

S7 File: Visualization Gallery

Media Coverage Differentials and Democratic Decline: A Comprehensive Analysis of Domestic versus International Coverage Patterns of US Institutional Health During Trump's Second Term (2025)

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Overview

This supplementary file contains all figures from the main manuscript with expanded captions, detailed methodology notes, and technical specifications. Each visualization represents a critical component of the analysis demonstrating systematic differences in media coverage patterns and their relationship to democratic institutional health.

Figure 1: Coverage by Outlet Category (Bar Chart)

Caption: Mean weekly democracy-critical headlines by outlet category during the first 39 weeks of 2025, showing the 43% differential between international and Tier 1 domestic coverage.

Key Features:

- **Data Source:** 2,247 manually validated headlines from 45 outlets
- **Statistical Test:** One-way ANOVA: $F(4,165) = 187.3$, $p < 0.001$, $\eta^2 = 0.82$
- **Error Bars:** 95% confidence intervals calculated using bootstrap methods (10,000 iterations)
- **Color Coding:** Each outlet category assigned distinct color for visual differentiation
- **Highlight:** Red bracket annotation showing 43% international-domestic differential

Methodology Notes:

- Headlines collected using systematic search protocols
- Weighted by composite credibility scores
- All pairwise comparisons significant at $p < 0.001$ after Bonferroni correction
- Effect size ($\eta^2 = 0.82$) indicates very large practical significance

Interpretation:

The substantial coverage differential between international (26.8 headlines/week) and Tier 1 domestic outlets (18.7 headlines/week) supports the primary hypothesis that external media perspectives provide enhanced monitoring of democratic institutional stress.

Figure 2: Time Series Trends (Line Graph)

Caption: Weekly coverage patterns across 39 weeks (January 20 - September 30, 2025) with LOESS smoothing overlay, demonstrating consistent elevation without acceleration.

Key Features:

- **Raw Data:** Transparent lines showing week-to-week variation
- **Smoothing:** LOESS regression with bandwidth = 0.2
- **Event Markers:** Gray vertical lines indicating major news events
- **Five Categories:** Separate trend lines for each outlet type
- **Time Period:** Complete 39-week study period

Methodology Notes:

- Smoothing parameters selected via cross-validation
- Autocorrelation function (ACF) showed no significant temporal dependency
- Durbin-Watson test = 1.97 (no autocorrelation)
- Peak weeks identified through residual analysis exceeding 2 SD

Interpretation:

Coverage remains elevated throughout the period without significant acceleration, suggesting sustained rather than escalating concern. Event-driven spikes demonstrate media responsiveness to specific incidents while baseline coverage remains stable.

Figure 3: Category Distribution (Stacked Bar Chart)

Caption: Percentage distribution of democracy-critical categories (A: Constitutional violations, B: Authoritarian actions, C: Corruption/ethics, D: Violent rhetoric) across outlet types.

Key Features:

- **Four Categories:** Color-coded by severity (dark red to light green)

- **Percentage Labels:** Displayed for segments >5%
- **Statistical Test:** $\chi^2(12) = 67.3$, $p < 0.001$, Cramér's $V = 0.39$
- **100% Stacked:** Shows relative emphasis differences
- **N = 2,247 Headlines:** Full dataset classification

Methodology Notes:

- Classification protocol achieved $\kappa = 0.847$ inter-rater reliability
- 100% manual validation of AI-assisted classification
- Chi-square test confirms significant distributional differences
- Cramér's V indicates moderate-to-large effect size

Interpretation:

Liberal and international outlets show greater emphasis on Category A (constitutional violations), while conservative outlets focus more on Categories C and D (corruption and violent rhetoric), revealing systematic framing differences across the media ecosystem.

Figure 4: First Term vs Second Term (Grouped Bar Chart)

Caption: Direct comparison of coverage intensity between Trump's first term (2017-2021) and second term (2025), demonstrating 264-371% increases across all outlet categories.

Key Features:

- **Paired Comparisons:** Side-by-side bars for each outlet category
- **Percentage Annotations:** Exact increase percentages displayed
- **Historical Baseline:** First term data from comparable 39-week period
- **Statistical Validation:** All increases significant at $p < 0.001$
- **Consistent Pattern:** Similar increases across diverse outlet types

Methodology Notes:

- First term data: 260 weeks, 1,847 headlines
- Second term data: 39 weeks, 2,247 headlines
- Paired t-tests with Bonferroni correction
- Data normalized to weekly rates for comparison

Interpretation:

The 3-4x increase in coverage intensity across all outlet categories suggests heightened media concern about democratic norms in the second term, validating the acceleration hypothesis while showing consistency across the media spectrum.

Figure 5: Democracy Index Correlations (Scatter Plot)

Caption: Relationship between annual mean coverage frequency and democracy scores from three major indices (V-Dem, Freedom House, EIU), showing moderate negative correlations.

Key Features:

- **Three Panels:** Separate analysis for each democracy index
- **Regression Lines:** Linear fit with 95% confidence bands
- **Correlation Coefficients:** $r = -0.51$ (mean across indices)
- **Year Labels:** 2017-2025 trajectory visible
- **Combined Summary:** Meta-analytic integration in fourth panel

Methodology Notes:

- Annual aggregation of weekly coverage data
- Democracy scores standardized to 2017 baseline
- Pearson correlations with significance testing
- Sensitivity analysis using Spearman rank correlations

Interpretation:

Moderate negative correlations (increased coverage as democracy scores decline) provide external validation of the coverage differential hypothesis, though causality cannot be established from correlational data.

Figure 6: Pairwise Effect Sizes (Heatmap)

Caption: Cohen's d effect sizes for all pairwise comparisons between outlet categories, demonstrating large effects for most contrasts.

Key Features:

- **Heat Map:** Color gradient from blue (negative) to red (positive)
- **Effect Size Values:** Displayed in each cell
- **Significance Stars:** *** indicates $|d| > 0.8$ (large effect)
- **Lower Triangle:** Matrix design avoiding redundancy
- **Interpretation Guide:** Effect size benchmarks provided

Methodology Notes:

- Cohen's $d = (M_1 - M_2) / SD_{pooled}$
- All comparisons significant after Bonferroni correction
- Effect sizes range from 0.24 to 2.89
- Pooled standard deviation accounts for unequal variances

Interpretation:

Large effect sizes ($|d| > 0.8$) for most comparisons confirm substantial and practically significant differences in coverage patterns, with the largest effects between Conservative and Liberal outlets ($d = 2.89$).

Figure 7: Robustness Test Summary (Forest Plot)

Caption: Effect sizes across 47 distinct robustness tests, demonstrating stability of findings across alternative analytical approaches.

Key Features:

- **47 Tests:** Comprehensive sensitivity analysis
- **Confidence Intervals:** 95% CI for each test
- **Main Effect:** Red highlighting for primary analysis
- **Meta-Summary:** Combined effect at bottom
- **Null Line:** Vertical reference at $\eta^2 = 0$

Methodology Notes:

- Alternative specifications include:
 - Different classification criteria
 - Various weighting schemes
 - Temporal subanalyses
 - Transformation approaches
 - Resampling methods
- Random effects meta-analysis for summary
- All tests maintain $p < 0.001$ significance

Interpretation:

Remarkable consistency across 47 robustness tests (mean $\eta^2 = 0.80$, $SD = 0.03$) demonstrates that findings are not artifacts of analytical choices, providing strong evidence for the reliability of the coverage differential phenomenon.

Figure 8: Monte Carlo Projections (Line Graph with Uncertainty)

Caption: Democracy score projections through 2035 based on 1,000 Monte Carlo simulations, showing potential threshold crossover between 2027-2030.

Key Features:

- **Two Panels:** V-Dem and Freedom House projections
- **Uncertainty Bands:** 90% confidence intervals from simulations
- **Historical Data:** 2017-2025 actual scores for context
- **Threshold Lines:** Democracy/autocracy boundaries
- **Crossover Points:** Highlighted with annotations

Methodology Notes:

- 1,000 Monte Carlo simulations per index
- Stochastic drift parameters from historical variance
- Random walk components for uncertainty
- Corrected acceleration parameters implemented
- Conservative scenario assumptions

Interpretation:

Projections suggest potential democratic threshold crossover between 2027-2030, though wide confidence bands reflect substantial uncertainty. These timelines assume continuation of current trajectories without institutional intervention or corrective measures.

Technical Specifications

Software and Packages:

- **Python 3.9.15** with NumPy 1.23.5, Pandas 1.5.3, Matplotlib 3.6.3, Seaborn 0.12.2
- **R 4.3.1** for statistical validation
- **Bootstrap:** 10,000 iterations for all confidence intervals
- **Random Seed:** 42 for reproducibility

Data Availability:

All raw data, processing scripts, and high-resolution figures are available at:

- GitHub: <https://github.com/rrobbyymiller/media-coverage-democracy>
- OSF: [https://osf.io/\[pending\]](https://osf.io/[pending])
- Figshare: [https://figshare.com/\[pending\]](https://figshare.com/[pending])

Color Accessibility:

All figures use colorblind-friendly palettes verified through Coblis simulator. High-contrast versions available upon request.

Resolution:

All figures exported at 300 DPI for publication quality. Vector formats (SVG) available for journal production.

Summary

This visualization gallery provides comprehensive graphical evidence supporting the manuscript's primary findings:

1. **Significant coverage differentials** exist between outlet categories (Figure 1)
2. **Temporal patterns** show sustained elevation without acceleration (Figure 2)
3. **Category distributions** reveal systematic framing differences (Figure 3)
4. **Historical comparison** demonstrates dramatic intensification (Figure 4)
5. **Democracy correlations** provide external validation (Figure 5)
6. **Large effect sizes** confirm practical significance (Figure 6)
7. **Robustness tests** establish analytical reliability (Figure 7)
8. **Future projections** indicate critical timeline windows (Figure 8)

Together, these visualizations support the conclusion that media coverage differentials serve as valuable supplementary indicators of democratic institutional stress, with implications for both monitoring and intervention strategies.

Citation

If using these visualizations, please cite:

Miller, R. (2025). Media Coverage Differentials and Democratic Decline: A Comprehensive Analysis of Domestic versus International Coverage Patterns of US Institutional Health During Trump's Second Term (2025). *Frontiers in Political Science*, [pending].

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