Framing Democracy:

Identifying Autocratic Anti-Democratic Propaganda Using Word Embeddings

Patrick Chester

New York University

Introduction

There is substantial empirical evidence that indicates that democracy can spread between countries through observational learning (1). But do autocracies try to bias learning against democratic institutions through the use of targeted media framing?

In this paper, I argue autocracies frame democratic institutions as being chaotic in their news media relative to non-democracies and relative to non-autocratic media's coverage of those same countries. To empirically test this hypothesis, I use word embeddings to identify the average cosine similarity between words associated with political institutions and adjectives that carry the meaning of "chaos" or "corruption".

I find that as countries become more democratic, that China's state media frames their politics as being more chaotic. However, they do not portray them as being more corrupt. This paper contributes to the literature on measuring framing and propaganda in text data, as well as improving our understanding of how authoritarian regimes manipulate the content of news media.

Theory

I argue that by manipulating the content of foreign news coverage, that authoritarian regimes may influence how favorably their citizens perceive democratic institutions and therefore their willingness to overthrow the status quo regime. China, in particular, has a strong long history of using propaganda to manipulate public opinion.

But what frames might China use to manipulate perceptions of democracy? Many Chinese citizens are wary of political and social instability and are more satisfied with the political status quo if they observe political instability abroad (2). Therefore, I hypothesize the following:

> *China's state media (Xinhua) will frame the politics of democratic countries as being more chaotic than those of non-democracies relative to another media outlet without the same political objectives (Central News Agency)*

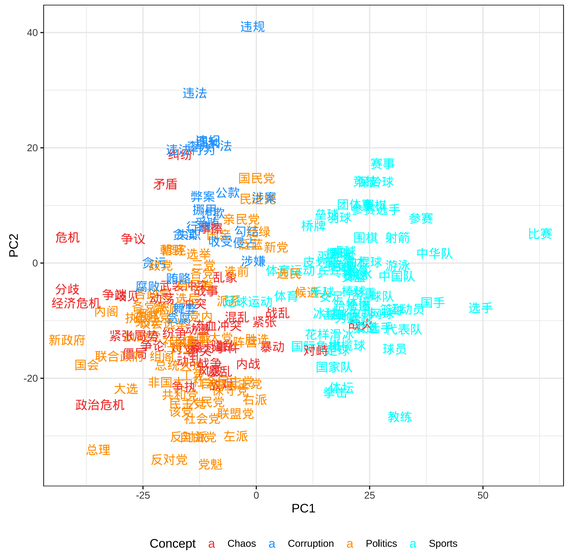

Figure 1:Principal Components for Keyword Clusters

Methods

Measuring propaganda effect

The following approach to measure a *propaganda effect* builds upon word done by Garg et al (2018):

1. Fit skip gram word embeddings model, as implemented in the `Gensim` package in Python 3.7.6, on a combined Xinhua and CNA corpus
2. Estimate a cosine similarity matrix between the top 10,000 features
3. Create dictionaries for "politics", "sports", "corruption", and "chaos" using seed words and `conclust` algorithm.
4. Divide Xinhua and CNA corpora into subcorpora by country, using a dictionary of country names
5. Fit skip gram word embedding models on each country-publication subcorpora
6. For each attitude object, attribute pair (such as [politics, corruption]) estimate matrix $\mathbf{A}$ where each element $\mathbf{A}_{ij} = similarity(o_i, a_j)$
7. Estimate the average cosine similarity across each attitude object and attribute pair matrix: $\frac{\sum_{i,j}^{N} \mathbf{A}}{N}$

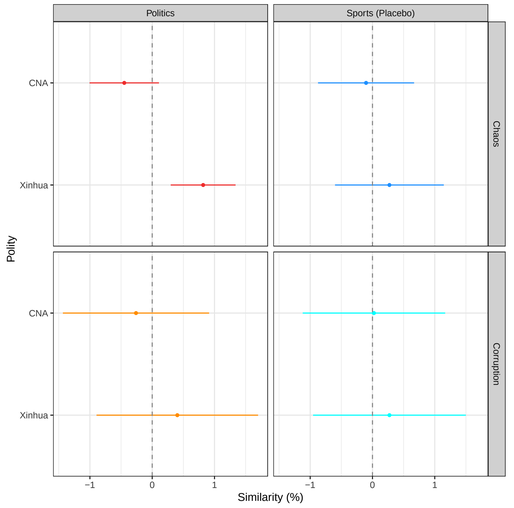

Figure 2:Coefficients with 95% CI For Each Attitude Object-Attribute Pair

Estimation and Results

To test my main hypothesis, I estimate the following model:

$$Y_{ip} = \alpha + \beta_1 G_i P_p + \beta_2 G_i + \beta_3 P_p + P_p \times \beta X_{ip} + \gamma_i \quad (1)$$

Where Y_{ip} is the average similarity between an attitude object and attribute pair for a particular country-publication, G_i is the mean Polity IV score of country, P_p is an indicator variable for Xinhua news, and X_{ip} is a battery country and model control variables, including the number of articles, tokens, etc included in each publication-country word embedding model and country-level variables, such as population, and GDPPC. Fixed effects for countries and publication are included and standard errors are clustered at the country level.

I find that Xinhua portrays democratic politics as more chaotic ($p < 0.01$), but not more corrupt relative to CNA's coverage (see Figure 2). This effect is robust to the use of other measures of democracy, alternative specifications for attitude object and attribute similarity, and a placebo attitude object: sports.

Conclusion

In this paper, I propose a new methodology that uses word embeddings to systematically build thematic dictionaries and estimate framing and propaganda effects using text data. I find that Chinese state media frames the politics of democratic countries as more chaotic, relative to a baseline media source that has no incentive to produce anti-democratic propaganda. This discrepancy in coverage may help explain why 60% of Chinese citizens believe that adopting multi-party democracy in China would make Chinese politics more chaotic (4). More research is needed to determine whether the consumption of propagandized media, such as Xinhua, leads citizens of autocracies to become more satisfied with the political status-quo.

References

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Acknowledgements

I would like to thank David Stasavage and Arthur Spirling for their comments that have contributed to improving this paper.

Contact Information

- Email: patrick.chester@nyu.edu
- Phone: +1 (858) 373 7641