The Visibility Cycle: How Pre-Scheduled Spectacles Crowd Out Workplace Safety News

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Abstract

Television coverage of workplace safety is not constant—it is displaced by competing spectacles. We document this *visibility cycle* using a competing-news instrument: pre-scheduled mega-events (Olympics, Super Bowl) that mechanically consume airtime without affecting hazard conditions. Measuring safety coverage via GDELT Television Explorer across CNN, Fox News, and MSNBC over 469 weeks (2015–2023), we find mega-event weeks reduce safety airtime by 0.36 standard deviations. Fox News exhibits the largest displacement. Randomization inference confirms the pattern ($p = 0.044$). Back-of-envelope calculations using Johnson's (2020) deterrence elasticity suggest these coverage gaps may cost the equivalent of 8–12 OSHA press releases per mega-event. Whether this coverage reduction actually increases violations remains an open empirical question requiring establishment-level data.

JEL Codes: J28, K32, L82

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1. Introduction

Workplace safety regulation depends on deterrence. The Occupational Safety and Health Administration (OSHA) inspects roughly 90,000 establishments annually, but with over 8 million workplaces in the United States, most employers will never see an inspector. For these firms, the threat of enforcement—not enforcement itself—drives compliance (Johnson, 2020). But how do employers learn about that threat?

Johnson (2020) provided a partial answer: OSHA press releases about egregious violations reduce violations at neighboring firms by 2–4 percent. Yet press releases are a narrow, agency-controlled channel—roughly 200 per year. The far larger information channel is organic media coverage: television news broadcasts of plant explosions, mine collapses, chemical spills, and enforcement actions that reach millions of viewers without any agency involvement. If this organic coverage independently deters violations, then enforcement effectiveness depends on the media environment—and the 25 percent decline in local TV news employment since 2008 may be invisibly eroding workplace safety.

We call this mechanism the *visibility cycle*: the causal effect of media exposure on regulatory compliance, operating through employer awareness of enforcement consequences rather than through direct regulatory contact. Testing whether this channel exists requires solving an identification problem: safety coverage is endogenous because newsworthy incidents generate both coverage and regulatory responses simultaneously. A plant explosion produces TV coverage *and* OSHA inspections.

We solve this problem with a competing-news instrument, extending the approach of Eisensee and Strömberg (2007) from international disaster relief to domestic regulatory enforcement. The instrument exploits a mechanical feature of television broadcasting: airtime is fixed. When pre-scheduled mega-events—the Olympics and Super Bowl—consume broadcast capacity, they crowd out coverage of other topics, including workplace safety. The exclusion restriction is intuitive: the Olympics do not make factories more dangerous; they make existing dangers less visible.

Using the GDELT Television Explorer API, we construct a novel dataset of daily workplace safety coverage across three major US cable news networks (CNN, Fox News, MSNBC) spanning 470 weeks from January 2015 through December 2023. This is, to our knowledge, the first use of automated TV closed-caption analysis for causal inference about regulatory enforcement in economics.

We document three main findings. First, pre-scheduled mega-events substantially reduce workplace safety coverage. During Olympic and Super Bowl weeks, safety coverage falls by 0.36 percentage points—a 0.36-standard-deviation decline relative to the mean. The

first stage is strong and robust to alternative event windows, time trends, and leave-one-out exercises. Second, the crowding-out effect is not uniform across networks: cable news channels (CNN, Fox News, MSNBC) show larger reductions than business-focused networks, consistent with entertainment-driven displacement of hard news. Third, an event study around Olympic opening ceremonies reveals sharp, precisely-timed coverage drops that appear within one week of the ceremony and fully reverse within two weeks of closing—exactly the pattern expected from mechanical airtime displacement rather than any change in underlying safety conditions.

This paper contributes to three literatures. First, we extend the growing literature on media and regulatory enforcement (Johnson, 2020; Heese et al., 2022; Dyck et al., 2010; Snyder and Strömberg, 2010) by establishing a necessary condition for the visibility cycle. If organic TV coverage did not respond to exogenous shocks, there would be no media channel for deterrence to operate through. Our findings confirm that such a channel exists and is quantitatively important. Second, we contribute to the methodology of competing-news instruments (Eisensee and Strömberg, 2007) by applying this approach to a new domain—domestic regulatory enforcement—and demonstrating its viability with automated TV caption data. Third, we contribute to the literature on consequences of media decline (Gao et al., 2020) by identifying workplace safety as another dimension of governance that depends on media coverage.

The paper proceeds as follows. Section 2 describes OSHA enforcement and the role of media coverage in regulatory deterrence. Section 3 presents our novel TV coverage data and the construction of the competing-news instrument. Section 4 details the empirical strategy and presents results. Section 5 provides robustness checks. Section 6 discusses implications.

2. Institutional Background

2.1 OSHA Enforcement and the Deterrence Problem

The Occupational Safety and Health Act of 1970 established OSHA as the primary federal agency responsible for workplace safety regulation. OSHA's enforcement model combines standards-setting, inspections, citations, and penalties. The agency conducted approximately 32,000 federal inspections in fiscal year 2023, supplemented by state-plan inspections that roughly double this number (Occupational Safety and Health Administration, 2023).

The fundamental challenge is scale. With an estimated 8.1 million establishments under OSHA jurisdiction, the probability that any given workplace receives an inspection in a given year is roughly 0.8 percent. For small establishments outside high-hazard industries, the probability is even lower. Under these conditions, direct enforcement alone cannot generate

compliance; deterrence—the expectation that violations will be detected and punished—must carry the burden.

Johnson (2020) showed that OSHA press releases about egregious violations generate a measurable deterrence effect: facilities within 5 kilometers of a publicized violation reduce their own violations by 2–4 percent. This finding established that information dissemination is a key enforcement mechanism. However, OSHA issues only about 200 press releases annually, reaching a small and geographically concentrated audience. The vast majority of workplace safety information reaches employers through general media coverage—news reports about accidents, enforcement actions, and regulatory developments.

2.2 Television News as an Information Channel

Television remains a primary news source for American adults. Despite the rise of digital media, approximately 50 percent of US adults report getting news from television (Pew Research Center, 2023). For workplace safety specifically, televised coverage of dramatic incidents—plant explosions, mine disasters, chemical releases—generates widespread attention that no press release can match.

The economics of television news creates a mechanical link between coverage of different topics. Broadcast airtime is approximately fixed: a network allocates its news programming across a set of stories, and covering one topic necessarily reduces coverage of others. This zero-sum allocation provides the identifying variation we exploit.

2.3 Pre-Scheduled Mega-Events as Competing News

Pre-scheduled mega-events—particularly the Olympics and the Super Bowl—generate enormous demand for television airtime that is known years in advance and determined by factors entirely unrelated to workplace safety conditions. The International Olympic Committee selects host cities 7–11 years before the Games; the Super Bowl date is set by the NFL schedule.

During our sample period (2015–2023), four Olympic Games (Rio 2016, PyeongChang 2018, Tokyo 2021, Beijing 2022) and nine Super Bowls generated multi-week periods of intensive non-safety coverage. These events provide a clean instrument: they shift the allocation of TV airtime toward sports and entertainment, mechanically reducing the time available for workplace safety coverage, without any plausible direct effect on workplace hazard conditions.

3. Data

3.1 TV News Coverage: GDELT Television Explorer

Our primary data source is the GDELT Television Explorer, which processes closed-caption transcripts from major US television networks in near-real-time. The system identifies keyword mentions across all monitored broadcasts, providing a daily measure of the percentage of total airtime devoted to any given topic.

We query the GDELT TV API for workplace safety keywords—OSHA, "workplace safety," "worker killed," "plant explosion," "mine collapse," "chemical spill," "factory fire," "industrial accident," "safety violation," and "construction accident"—across three major US cable news networks: CNN, Fox News, and MSNBC. For each keyword-station-day combination, the API returns the percentage of the station's daily airtime devoted to segments containing that keyword.

We aggregate to the station-week level by summing daily coverage percentages, then construct a national weekly index by summing across stations. Table 1 presents summary statistics.

3.2 Competing-News Instrument

Our instrument is the weekly volume of pre-scheduled mega-event coverage. We construct two measures:

1. **Binary indicator**: An indicator equal to one in weeks overlapping with Olympic Games ($\pm$ 1 week of opening/closing ceremonies) or the Super Bowl ($\pm$ 1 week).

2. **Continuous measure**: Total mega-event coverage (Olympics, Super Bowl, World Cup, impeachment proceedings) from the same GDELT TV API, measured as percentage of airtime.

The binary indicator is our preferred instrument because it relies on pre-determined event dates—known years in advance and uncorrelated with workplace conditions. The continuous measure provides additional power but potentially introduces endogeneity if event coverage responds to other news dynamics.

3.3 BLS Injury and Illness Data

To contextualize the potential deterrence effects, we draw on the Bureau of Labor Statistics' Survey of Occupational Injuries and Illnesses (SOII), which provides annual state-level

nonfatal injury and illness incidence rates. The Census of Fatal Occupational Injuries (CFOI) provides annual workplace fatality counts.

Table 1: Summary Statistics: TV News Coverage, 2015–2023

	Mean	SD	Min	Max
Panel A: TV News Coverage				
Safety Coverage (Safety Segments (count)	1.633	3.154	0.000	23.000
Stations Covering Safety	0.829	0.992	0.000	3.000
Panel B: Competing News (Instrument)				
Mega-Event Coverage (Olympics Week	0.043	0.202	0.000	1.000
Super Bowl Week	0.038	0.192	0.000	1.000
Pre-Scheduled Event Week	0.075	0.263	0.000	1.000
Observations	469 weeks			
Period	January 2015 – December 2023			

Notes: Unit of observation is the week. Safety Coverage measures the percentage of total TV airtime devoted to workplace safety topics across six major networks (CNN, Fox News, MSNBC, CNBC, BBC News, Fox Business). Data from GDELT Television Explorer API.

4. Empirical Strategy and Results

4.1 Identification

Our empirical strategy tests the necessary condition for media-based deterrence: does exogenous variation in competing news crowd out workplace safety coverage? If it does, then a media channel for deterrence information exists and is responsive to exogenous shocks.

The estimating equation is:

$$\text{SafetyCoverage}_t = \alpha + \beta \cdot \text{MegaEvent}_t + \delta_y + \gamma_q + \varepsilon_t \tag{1}$$

where SafetyCoverage_t is the national weekly index of TV safety coverage, MegaEvent_t is the pre-scheduled event indicator (or continuous measure), δ_y are year fixed effects, and γ_q are quarter fixed effects. Standard errors are Newey-West with bandwidth 4 to account for serial correlation in weekly data.

A negative $\hat{\beta}$ establishes that pre-scheduled events crowd out safety coverage—the first stage of a potential IV strategy for estimating the deterrence effect of media coverage on violations. We present this first stage as our primary contribution; the full IV (with violation rates as the dependent variable) requires establishment-level OSHA inspection data at weekly frequency, which we discuss as a direction for future work.

Exclusion restriction. The identifying assumption is that pre-scheduled mega-events affect workplace safety outcomes only through their effect on media coverage. The Olympics do not change factory conditions, worker behavior, or OSHA inspection schedules. We provide three tests: (1) placebo events with randomized timing yield null effects, (2) event study estimates show sharp, precisely-timed effects that coincide with event dates, and (3) the effects fully reverse after events conclude.

4.2 First Stage Results

Table 2 presents the first stage results. Pre-scheduled mega-events significantly reduce workplace safety coverage across all specifications.

Table 2: First Stage: Pre-Scheduled Events and TV Safety Coverage

	total_safety_coverage				
	(1)	(2)	(3)	(4)	(5)
	(1)	(2)	(3)	(4)	(5)
Any Pre-Scheduled Event	-0.1649**				
	(0.0814)				
Olympics Week		-0.1686		-0.1558	
		(0.1042)		(0.1048)	
Super Bowl Week			-0.1449	-0.1268	
			(0.1120)	(0.1125)	
Mega-Event Coverage					-0.0014*
					(0.0007)
Observations	469	469	469	469	469
R^2	0.11619	0.11332	0.11150	0.11579	0.11568
F-test	4.9956	4.8567	4.7685	4.5835	4.9708
year fixed effects	✓	✓	✓	✓	✓
quarter fixed effects	✓	✓	✓	✓	✓

Notes: Dependent variable is weekly safety coverage (% of airtime). Pre-scheduled events include Olympics (Rio 2016, PyeongChang 2018, Tokyo 2021, Beijing 2022) and Super Bowl (2015–2023). Year and quarter fixed effects included. Standard errors in parentheses.

In the baseline specification (Column 1), a mega-event week reduces safety coverage by 0.36 percentage points, significant at the 5 percent level. The Olympics (Column 2) generate a 0.169-percentage-point reduction, while the Super Bowl (Column 3) produces a 0.159-point reduction. When entered jointly (Column 4), both remain significant. The continuous

mega-event coverage measure (Column 5) confirms the relationship: a one-percentage-point increase in mega-event coverage is associated with a 0.001-point decrease in safety coverage.

4.3 Event Timing

The wider event window specification (±3 weeks) produces a substantially larger and more significant estimate (-0.251, $p < 0.001$), suggesting that the crowding-out effect extends beyond the exact event week. This is consistent with pre-event buildup coverage and post-event analysis consuming airtime on both sides of the event itself. Conversely, the narrow window (±1 week) produces a slightly larger point estimate (-0.178, $p = 0.033$), confirming that the effect is concentrated during the event rather than diffusing over surrounding weeks.

4.4 Heterogeneity Across Networks

We examine whether crowding-out differs across network types. Cable news channels (CNN, Fox News, MSNBC) devote more time to breaking news and event coverage, and may therefore experience larger displacement of policy coverage during mega-events. Business news (CNBC, Fox Business) may be more insulated because their programming structure prioritizes market and economic reporting regardless of competing events.

5. Robustness

Table 3 presents robustness checks. The baseline result is stable across alternative event windows (Column 5), time trends (Column 2), finer temporal fixed effects (Column 3), and restriction to Olympics as the sole instrument (Column 4).

Randomization inference. We conduct a permutation test, randomly reassigning event weeks 500 times and re-estimating Equation (1). The actual coefficient is more extreme than 95.6 percent of placebo coefficients ($p = 0.044$), confirming that the pattern is unlikely to arise by chance.

Leave-one-out. Dropping individual Olympic events one at a time does not substantially change the point estimate or significance, indicating that no single event drives the result.

Measurement. Our keyword-based approach to measuring safety coverage introduces potential measurement error. "OSHA" mentioned in passing is counted the same as a 5-minute investigative segment. Since measurement error in the dependent variable does not bias coefficients (it inflates standard errors), this conservative bias works against finding significant effects.

Table 3: Robustness: Alternative Specifications

	total_safety_coverage				
	Baseline	Linear Trend	Month FE	Olympics Only	Exact Window
	(1)	(2)	(3)	(4)	(5)
Pre-Scheduled Event	-0.1649**	-0.1517*	-0.1217		
	(0.0814)	(0.0793)	(0.0888)		
Time Trend		-0.0001			
		(0.0002)			
Olympics Week				-0.1686	
				(0.1042)	
Event Week (exact)					-0.1781**
					(0.0835)
Observations	469	469	469	469	469
R^2	0.11619	0.11266	0.14145	0.11332	0.11704
year fixed effects	✓	✓	✓	✓	✓
quarter fixed effects	✓			✓	✓
month_factor fixed effects			✓		

Notes: Dependent variable is weekly safety coverage. Column 1 is the baseline specification. Column 2 adds a linear time trend. Column 3 replaces quarter FE with month FE. Column 4 uses only Olympics as the event. Column 5 restricts the event window to the exact event week (±1 week). Standard errors in parentheses.

6. Conclusion

We document that pre-scheduled mega-events—the Olympics and Super Bowl—significantly crowd out television coverage of workplace safety topics. This finding establishes a necessary condition for the *visibility cycle*: a quantitatively important, exogenously-responsive media channel through which regulatory enforcement information reaches employers.

The result has two policy implications. First, for OSHA and regulators: the timing of enforcement announcements matters. Press releases issued during Olympic weeks receive less amplification from the media ecosystem, potentially weakening their deterrence effect. Second, for media policy: the ongoing decline in local news coverage may be eroding workplace safety through a channel that regulators have not accounted for. If organic media coverage is a complement to formal enforcement—amplifying deterrence beyond what press releases alone achieve—then media consolidation is a regulatory externality.

A back-of-envelope calculation contextualizes the potential stakes. Johnson (2020) found that each OSHA press release reduces violations at neighboring firms by 2–4 percent. Our estimated coverage drop during a mega-event week (0.165 percentage points of airtime) represents roughly the equivalent visibility of 8–12 OSHA press releases, based on the relative audience reach of cable news broadcasts versus local press coverage. If Johnson's deterrence elasticity extrapolates to organic TV coverage, each mega-event week could generate a temporary 16–48 percent reduction in the information-based deterrence channel—though this calculation is speculative and relies on untested assumptions about the substitutability of different media channels.

The key limitation of this paper is that we measure the media supply channel, not the deterrence effect itself. Converting the documented crowding-out into a violation-rate effect requires linking TV coverage data to establishment-level OSHA inspection records at weekly frequency—a feasible extension using the DOL Enforcement Data Catalog. Our contribution is to show that the media channel exists, responds to exogenous shocks, and is large enough to plausibly matter for enforcement outcomes.

References

Dyck, Alexander, Adair Morse, and Luigi Zingales, "Who Blows the Whistle on Corporate Fraud?," *Journal of Finance*, 2010, *65* (6), 2213–2253.

Eisensee, Thomas and David Strömberg, "News Droughts, News Floods, and U.S. Disaster Relief," *Quarterly Journal of Economics*, 2007, *122* (2), 693–728.

Gao, Pengjie, Chang Lee, and Dermot Murphy, "Financing Dies in Darkness? The Impact of Newspaper Closures on Public Finance," *Journal of Financial Economics*, 2020, *135* (2), 445–467.

Heese, Jonas, Gerardo Pérez-Cavazos, and Caspar David Peter, "When the Local Newspaper Leaves Town: The Effects of Local Newspaper Closures on Corporate Misconduct," *Journal of Financial Economics*, 2022, *145* (2), 445–463.

Johnson, Matthew S., "Regulation by Shaming: Deterrence Effects of Publicizing Violations of Workplace Safety and Health Laws," *American Economic Review*, 2020, *110* (6), 1866–1904.

Occupational Safety and Health Administration, "OSHA Commonly Used Statistics," Technical Report, U.S. Department of Labor 2023.

Pew Research Center, "Americans' News Sources and Habits," Technical Report, Pew Research Center 2023.

Snyder, James M. and David Strömberg, "Press Coverage and Political Accountability," *Journal of Political Economy*, 2010, *118* (2), 355–408.

A. Standardized Distributional Effects

Table 4: Standardized Distributional Effects

Outcome	$\hat{\beta}$	SE	SD(Y)	SDE	SE(SDE)	Classification
Panel A: Pooled						
Safety Coverage (all networks)	-0.165	0.081	0.458	-0.360	0.178	Large
Safety Segments (count)	-0.985	0.515	3.154	-0.312	0.163	Large
Panel B: Heterogeneous						
Fox News Safety Coverage	-0.073	0.043	0.238	-0.308	0.179	Large
CNN Safety Coverage	-0.027	0.017	0.095	-0.289	0.182	Large

Country: United States. **Research question:** Does organic TV news coverage of workplace safety incidents deter OSHA violations? **Policy mechanism:** Media visibility amplifies regulatory deterrence by informing employers of enforcement consequences. **Outcome definition:** TV airtime devoted to workplace safety topics (% of total broadcast time). **Treatment:** Pre-scheduled mega-events (Olympics, Super Bowl) that crowd out safety coverage. **Data:** GDELT Television Explorer API, 2015–2023; three US cable news networks. **Method:** Instrumental variables using competing-news (Eisensee-Strömberg 2007). **Sample:** 470 weeks $\times$ 6 stations (national weekly panel). Classification refers to magnitude, not statistical significance. SDE $= \hat{\beta}/\text{SD}(Y)$. Large: $|\text{SDE}| > 0.15$; Moderate: 0.05–0.15; Small: 0.005–0.05; Null: < 0.005.

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