with improved physical integrity rights. Moreover, accountability as indicated

by institutionalized political competition is "the critical feature that makes full-fledged democracies respect human rights; limited accountability generally retards improvement in human rights" (Bueno de Mesquita et al., 2005, p. 439).

While investigating the causes of what he terms the "domestic democratic peace," Davenport (2007, p. 52) identified two potential mechanisms through which democratic institutions might serve to limit state coercion: "voice," which refers to the role of electoral competition and political participation in forcing "leaders to concern themselves with constituents," and "veto," which concerns the potential checks other authorities might have on the leader's power. Davenport (2007) found voice to be more effective in reducing repression and that, overall, democratic institutions are more effective at reducing physical integrity violations than they are violations of civil liberties.

Consistent with the discovery of a step-level effect, our theorizing about media focuses on its special role in taking democracy to a higher level. We propose that independent news media collectively play a critical role in holding government accountable because citizens rely on the news media for information about government behavior; however, to make that happen, media must be at least somewhat free from government control and commercialization.[5] Indeed, Djankov, Nenova, McLiesh, and Shleifer (2003) found that countries with more government ownership of media had less media freedom, lower levels of political and economic freedoms for citizens, increased corruption, higher infant mortality, and lower life expectancy rates.[6] Yet, independently owned media commonly are subject to other forms of government influence, including licensing requirements, taxation, dependence on government advertisements and subsidies, and laws restricting reporting. Moreover, media owners often enjoy close ties to government officials, which make owners and the journalists who work for them more likely to self-censor and less likely to engage in watchdog reporting (Djankov et al., 2003). Furthermore, journalists depend on government officials for information; therefore, those who engage in critical reporting of government activity, especially repression, risk losing valuable news sources and access to information (Bennett, Lawrence, & Livingston, 2007; Schudson, 2003; Sigal, 1986). Thus, governments have both overt and covert means with which to control media and prevent watchdog reporting.

In addition to government control, media are often driven by commercial concerns that make them less likely to monitor government behavior. Investigative reporting is both expensive and time consuming. Thus, news organizations in commercialized environments that face constant pressure to improve the "bottom line" seldom have the resources to provide such coverage, and instead rely on public officials to provide information (Bennett, 2009). For example, in the United States, concentration of ownership and acquisition of news media by conglomerates have intensified the pressure on news organizations to maximize profits, often at the expense of providing coverage of public affairs and political information (Hamilton, 2004). In this scenario, news media that are relatively free from government control might fail to play a watchdog role because of commercial pressures. A case in point is the failure of most mainstream media in the United States to question the government's rationale for invading Iraq (Bennett et al., 2007).

Much of what we know about the relationship between news media and government comes from studying the United States, so we need to learn more about other countries, especially developing and non-democratic states. Nongovernmental organizations that monitor media freedom and attacks on journalists have found that media workers in states where media are only partly free from government control will sometimes report on government repression even if doing so puts them in great peril (Committee to Protect Journalists, 2009; Karlekar, 2010; Reporters Without Borders, 2010). In fact, countries like Sri Lanka, the Philippines, and Russia, where attacks on and murders of media workers are

more common, are "not necessarily those with the world's most repressive media envi-ronments, but are generally places where private or independent voices do exist and some journalists are willing to pursue dangerous stories" (Karlekar, 2010, p. 24). We suggest that these media environments are less commercialized and that journalists are more likely to be motivated by partisan and/or public service concerns. Similarly, it is important to con-sider the range of media within any given state and how the perspective of a particular news source might influence its coverage of contentious politics. In studying the Black Panther party movement, Davenport (2010, p. 173) found that media coverage was largely driven "by the political orientation of the source." We propose that activist-oriented media, typi-cally niche media, are less likely to be swayed by commercial pressures and more likely to criticize government.[7]

In considering how media independence is constrained by both government con-trol (including overt control such as government ownership and censorship and more covert control in the form of political pressures) and commercial pressures (including con-centration of ownership and the pressure to produce a profit), we conceptualize media independence as an interaction of the degree to which the media are free from government control and the extent to which the media are free from commercialization. Thus, media independence (I) is a function of the interaction between media freedom from government control (G) and media freedom from the pressures of commercialization (C), both of which have a minimum value of 0 and a maximum value of 1: $I = G \times C$.

With this conceptualization, media that are at least somewhat free from government control and are partisan or activist driven rather than profit driven are more independent than media free from government control and privately owned but profit driven. Similarly, publicly owned media that are editorially independent of government and mostly free from commercial pressures (like the BBC) are independent, whereas state-owned media that are state censored though free from commercial pressure (like China Central Television) are not. Collectively, media in a state like the United States, which enjoy maximum freedom from government control but minimum freedom from commercialization, could be less independent than media in a state like Sri Lanka (i.e., depending on exactly how the G and C values trade off), which have limited freedom from government control but a greater tendency to be partisan and/or activist oriented.

Given this conceptualization of media independence, we propose that in the repression-protest nexus depicted in Figure 1, the news media, if sufficiently independent, can play an intervening role by providing information about government violations of human rights. In addition to supplying information, the news media influence how citi-zens respond to repression. As illustrated in Figure 1, we see the news media as potentially facilitating social protest actions because leaders of such movements can use the news media to mobilize support to challenge the government. The placement of the arrows in Figure 1 reflects temporal sequencing. In the first case the media act as watchdogs *after* the government has repressed and *before* the people react, but in the second case the media facilitate mobilization *while* the people decide how to react.

One of the puzzles in the study of contentious politics is why citizens sometimes protest in response to increased repression when that would seem to raise the costs of protesting. Indeed, findings regarding the effect of repression are mixed (Carey, 2006). In looking at the Iranian Revolution, Rasler (1996, p. 133) found that repression had a "short-term negative effect and a long-term positive effect on overall levels of protest." Similarly, Francisco (1995) found that extreme repression would in the long run fuel oppositional activity. Lichbach (1987) developed a rational actor model and proposed that dissident groups will adapt their activities depending on government repression and
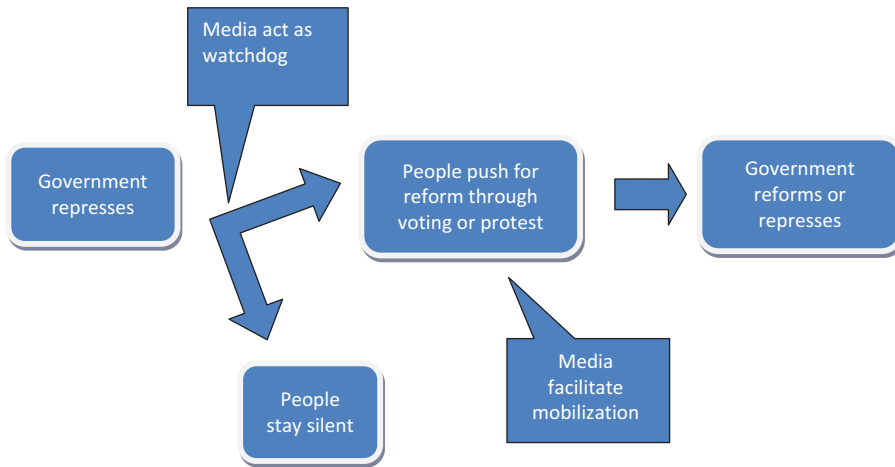
Figure 1. The role of the media in the repression-protest nexus (color figure available online).

accommodation and that consistent state application of either type of policy will serve to reduce protest, whereas inconsistent policies will fuel dissent. Goldstone and Tilly (2001) posited that dissent is shaped by a combination of threats (in this case repression) and opportunities. They redefine opportunity as anything that increases the chances of the protest's success and threat as "the costs that a social group will incur from protest, or that it expects to suffer if it does not take action" (Goldstone & Tilly, 2001, p. 182).

We conceptualize the presence of independent news media as one such opportunity. In this vein, Gamson and Wolfsfeld (1993) argued that news coverage of a social movement not only facilitates mobilization, but also serves to legitimize the movement. Likewise, Schock (1999) identified the "importance of press freedoms and information flows" in defining the political opportunities for people power movements in autocracies. Evidence that the media perform this role can be seen in how quickly governments seek to suppress media coverage during protest events. A case in point would be restrictions imposed on media coverage of the protests following the 2009 election in Iran. Iranian authorities notified the Tehran office of the network Al Arabiya that it would be closed for 1 week, an opposition newspaper failed to reach the newsstands, and some foreign journalists were ordered to leave the country (Associated Press, 2009). New media were similarly muzzled: Cell phone service was disrupted, Internet filtering increased, and social networking sites were disabled (Associated Press, 2009).[8] In looking at protest movements in democracies, specifically Germany, Koopmans (2005, p. 160) posited that public discourse and the media mediate the relationship between repression and protest, suggesting that "protests that are widely condemned in the public sphere as illegitimate are more likely to be repressed than protests that receive broad public support."

For the most part, though, the role of the media in the repression-protest nexus has been overlooked. In looking at the structural and strategic influences on collective action, Chwe (1999, p. 129) identified the importance of information in shaping an actor's decision to revolt and found that "knowledge of other people's knowledge is crucial." We agree and argue that independent news media serve to establish a baseline for this knowledge. Furthermore, we propose that the ability of the news media to establish such a baseline of knowledge is dependent on the media being at least somewhat independent from government control and commercial pressures. News coverage of government repression can also

increase the perceived need for reform. Finally, news media can be used to broadcast plans for protest or revolt.

Thus, to the degree that they are able to function independently, the news media collectively become a key participant in the struggle between the government and citizens in the repression-protest nexus.[9] While many have studied the relationship between media and government in the United States and other liberal democracies (Bennett et al., 2007; Entman, 2004; Hallin & Mancini, 2004; Iyengar & Kinder, 1987; Livingston & Bennett, 2003; McCombs & Shaw, 1972), the study of media independence across a range of regimes is an emerging area of research. Petrova (2007) developed a model of media capture and inequality and identified an association between higher inequality and lower media freedom. Gehlbach and Sonin (2008) modeled government control of the media and posited that it depends on the extent of the advertising market and the "mobilizing character of the government."[10]

While it may seem counterintuitive that media independence could exist in a nondemocratic setting, empirical studies have found that this mismatch does occur (Choi & James, 2005, 2006; Van Belle, 1997; Whitten-Woodring, 2009). Figure 2 depicts the dispersion of country/year cases with free and controlled media across a range of regime types from 1948 to 1995.[11] While most cases with free media occur in democratic settings, there are some instances in nondemocratic environments. Similarly, most cases of controlled media occur in authoritarian settings, but there are some instances in democratic regimes. These findings of course beg the question as to why an autocratic government would tolerate independent news media. We suggest some pragmatic reasons for doing so. Although it might seem more beneficial for an authoritarian regime to maintain tight control over all communication, doing that can be costly. Additionally, independent news media can provide useful information for authoritarian leaders. For example, Egorov, Guriev, and Sonin (2009) theorized that dictators might permit media freedom in order to remain informed about the performance of lower level bureaucrats in remote regions. Moreover, from a
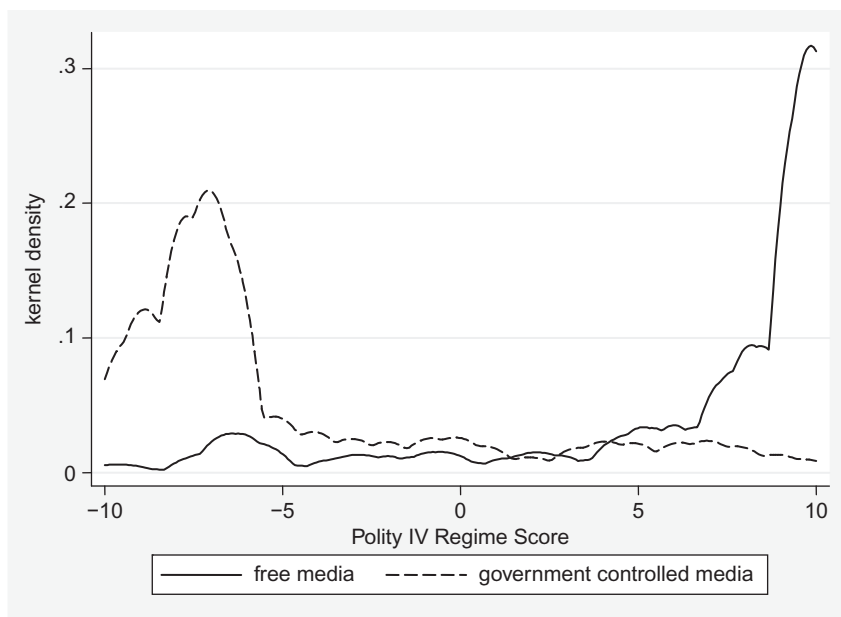

Figure 2. Media freedom and levels of democracy/autocracy, 1948–1995.

foreign policy perspective it may be beneficial to allow for some limited media freedom, especially given the push for media freedom from the World Bank and other international organizations. Whitten-Woodring (2009) posited that autocratic leaders might allow some media freedom for the very same reason that they sometimes hold elections: because they want to establish or maintain a semblance of legitimacy.

We build on this work and present a model of media, government repression, and protest movements. Democracy is expected to play a key role in such processes. We also argue that media independence, conceptualized as the interaction between media freedom from government control and commercialization, influences the degree to which news media act as watchdogs over government. In particular, we posit that freedom from both government control and commercialization promotes journalism with a public service rather than a profit-maximizing focus.

Media in the limited but innovative formal modeling literature so far plays the role of a *dependent* variable (Egorov et al., 2009; Petrova, 2007). The present model seeks a more interactive role and focuses on comparative statics including three aggregate actors: government, citizens, and media. The degree to which the media take on a watchdog role is endogenous, along with the choices of citizens to protest and government to engage in repression. Another way in which this modeling enterprise will go beyond previous efforts is to link with the ongoing dialogue over neo-Kantianism, most notably as related to the interconnectedness of democracy and peace. After literally hundreds of studies based on interstate dyads, the correlation of democracy with peace is not disputed. Much more interesting are the unresolved questions of what the connection means and, perhaps more importantly, how democracy functions within a network of variables that may affect conflict processes (e.g., Potter & Baum, 2010). The present study, therefore, looks at democracy (a) in terms of internal conflict processes and (b) in relation to media independence. Four scenarios are explored: (a) Democracy and media independence are both present, (b) democracy is present but media independence is absent, (c) democracy is absent (autocracy) and media independence is present, and (d) democracy is absent (autocracy) and media independence is absent. While democracy in particular has been assessed extensively for its presumed causal impact on interstate conflict processes, existing research generally is based on empirical testing of single-equation models and does not explore the interactions pursued here.[12]

Taken together, this modeling effort is intended to generate insights that are not available on the basis of intuition alone. With three actors and a range of factors that could influence comparative statics, application of a formal modeling effort such as this one inherently is justified. Whether "value added" exists will come out when solutions to the model are explored both mathematically and through case illustrations.

Media, Protest, and Government Repression

Our system includes three equations. While this system is disarmingly simple, the solutions are complex and capable of generating new ideas about causal connections. For purposes of clarification, it is important to note at the outset that we are *not* creating a game-theoretic model in this article. There is no order of play here. Neither expectations nor strategic interactions are included. Thus, the model does not generate an equilibrium in the game-theoretic sense, but permits comparison of levels of watchdog media, protest, and government repression across scenarios with variation in media independence and democracy. In fact, the "actors" are social aggregates and likely would be modeled game-theoretically as a more extended set of players.

One valuable by-product of this project is anticipated to be a better sense of what should be included in a game depicting interactions between and among the government, media, and general public. The justification for starting with comparative statics rather than moving straight into a multiplayer, incomplete information game model of strategic inter-action is straightforward: It makes sense to investigate comparative statics in an area where methods applied have tended to be case-oriented or statistical as opposed to formal.[13]

The first equation models the news media's decision whether or not to perform a watchdog role (W) and report government violations of physical integrity rights. Although it would be difficult to operationalize watchdog media, we conceptualize it as the degree to which the news media take the initiative to scrutinize and report critically about government behavior. In other words, this is the extent to which the news media engage in investigative reporting. Here we are dealing specifically with the news media's watchdogging regarding government repression of human rights. We propose that the media's decision to cover human rights violations depends on whether or not the media are independent from government control and commercialization (I). The rationale for this is that if the media are at least somewhat free of both, journalists will face fewer obstacles to reporting critically about government repression and will be more likely to do so in order to enhance their reputations. We also expect that the presence of democratic institutions (D) will increase the benefits of watchdogging because democratic institutions make govern-ment more vulnerable to public opinion. Thus, we would expect watchdog media to have more influence with the presence of democratic institutions. We propose that media orga-nizations are also likely to react to and cover protests (P) concerning repression. We also posit that watchdog journalism is influenced by whether there is a need for it, in this case the degree to which there is government repression of human rights (R). The rationale here is that repression motivates journalists to perform a watchdog role, often at their own peril. As a case in point, Chechen reporter Natalya Estemirova continued to report on the human rights violations of the Chechen regime in spite of persistent warnings:

> Defying death threats from government militias and a personal warning from the Chechen president, on July 13, Estemirova gave an interview to the Caucasian Knot news agency about her latest expose of killings and house burnings committed by representatives of the Chechen regime. Early on the morning of the 15th, she was forced at gunpoint into a car outside her home, shot in the heart and head and dumped. (Gold, 2009)

Yet, when repression is extreme, we expect that dissent is stifled and the media are silenced. For example, in Burma (Myanmar) the military junta manages to restrict virtually all media. Thus, it was almost impossible to get information about the pro-democracy demon-strations in 2007, and the protests were quickly suppressed (Freedom House, 2008). As a result, we argue that extreme repression (i.e., R multiplied by itself, or R^2) will lead to less watchdog journalism. Therefore, the first equation reads as follows:

$$W = I + D + P + R - R^2. \tag{1}$$

Watchdogging is an increasing function of media independence (i.e., from government control and commercialization), democracy, and protest. It is also an increasing function of repression until repression becomes severe (R^2), at which point the relationship reverses. As an illustration, a study of state violence in Guatemala reports the following connection:

"Newspapers in Guatemala tend to avoid controversy when the controversy exceeds certain parameters" (Davenport & Ball, 2002, p. 443). Note that the impact of the R-related components is negative at *low* levels of repression as well.[14] This linkage is consistent with the idea of what we term "fat-cat" media. All other things being equal (i.e., I, D, and P held constant in Equation 1), a relative absence of repression can be anticipated to breed complacency into the media, leading to less watchdogging.

The second equation concerns the decision of citizens to protest or not (P). Following Carey (2006), we conceptualize protest as a continuum with low levels of nonviolent demonstrations at one extreme and high levels of violent riots and general strikes at the other. We posit that the decision of whether to protest and the extent to do so depends first on whether people are informed by the news media (W) about government repression. The presence of independent watchdog media also lowers the cost of action and participation by facilitating coordination and mobilization. In addition, watchdog media make protest more attractive in terms of benefits, all other things being equal, because the chance of favorable coverage becomes greater than otherwise. Finally, the level of government repression (R) is an important factor in determining both the incentive for protesting and its potential costs. We posit that government coercion at an *intermediate* level increases the incentive to protest. Values approaching the maximum and minimum, by contrast, will likely inhibit protest, albeit for very different reasons. At very high levels, protest will be reduced because of the likelihood of extremely negative consequences.[15] When repression is very low, little protest is expected because there is no motivation. To capture this nonlinear effect we include both R and R^2, but with opposite signs.

$$P = W + R - R^2. \tag{2}$$

Protest is an increasing function of watchdogging and intermediate levels of repression and a decreasing function of low and high levels of repression (i.e., the squared term).

Government repression (R) is modeled in the third equation. Building on empirical studies that show a strong relationship between democracy and reduced repression (Poe & Tate, 1994; Poe et al., 1999), we expect that democracy will discourage government repression; however, recent research (Bueno de Mesquita et al., 2005; Davenport & Armstrong, 2004) suggests that only consolidated democracy has a negative influence on repression. Therefore, we include consolidated democracy as a squared term of democracy (D^2).[16] Additionally, we theorize that the news media's decision to perform a watchdog role will influence a government's decision regarding repression because media coverage of violations will likely raise the costs associated with such behavior. Yet, we posit that the effect of watchdog media depends on the presence of democratic institutions because the latter make the government vulnerable to public opinion and, by extension, watchdog media. Therefore, we include the interaction between watchdog media and democratic institutions (WD). Empirical research confirms this supposition (Whitten-Woodring, 2009). Additionally, Bueno de Mesquita and colleagues (2003, 2005) argued that governments with a larger "selectorate" will be less corrupt. Similarly, a democratic regime must keep a higher proportion of its public "on board" in order to retain power. Thus, if both watchdog media and democratic institutions are present, it is bad business for government to repress human rights as a result of the "logic of political survival" (Bueno de Mesquita et al., 2003). Finally, we include protest (P) in this equation because a government is likely to respond to protest with repression.[17]

$$R = P - D^2 - WD. \tag{3}$$

In sum, repression is a positive function of protest and a negative function of squared democracy and the interaction of watchdog media and democracy.

Solving the Model

We begin with a simple derivation of maxima and minima for the respective equations (see Table 1), which are anticipated to prove interesting when we later derive substantive implications from the model. Maximum and minimum values are derived by substituting combinations of the extreme values (i.e., 0 and 1) for I and D in the equations from Table 2 for W, P, and R. In the above equations, W represents the media's decision to play a watchdog role by deciding to cover government violations of physical integrity rights. At its minimum there is no news coverage of this type of repression (0), and at its maximum there is complete news coverage of it (approaching ∞).[18] P represents the people's decision to protest against government. At its minimum there is no protest ($\frac{1-\sqrt{3}}{2}$), and at its maximum there is mass protest (approaching ∞). R represents government repression (e.g., politically motivated murder, disappearance, torture, and imprisonment). At the minimum of R there is no repression ($\frac{1-\sqrt{5}}{2}$), and at its maximum there is full repression (0). Democracy and media independence are assigned a range of values from 0 through 1 inclusive.

Table 2 conveys the solutions for watchdog media, protest, and repression (W, P, R) expressed in terms of democracy and media independence (D, I). It is obvious from the outset that these expressions go beyond mere intuition. All of the expressions include polynomials and square roots; two of the three equations entail interactive terms (i.e., DI and D^2I).

Table 1
Minima and maxima for watchdog media, protest, government respect
for human rights, democracy, and media independence

Symbol	Meaning	Minima	Maxima
W	The media's decision to play a watchdog role by covering repression	No news coverage of repression, 0	Complete news coverage of repression, approaching ∞
P	The people's decision to protest	No protest, $\frac{1-\sqrt{3}}{2}$	Mass protest, approaching ∞
R	Government repression of physical integrity rights	No repression, $\frac{1-\sqrt{5}}{2}$	Mass repression, 0
D	Democratic institutions	No democratic institutions, 0	Completely consolidated democracy, 1
I	Media independence	Complete government control of media and/or complete commercialization of media, 0	Complete independence from both government control and commercialization, 1

Table 2
Solutions

	Solution
Watchdog media	$\dfrac{1+D^2-2D^3+I-DI-\sqrt{1-3D^2+2D^3+2I-4DI+2D^2I}}{2(1-2D+D^2)}$
Protest	$\dfrac{1-D+3D^2-3D^3+DI-D^2I-\sqrt{1-3D^2+2D^3+2I-4DI+2D^2I}}{2(1-2D+D^2)}$
Government repression of human rights	$\dfrac{1}{2(1-\sqrt{1+2D+2I})}$

As noted above, the effects of democracy and media independence are explored in four scenarios corresponding to ideal types in combination with each other. D represents the presence or absence of democratic and autocratic institutions. The maximum value of D (1) represents a completely consolidated democracy and a total absence of autocratic characteristics. The minimum value of D (0) means there is full autocracy with a complete absence of democratic institutions. Media independence (I) represents the degree of freedom from government control and pressures of commercialization. The minimum value of I (0) represents a complete lack of standards so that news is generated and disseminated in an environment contaminated by government meddling, commercialization, or both. At its maximum value (1), I represents a news environment in which journalists are completely free from both government and commercial constraints.

Table 3 provides solutions for the equations at the polar points where media independence and democracy are both present (I = D = 1), absent (I = D = 0), and one absent with the other present (I = 0, D = 1 and I = 1, D = 0). It should be noted from the outset that the numerical values in the table have no absolute meaning. Instead, they should be interpreted as inequalities because there is no empirical scaling for W, R, or P.

For watchdog media, note that a maximum value, approaching infinity, is reached in both scenarios where D = 1. This is explained easily by a basic property of the equation for W; as D approaches 1, the denominator approaches 0, meaning that the expression

Table 3
Solutions for different combinations of democracy and media independence

	Watchdog media	Protest	Government repression of human rights
Democracy with media independence, D = I = 1	Approaching ∞	Approaching ∞	$\frac{1-\sqrt{5}}{2}$
Democracy without media independence, D = 1 and I = 0	Approaching ∞	Approaching ∞	$\frac{1-\sqrt{3}}{2}$
Autocracy with media independence, D = 0 and I = 1	$\frac{2-\sqrt{3}}{2}$	$\frac{1-\sqrt{3}}{2}$	$\frac{1-\sqrt{3}}{2}$
Autocracy without media independence, D = I = 0	0	0	0

as a whole will go to either positive or negative infinity depending on the value of the numerator. Thus, in this system of equations, fully realized democracy emerges as a sufficient condition for maximum watchdogging. Next in line is the scenario where democracy is absent (autocracy) in tandem with media independence, with the absence of both democracy and media independence producing a minimal level of watchdogging. These additional orderings make sense because autocracy with media independence is associated with a higher level of watchdogging than autocracy without media independence, suggesting that with the absence of media independence there is neither interest nor incentive for journalists to engage in watchdogging.

Protest shares a common structural trait with watchdogging, so once again the scenarios with $D = 1$ produce values approaching infinity. The reason is that once again the denominator of the expression goes to 0 as D approaches 1, and thus protest approaches infinity. Although we would expect people living in a democracy to experience more satisfaction and to consequently have less need to protest, it does follow that democratic institutions increase the potential benefits of protesting because the government has more incentives to listen to the people. Note an interesting reversal in ordering, as compared to watchdogging, for the two scenarios where democracy is absent. The level of protest for autocracy with media independence is even lower than the zero value for autocracy without media independence. Perhaps this is because in the absence of democracy, independent media engage in some watchdogging and this makes citizens more aware of the costs of protesting, whereas in the absence of both democracy and media independence, people cannot use democratic institutions or media to keep government in line, and thus protest becomes their only mechanism with which to bring about reform.

Repression, as would be expected, is at a maximum level when both democracy and media independence are absent. Interesting to note is that the value for repression is equal in magnitude, $\frac{1-\sqrt{3}}{2}$, when one condition is present and the other absent; media independence and democracy would seem to exhibit effective substitutability here. Finally, the minimum value for repression, $\frac{1-\sqrt{5}}{2}$, is reached when both democracy and media independence are present.

Perhaps more can be gleaned from examining the relative values for W, R, and P in each scenario. When media independence and democracy are both present, watchdogging and protest are at the same level and higher than repression. Watchdogging and protest once again are equal to each other and greater than repression when democracy is present and media independence is absent. When media independence is present and democracy is absent, protest and repression are equal and below watchdogging in magnitude. With democracy and media independence each absent, W, R, and P all equal zero. Note the difference in relative value, however; watchdogging is at a minimum, protest is relatively low, and repression is at a maximum—an unpleasant scenario.

Case Illustrations

The cases below are included in order to provide empirical illustrations. This process can help to inform both strategic modeling at the next step and further empirical testing. We have selected these cases based on their values for our independent variables, media independence and autocracy-democracy. In selecting our cases, we were looking for combinations where the democracy variable and the media variable were both at the positive pole, both at the negative pole, and one at the negative pole while the other was at the positive pole. Once we identified cases that met these criteria, we selected cases that

varied regionally from others and cases for which more information was available. Since we conceptualize media independence as the interaction between government control and commercialization, we must consider each of these concepts. Freedom House's Freedom of the Press Survey (2010) evaluates the media legal, political, and economic environments of all available countries and rates each as "free," "partly free," or "not free." We also consider the Reporters Without Borders Press Freedom Index (2010), which ranks countries according to their level of press freedom, with countries rated 1 being the most free.

In lieu of a data set measuring the level of commercialization of the news media across countries, we have relied on the qualitative descriptions found in reports from a number of sources including Freedom House, Reporters Without Borders, and the Committee to Protect Journalists.[19] We use the Polity IV index (Marshall, Jaggers, & Gurr, 2003) to measure the level of autocracy-democracy in a country. This index of authority patterns ranges from those that are most closed (-10) to those that are most open (10). This is a useful measure because it does not take into account civil liberties or media freedom. Instead, it focuses primarily on executive constraints and political competition.

We used these data sets to identify cases with interesting and different combinations of media independence (government control and commercialization) and autocracy-democracy and then considered how watchdogging, repression, and protest line up compared to the predictions of our model. We chose to focus on the years 2000 to 2009, primarily because detailed information about media independence, protest, and repression is more readily available for these years.[20] The countries/cases we selected are the Netherlands, a consolidated democracy with independent media, and Myanmar (Burma), a non-democracy with mostly controlled media. We also selected Tanzania, a non-democracy with mostly independent media, and Brazil, a democracy with limited media independence; however, because of space constraints, these cases are included in an appendix.[21] It is important to note that these cases are not perfect parallels to the extreme cases outlined in our model predictions (i.e., Table 3). In reality, it is not possible for government to exert complete control over media. Likewise, media are never completely independent. The Netherlands and Myanmar come close to representing, respectively, a democracy with independent media and a non-democracy with controlled media, but Tanzania and Brazil both have media that are somewhere in the middle. We argue that the extreme concentration of ownership skews Brazil more to the controlled end and a blend of state-owned and private media pushes mainland Tanzania toward the independent side.

To measure and compare levels of repression, we used the Physical Integrity Rights Index from the CIRI Human Rights Data Project, which focuses on government respect for the right to be free from political imprisonment, torture, extrajudicial killing, and disappearance and ranges from 0 (no respect) to 8 (full respect) (Cingranelli & Richards, 2010).[22] We also consider country reports from Amnesty International, Human Rights Watch, and the U.S. Department of State. To assess the level of protest, we searched the Lexis Nexis data set for news stories using the country name and "protest" between 2000 and 2009, and then scanned the search results for relevant articles.[23] While we do not have a measure for watchdog reporting, we rely on media experts and surveys of journalists to appraise the degree to which journalists report critically about their government and its policies.

The Netherlands: Democracy and Independent Media

The Netherlands is a highly democratic constitutional monarchy with relatively independent media. From 1946 to 2008, this Western European country consistently received a

Polity score of 10, meaning it is considered a "fully institutionalized" democracy (Marshall & Jaggers, 2009). Similarly, the Dutch media are considered to be among the most independent in the world, earning the country top rankings in the Reporters Without Borders Press Freedom Index (2010) and a rating of "free" from Freedom House's Survey of Press Freedom (2010).[24]

Although the Dutch media have become increasingly commercialized in recent years, comparatively they are less so than media in most countries. In particular, the public broadcasting system remains strong and closely associated with a range of ideological and/or religious groups, primarily because of lingering aspects of pillarization (Freedom House, 2010; Hallin & Mancini, 2004). In the 1920s, the Netherlands adopted a pillared system where radio stations were publicly funded and operated by different social, political, and religious groups. This model was extended to television as well, though some attribute the breakdown of pillarization in the late 1960s to television because it offered more centralized programming, was more vulnerable to commercialization, and fostered a more critical approach to journalism in which reporters began to challenge rather than defer to leaders of the various groups that comprised the pillars (Hallin & Mancini, 2004; Wigbold, 1979). Indeed, media ownership is becoming increasingly concentrated in the Netherlands. This is especially true of the newspaper industry, in which 90% of all non-free publications are owned by three companies (the Netherlands also has a number of free newspapers) (Bakker & Vasterman, 2010). Similarly, multinational corporations own the majority of the private television market in the Netherlands (Trappel, Meier, d'Haenens, Steemers, & Thomas, 2011). Even so, public broadcasting remains for the most part publicly funded and therefore somewhat free from commercial pressures.[25] In general, the Dutch government does not regulate the media.

> There exists one distinct exemption to this rule: the strong role the government aims to play to support pluriformity in the media. This means that the function of the media in society is seen as a mirror of that particular society as well as allowing equal access of existing views and ideas of different peoples to the media. (Deuze, 2002, p. 8)

Interestingly, in his survey of Dutch journalists, Deuze (2002, p. 92) found that the extent to which journalists were driven by commercial interests varied largely due to medium rather than ownership, such that "radio and newspaper reporters are typically the ones who support non-revenue and audience-revenue goals, and magazine and television journalists are the ones generally leaning towards advertising revenue goals." According to Freedom House (2010), in spite of the concentration of ownership of print media, newspapers provide a "wide variety of opinions." In addition to print and broadcast media, online media is free from government restrictions and widely available to citizens. According to the European Journalism Centre, the Netherlands' level of Internet penetration, about 88%, was the highest in the European Union in 2008 (Bakker & Vasterman, 2010). Indeed, many Dutch citizens use the Internet to access traditional media: "In 2008 more than 50 percent of . . . Internet users [watched] television and listen[ed] to radio via the Internet. Almost one in two users read or download[ed] news from newspaper websites" (Bakker & Vasterman, 2010).

Thus, the Netherlands is a democracy with comparatively independent media. In this scenario, our model predicts a high level of both watchdog reporting and protest and a very low level of repression.[26] Indeed, repression of physical integrity rights was relatively rare in the Netherlands for the years 2000 to 2009.[27] For example, in 2004 "the Government

generally respected the human rights of its citizens, and the law and the judiciary provide effective means of addressing individual instances of abuse" (U.S. Department of State, 2005). However, in the second half of the decade there were reports that municipal governments failed to address reports of racism, discrimination, and violence against some ethnic and religious minorities (Amnesty International, 2008; U.S. Department of State, 2010). Yet overall, there were no reports of the government or government agents violating physical integrity rights (U.S. Department of State, 2010). Thus, repression remained comparatively low in the Netherlands from 2000 to 2009.

In contrast, protests are quite common in the Netherlands. A search of Lexis Nexis for news stories on protests retrieved articles on a number of mostly nonviolent demonstrations around a wide range of issues, from a protest by pajama-clad family doctors demanding higher wages in October of 2000 to a protest by "working residents and landlords" in Amsterdam's red-light district against a city official's efforts to gentrify the area (Simons, 2000, 2008). There were a number of protests around government decisions, including a demonstration by tens of thousands against the Dutch Senate's vote legalizing assisted suicide for seriously ill patients (Reuters, 2001). Dutch protesters mobilized around the issue of global warming, against the war in Iraq, and against Halal meat (Associated Press, 2006; Colwell, 2003; Revkin, 2000). By far the largest demonstration during these years occurred in Amsterdam on October 2, 2004, when some 200,000 people marched against the government's failure to follow the Dutch "polder model," which called for negotiated economic reforms ("Going Dutch," 2004). These demonstrations were followed by a 1-day strike called by the transportation workers' union that halted all train and most bus traffic in the country ("Pensions Stoppage," 2004).

Although we do not have a measure of media watchdogging, apparently most journalists do view this as an important aspect of their job. In his survey of Dutch journalists, Deuze (2002, p. 94) found that they do see themselves as watchdogs over government and big business; "the Dutch reporter will go undercover, will use government documents, business papers and other 'official' material without thinking twice and badger or harass potential sources of information, even if they do not want to cooperate with the journalists' effort to get the story." Among those surveyed, 81% said it was important to "be an adversary of public officials and businesses," 69% said it was important to "investigate the claims of government," 73% said it was important to "give people a chance to express their views," and 41% said it was important to "stand up for the disadvantaged" (Deuze, 2002, p. 82).

In conclusion, from 2000 to 2009, the Netherlands was a democracy with independent media. In keeping with the predictions of our model, during this time the government generally respected the human right to physical integrity. At the same time, watchdogging appeared to be a priority for Dutch journalists, and citizens routinely resorted to protest to register their disapproval of government actions.

Myanmar/Burma: Non-Democracy and Controlled Media

Myanmar (Burma) has been under military rule since the 1962 coup d'état. Although there have been some changes in the structure of the leadership, the military has retained control and Myanmar has consistently scored between −4 and −8 on the Polity Scale, indicating that it is decidedly non-democratic. Given this lack of institutional democracy, it is not surprising that the media in Myanmar are highly controlled. Since Reporters Without Borders (2010) began its Press Freedom Index in 2002, it has consistently ranked Burma in the bottom six countries. Likewise, Freedom House (2010) has ranked Myanmar as "not free"

since it started tracking media freedom in 1980 and describes the country's media as being "among the most tightly restricted in the world."

In spite of these restrictions, there is some variation in media ownership and media independence within the country. There are three types of media in Myanmar: state-owned media that serve as government mouthpieces; commercial media, which must submit their publications to the Press Scrutiny and Registration Board but still manage to cover some social issues; and international radio broadcasts, including the Norway-based Democratic Voice of Burma, the Voice of America, and the British Broadcasting Corporation (A. M. Thawnghmung, personal interview, 2010).[28] These Burmese-language broadcasts are available throughout the country, even though there are laws against listening to them. Less than 1% of the population has access to the Internet, and those who do must invest in technology to evade the government's firewall in order to view uncensored content (Freedom House, 2010). Although "media are ostensibly allowed to offer 'constructive' criticism of government projects," in reality this is seldom the case (Freedom House, 2010). Thus, commercial media are subject to both commercial pressures and government censorship, yet they do manage to cover some social issues, including the AIDS epidemic (A. M. Thawnghmung, personal interview, 2010). At times these publications manage to indirectly criticize the government by covering issues in other countries in such a way as to invite comparison to subjects that are off limits in Myanmar (A. M. Thawnghmung, personal interview, 2010). For the most part, though, commercial media are forced to work within the government's restrictive framework.

As a non-democracy with mostly controlled media, our model predicts that Myanmar would have a minimum of watchdog reporting, some protest (less than a democracy but more than an autocracy with independent media), and maximum repression. Indeed, Myanmar does have a very poor record of human rights. For almost every year from 2000 to 2009, the CIRI Physical Integrity Rights Index score for Myanmar was either a 0 or a 1, meaning that were frequent cases (at least 50 each) of political murder, imprisonment, torture, and disappearance (Cingranelli & Richards, 2010).[29]

Media are rarely able to serve as watchdogs over the Myanmar government. Media observers confirm that it is just not possible for domestic journalists to engage in direct criticism of the government (A. M. Thawnghmung, personal interview, 2010). According to a reporter at a privately owned paper (correspondence with J. Whitten-Woodring, 2011), this is due not only to the constant threat of censorship from the Press Scrutiny and Registration Board but also to "the lack of knowledge of the reporters, which hurts story coverage." While the international broadcasters, especially the Democratic Voice of Burma, do strive to act as watchdogs, they are only able to do so from beyond Myanmar's borders.[30] Therefore, while some watchdog reporting is available to the Burmese, it is almost never generated domestically. This is in keeping with our model's predictions, which are limited to the domestic media.

Although protest is rare in Myanmar, when it does happen, it is massive. A search of Lexis Nexis for news articles on protests in Myanmar between 2000 and 2009 retrieved a number of stories of the 2007 protests, but very few articles about other protests.[31] To look at the relationship between and among protest, watchdog media, and repression in Myanmar, we focus on the fall of 2007.

When more than 100,000 Buddhist monks and their supporters joined forces to demand democratic reform in a series of peaceful protests in September of 2007, the world watched and hoped against hope that there would not be a repeat of the brutal crackdown that left an estimated 3,000 people dead and put an end to the 1988 people power movement ("The Saffron Revolution," 2007). For a while, citizen journalists circumvented the

military junta's iron grip on the flow of information, using cell phones and the Internet to send information, pictures, and videos of the protests and the regime's repressive response (Fowler, 2007). Yet, within days of the first protests, the government had disconnected the Internet and most of the cell phone lines, making it difficult for the rest of the world to track what was happening to the participants in what some media organizations termed "the Saffron Revolution" (Reporters Without Borders, 2007). Myanmar officials informed a United Nations envoy that 15 people were killed as the government put down the protests, but other reports put the death toll in the hundreds (Fuller, 2007).

In the initial phase of the protests of 2007, citizen journalists did perform a watchdog role, documenting both the protests and the government's repressive response. In the long run, though, the government was able to stifle all media. Thus, this case depicts the difficulty of sustained media watchdog behavior in an autocratic setting with mostly controlled media. Although it is difficult to discern the outcome of the protests of 2007 because of the government's stranglehold on information, all indications are that the junta's brutal suppression of the protests effectively discouraged future protests. There is every indication that there is little or no government respect for human rights in Myanmar and that this lack of respect is what prompted the protests in 2007. In this case, neither the fledgling citizen journalists nor the protesters could bring an end to government repression. Thus, as our model predicts for a non-democracy without media independence, from 2000 to 2009 Myanmar had minimum watchdogging and maximum repression. Although there were mass protests, these were quickly and brutally suppressed.

Conclusions

This study began with the objective of developing a formal model of media, citizens, and government in relation to each other. The degree to which the media collectively fulfill a watchdog role vis-à-vis the government was investigated, along with protest and government repression, across four scenarios: democracy and media independence both present, democracy present but media independence absent, democracy absent (autocracy) and media independence present, and democracy absent (autocracy) and media independence absent. Parameters for media independence (I) and democracy (D) were manipulated in order to generate expectations about how the media, government, and citizens will act in each scenario.

Among those derived from the model, the following insights are held to be beyond mere intuition:

1. As democracy approaches its maximum, this is a sufficient condition for both watchdogging and protest to approach their maximum values.
2. Protest reaches its minimum when autocracy is combined with media independence.
3. Watchdog media is unequal to protest in one scenario; it is higher than both protest and repression when autocracy is combined with media independence.
4. When media independence is absent (present) and democracy is present (absent), repression takes on the same value, suggesting a tradeoff effect.
5. When media independence and democracy both are absent, watchdogging, protest, and repression assume the same numerical value but with different relative values along the scale for each.

Several observations might be offered about this list of insights, collectively speaking. First, they validate the modeling effort because several, if not all, are not obvious by intuition. Second, it will be valuable to specify a game-theoretic model to see whether

results from the current study are reinforced or challenged once strategic interaction among the players is introduced. Third, systematic empirical research, beyond the generally supportive examples that appear in the present study, becomes a priority in assessing the performance of a model that has generated some complex propositions.

This study represents a step forward for formal modeling and research on media and politics. The model developed here activates media; previous formal expositions had treated it strictly as a dependent variable. Additionally, this research looks at how democracy and media independence combine to create different profiles of watchdogging, protest, and repression.

Further work should elaborate the model while exploring game-theoretic and empirical results to learn more about the complex interconnectedness of government, citizens, and media. Dynamic elements of state-dissident interactions, for instance, have yet to be modeled and should be a priority for the next stage of work that emphasizes strategic interaction. Similarly, watchdogging could be related to prior repression in various ways revealed by equilibria derived from a game-theoretic model. It is hoped that the comparative statics of the present study will pave the way for further research on the complexity inherent in public protest, government repression, and media watchdogging as connected to each other.

Notes

1. Our conceptualization of news media incorporates any medium that is used to gather, produce, and transmit news. Thus, we use the term "media" to apply to print, broadcast, and online media.

2. By institutionalized political competition, we mean free and fair elections and competitive recruitment of executives. We are not referring to political competition in the form of threatening behavior at the domestic level, such as protests, general strikes, and armed rebellion. As we will discuss in some detail later in this article, we conceptualize media independence as the interaction between media freedom from government control and media freedom from commercialization.

3. Research on repression and protest is more extensive than what is covered by the following review. Studies of the repression-protest nexus per se produce support for investigations based on rational choice (Lichbach, 1987; Shellman, 2006). Case studies portray states as "purposive actors" with regard to responding to protests (Moore, 2000, p. 120). These diverse cases include the Iranian Revolution (Rasler, 1996), state repression and accommodation of protest in Peru and Sri Lanka (Moore, 2000), and government cooperation and conflict with dissidents in Chile and Venezuela (Shellman, 2006).

4. Interestingly, when it comes to human rights, findings from quantitative studies are sometimes at odds with those of qualitative studies. This is especially the case with research on the effectiveness of international human rights instruments, where quantitative studies indicate that these instruments do not have the desired effect and qualitative studies suggest that they do (see Hafner-Burton & Ron, 2009). Hafner-Burton and Ron (2009) recommend that one way to address these discrepancies is to employ mixed methods, which we do in this study.

5. The media also can perform several functions in conflict resolution. See Gilboa (2008, pp. 463–468) for an account of signaling and communication, mediation, confidence-building, and promoting agreements as such functions.

6. Ownership does not always translate to editorial control. For example, the BBC is owned by the state but is editorially independent. Indeed, publicly owned media in democracies generally are more free from commercial pressures than those that are privately owned. Thus, in democracies we might expect publicly owned media to play more of a watchdog role. In comparison, state-owned media in non-democracies are unlikely to criticize government.

7. In Mexico, for example, the reporting of activist media actually influenced the mainstream media. Lawson (2002) found that in the 1990s fringe media were the first to cover scandals of government corruption, but when it became apparent that Mexican audiences had an appetite for scandals,

the mainstream media began to publish exposes of government abuse. Lawson (2002) argued that providing this sort of coverage benefited journalists because uncovering scandals helped to launch careers. Therefore, while the presence of activist media would likely promote watchdog reporting and minimize the effects of commercialization, the absence of activist media would leave only media that are closely tied to and dependent on government sources, thereby intensifying the effects of commercialization wherein media owners are more concerned about securing the next story and maximizing profits. A more general point of caution comes from Davenport and Ball (2002, p. 428) on the subject of data gathering; their study of repression in Guatemala reveals variation among newspapers, human rights organizations, and interviews in reporting "statistical patterns of state violence."

8. The use of new media to mobilize protests is an emerging area of research. For example, Bennett, Breunig, and Givens (2008) found that the use of digital communication (e-mail, lists, Web sites, texting) facilitated transnational protests against the war in Iraq. Yet, as the government response to the protests in Iran suggests, new media can be silenced and users of new media remain vulnerable to intimidation.

9. The effect of media freedom, however, varies by regime type. Whitten-Woodring (2009) finds that media freedom only improves government respect for human rights in the most consolidated democracies and that it actually is associated with increased repression in autocracies. The reason for this variance, as posited by Whitten-Woodring (2009), is that autocratic governments are not vulnerable to public opinion. Citizens, therefore, have no institutional outlets other than protest with which to hold the government accountable and push it to be responsive.

10. Gehlbach and Sonin (2008, pp. 1–2) conceptualized media freedom in two dimensions, media ownership (state or private ownership) and media bias (meaning "the extent to which the media misreport the news in favor of government interests"), and developed a formal model of government control of media. They found that "large advertising markets reduce media bias in both state and private media but increase the incentive for the government to nationalize private media." Our conceptualization of media independence is more nuanced in that it includes both government control (which incorporates ownership and the type of influence implied by Gehlbach and Sonin's concept of media bias) and commercialization.

11. This figure is a kernel density plot that shows the frequency of cases of free and controlled media across a range of regime types. Controlled and free media are measured using the Global Press Freedom data set (Van Belle, 2000). Regime characteristics are measured using the Polity Index, which ranges from −10 (most autocratic) to 10 (most democratic) (Whitten-Woodring, 2009).

12. Prior studies that focus on media openness, democracies, and interstate conflict processes include Van Belle (2000) and Choi and James (2005, 2006).

13. One other qualification concerns the simultaneous nature of cause and effect in the equations that follow; no lags or leads appear. While it is understood that such temporal elements occur in the real world (e.g., Figure 1), the model abstracts away from them at this point for two reasons. One is the tradeoff between the desire to include a reasonably comprehensive list of variables in each equation and the need for tractability. With the inclusion of time lags, it would become necessary to reduce the number of variables in order to permit solutions that remain comprehensible. The other reason is that no empirical version of our equations as yet exists (i.e., a three-equation simultaneous model). A desire to facilitate empirical testing of just that kind reinforces the need to start with simplicity and build in complexity as solutions are derived.

14. Observe that R is not bounded. Therefore, as it reaches values further below zero, the impact of the squared term in the equation is increasingly *negative*. This differs from the role of D in the third equation; the squared component there covers the interval from 0 to 1 inclusive because its values span that same range.

15. We acknowledge that there is much debate about the impact of repression on dissent. Francisco (1995, p. 277) reports that the "standard inverted-U hypothesis is supported weakly in Czechoslovakia, marginally negated in the GDR and invalid in the Intifada." Likewise, there is debate about the impact of information about repression on dissent. For example, in looking at leftist protests in Japan and the United States, Zwerman and Steinhoff (2005, p. 87) found that "draconian responses on the part of the government served as a stimulant" and facilitated mobilization. What if, however,

the level of repression within a given cultural setting is not yet at the level required to produce inversion? This query is not meant in a normative sense, that is, the Israeli and GDR governments have been "nice" to their protesters. Instead, within a given time frame, it may be that we are looking at just the range of data for which the association between repression and protest remains positive. Further observations that include higher levels of repression may be needed to bring out the curvilinear relationship in some contexts, while acknowledging that refutation remains a possibility even there.

16. State of the art empirical research on repression and democracy produces a trichotomy. Along a 10-point scale for democracy, categories 0 to 7 show no connection, categories 8 and 9 reveal "some negative impact" on repression, and category 10 exhibits "a strong negative effect on state repression" (Davenport & Armstrong, 2004, p. 584). The relatively simple squared term is consistent with these results, but subsequent formal modeling could take the precise intervals just noted and probe for differences in the results obtained for W, R, and P.

17. Empirical studies have found in particular that increased dissent leads to increased state coercion (Carey, 2006; Gurr & Lichbach, 1986).

18. We say approaching rather than equal to infinity because the corner solution is undefined due to division by zero (i.e., when D equals exactly 1). This is appropriate because even a perfect score for an observed state would not equate with perfection. In principle, it makes sense for the corner solution to sit at infinity because only a utopia would warrant such classification for either protest (public voice) or watchdogging (media conduct) or other positively valued aspects of society. In other words, there is no perfect democracy, so perfection cannot be reached for dimensions associated with that overarching concept.

19. We had hoped to use the Freedom House score for the economic environment as a proxy for commercialization, but found that for our purposes this measure focuses too much on economic constraints imposed by the state and not enough on the pressures of commercialization. For example, the news media in the United States have been widely criticized for failing to report independently because of intense commercialization and a focus on profit maximizing rather than public service (Bennett, 1990; Bennett et al., 2007; Hamilton, 2004). Yet, the Freedom House subscore for the U.S. media's economic environment is consistently low, meaning that it is relatively free from economic constraints. While the U.S. media do not typically depend on state advertising or subsidies, they are subject to increasing concentration of ownership and pressures to turn a profit.

20. Although Van Belle's (1997, 2000) Global Media Freedom data set goes back to 1948, we needed more qualitative information about our cases. Freedom House began providing qualitative descriptions of media environments with its 2002 report covering the year 2001, and we had access to qualitative information for the year 2000 from a forthcoming update of the Global Press Freedom data set.

21. This appendix is available online or upon request from the authors.

22. We could have used the Political Terror Scale (Gibney, Cornett, & Wood, 2011), which like the CIRI data set is coded from U.S. State Department and Amnesty International reports. We chose to use CIRI because it provides a breakdown of indicators for different kinds of physical integrity rights, though in the end we used the State Department, Amnesty International, and Human Rights Watch reports to get more detailed information.

23. For protest data, we could have used Banks's (2008) Cross-National Time-Series Data Archive, which includes several protest variables that are largely based on *New York Times* coverage, but since we needed more qualitative information, we decided to go directly to the source. Initially we searched Lexis Nexis for news stories in "major world publications," but this produced thousands of results, many of them duplicate accounts of the same events, so we narrowed our search to articles from the *New York Times*. We acknowledge that this limits the variation of perspectives on the protest stories (Davenport, 2010), but since our aim here is to compare the relative levels of protest across cases, we decided this limitation was acceptable. Our searches yielded numbers that roughly support our model's predictions for protest (maximum protest in democracies, some protest in non-democracies with controlled media, and minimum protest in non-democracies with independent media), with 506 stories for the Netherlands, 715 for Brazil, 315 for Myanmar (Burma), and 108 for Tanzania; however, many of the articles were duplicates or false positives (articles that

contained both terms but were not actually about a protest within the given country). Also, we suspect that the *New York Times* is more likely to focus on events in the Netherlands and Brazil, given the close ties between the United States and those countries, than on events in Myanmar and Tanzania. Consequently we do not focus on the quantity of stories, but rather the qualitative description of events, to get an overall view of the type and level of protest activity.

24. The Netherlands typically ties with a couple of other European countries for first place on the Reporters Without Borders Press Freedom Index. The exceptions to this are 2007 and 2008, when the Netherlands tumbled to 12th and 16th place (respectively) in the rankings after the government held two journalists in custody for 2 days for failing to disclose their sources. The Netherlands moved up to 7th place in 2009 and was back at the top in 2010 (Reporters Without Borders, 2010).

25. For example, in 2005, Dutch public broadcasting received more than 66% of its funding from public income and about 22% from advertising revenue; however, in 2006 it received about 55% of all funding from public income and 29% from advertising income (Trappel et al., 2011). Whether this change signifies a shift in reliance on advertising funds remains to be determined.

26. As a consolidated democracy with relatively independent media, the Netherlands approaches but does not quite reach the scenario where both democracy and independent media are at their highest level of 1.

27. The CIRI Physical Integrity Rights Index (Cingranelli & Richards, 2010) placed the Netherlands at the level of 8 (indicating that the government has complete respect for these rights) for the years 2000 to 2007 and at 7 for 2008 and 2009.

28. Satellite television does provide access to international news networks, but these broadcasts are for the most part in English and are focused on international rather than Burmese news.

29. The one exception to this was 2002, when Myanmar was scored a 3, which is still a relatively low score (Cingranelli & Richards, 2010).

30. The Democratic Voice of Burma does make use of undercover reporters from within Myanmar, 14 of whom have been incarcerated for their work (Committee to Protect Journalists, 2010).

31. This is certainly due in part to the difficulty in getting information about anti-government activities within Myanmar, but even so, the relative lack of news reports of protests in Myanmar does indicate a comparatively low occurrence of protest.

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