

Ties That Talk: A Text-as-Data Approach to the Strategic Performance of Interstate Relations in National Security Strategies (NSS)

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Motivation

WHITE BOOK 2013

THE ARMED FORCES OF UKRAINE

INTERNATIONAL COOPERATION

In the frameworks of the National Security and Defence Policy implementation the main efforts of international cooperation were focused on the following tasks:

- extending the active military and political dialogue with EU military authorities, participating in improvement and development of European System of Common Security;
- developing a strategic partnership with the Russian Federation, the United States of America and the People's Republic of China on the basis of effective and mutually beneficial cooperation;
- extending constructive partnership on mutually beneficial issues with NATO and other international security organizations;
- maintaining a dialogue with key Ukrainian partners, neighbor countries and other world leading states;
- activation of military and political dialogue with countries of Caucasian and Asian Pacific Regions, Latin America and Africa aimed at promoting Ukraine's interests.

572 out of 1227 planned events on international cooperation were arranged and implemented (figure 7.1) in 2013.

Motivation

WHITE BOOK 2015

THE ARMED FORCES OF UKRAINE

The National Security Strategy of Ukraine, a new edition of the Military Doctrine of Ukraine and the Concept for the Development of the Security and Defense Sector of Ukraine have been approved according to the results of the comprehensive review of the security and defense sector. For the first time in history, Ukraine has determined the course towards European integration and intentions to join NATO. The Russian Federation was determined as the main threat and military adversary.

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Cooperation with the United States in the defense sphere changed from the crisis response policy to the stable long-term strategic partnership. The new format of cooperation was discussed during the Ministry of Defense of Ukraine visit to the USA in September 2015. Based on these results the Ministry of Defense of Ukraine together with the American side began to develop "The Concept of partnership development between the Ministry of Defense of Ukraine and the Department of Defense of the United States of America for the term of 5 years.", which is directed towards improvement of

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Motivation

The New York Times
*Biden's National Security Strategy
Focuses on China, Russia and
Democracy at Home*

TURKISH MINUTE
**UK names Turkey a 'key partner' in new 2025
security strategy**



Ministry of Foreign Affairs
REPUBLIC OF KOREA

MOFA Spokesperson's Commentary on "Defense of Japan 2022"

Date : 2022-07-22 | hit : 15599

Problem

Data:

- Corpora are non-standardized, non-replicable, and limited in scope
(Razeto and Jenne 2021, Neal and Gardner 2025)

Measurement:

- Existing work analyzes topics rather than actors/relationships and without accounting for context (Becker and Malesky 2017)

Solution

Data:

- Build standardized, machine-readable, publicly available corpus of NSS documents

Measurement:

- Develop novel text-based measures of expressed salience and affinity

What we know about interstate relations

Spatial utility model of foreign policy ideal points (Morrow 1986):

1. Relevance:

- Geography (Weede 1976, Gleditsch and Ward 2001)
- Power (Organski and Kugler 1980, Singer 1988, Maoz 2006)

2. Compatibility:

- Foreign policy similarity (Chiba et al 2015, Bailey et al 2017)
- Observed threats/partnerships (Leeds et al 2002, Diehl et al 2021, Thompson et al 2021)

Corpus: Process

1. Compile corpus of NSS documents
 - a. Existing corpora
 - b. Crawl government websites and think tank bibliographies
2. Subset to comparable English “whole-of-government” documents
3. Convert .pdf to .md using PyMuPDF4LLM (McKie 2024) and Marker (Paruchuri 2024)
4. Convert .md to .csv chunked using MPnet tokenizer (Song et al 2020)

Corpus: Result

Total NSS documents: **819**

Spatial scope: **112 countries**

Temporal scope: **1962-2024**

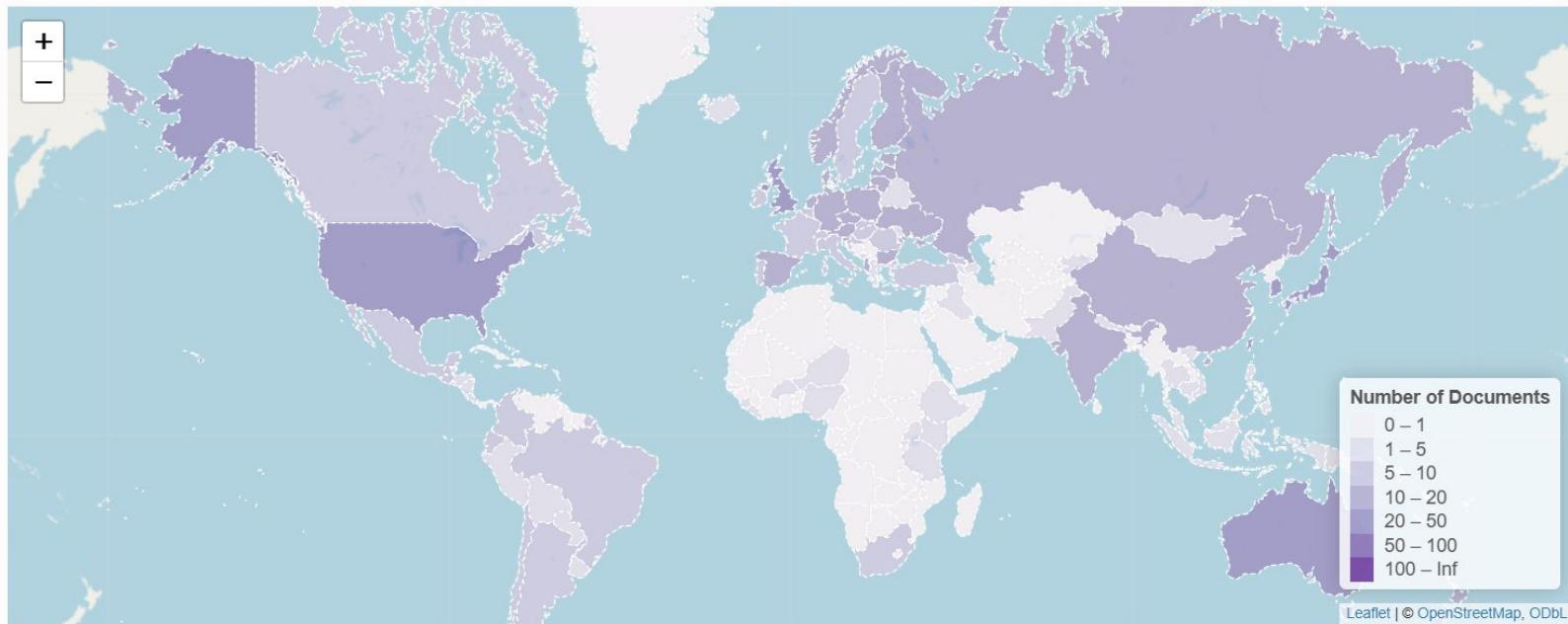
Subset of comparable documents: **432**

Pages of processed text: **75,205**

Military Doctrines Dataset

The Military Doctrines dataset is a catalog of 819 National Security Strategy (NSS) documents spanning 112 countries from 1962 to 2024. The data are sourced from government websites and other online repositories in their original pdf format and are organized into machine-readable text and csv format, which you can browse and download from this website.

The Military Doctrines project is led by [Andrés Gannon](#) of Vanderbilt University.



Measurement

Goal: Identify *who* states talk about and *how*

Innovation: Use states' own words and their context to measure social signals

Who states talk about

Process

1. COW State Membership list
2. Include aliases and synonyms (capital cities and demonymns) while excluding false positives
3. Prune chunks using spaCy sentence tokenizer (Montani et al 2023)

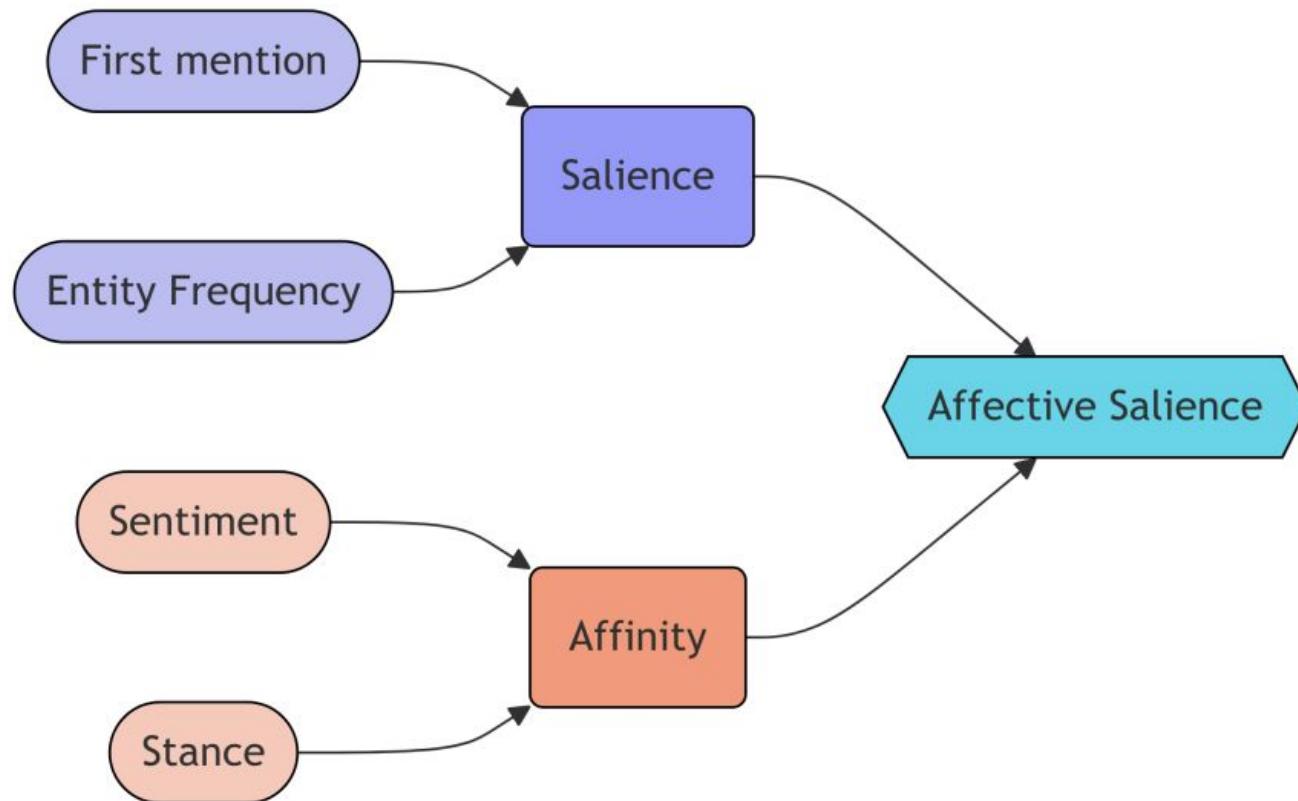
Product

- **Unit of analysis:** directed dyad-year chunk ($n = 241,857$)
- **Variables:** issuer, target, year, document, chunk number, chunk text

How states talk about them

1. **Salience**: prominence of a given entity within a specific context or communication
2. **Affinity**: evaluative orientation publicly expressed toward a given entity

How states talk about them



Measuring Salience

Definition: prominence of a given entity within a specific context or communication

Measurements (Dunietz and Gillick 2014; Wu et al. 2020):

First-mention + Entity-frequency = Salience

$$S_{\text{first}} = \frac{N - m_e + 1}{N} \quad S_{\text{freq}}(e) = \frac{f_e}{f_{\max}} \quad S_{\text{salience}} \in (0, 1]$$

$$\alpha S_{\text{first}} + (1 - \alpha) S_{\text{freq}} = S_{\text{salience}} \text{ where } \alpha = 0.5$$

Measuring Affinity

Definition: evaluative orientation publicly expressed toward a given entity

“The invasion of Ukraine is tragic.”

“The death and destruction in Ukraine is a unprecedented tragedy.”

“The death and destruction Russia has experienced in Ukraine is a unprecedented tragedy.”

Measuring Affinity

Challenges:

1. Orientation varies in degree
2. Emotional valence ≠ support, opposition, or indifference

Solution: measure both emotional valence (sentiment) and orientation toward specified entity (stance)

Measuring Affinity

1. Sentiment: evaluative orientation of language measured using lexicon and rule-based Valence Aware Dictionary and sEntiment Reasoner (VADER) (Hutto and Gilbert 2014)

“The invasion of Ukraine is tragic.” **Score: -0.46**

“The death and destruction in Ukraine is a unprecedented tragedy.”
Score: -0.92

“The death and destruction Russia has experienced in Ukraine is a unprecedented tragedy.” **Score: -0.92**

Measuring Affinity

2. Stance: natural language inference (NLI) few-shot classification model fine-tuning Political DEBATE LLM (AlDayel and Magdy 2021, Burnham 2024)

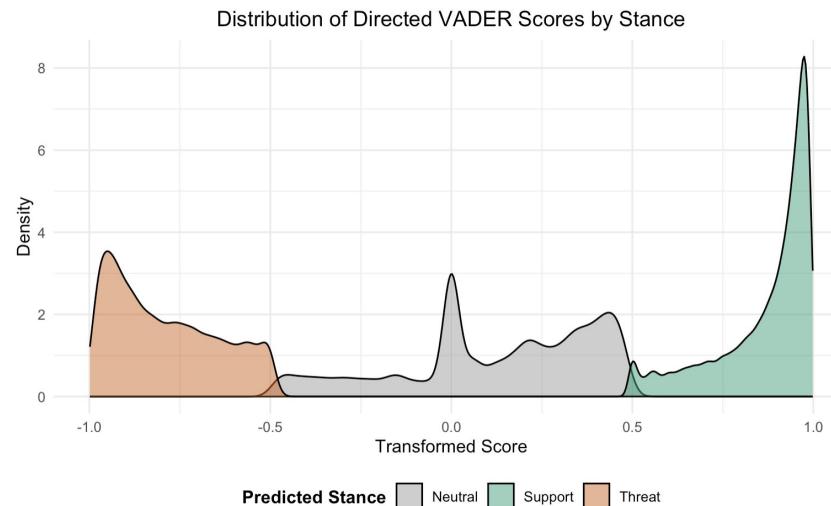
$Pr(x)$ a human reading text T would assume hypothesis H is true

- T = pruned NSS chunk
- H = {issuer} {views as threat, expresses support, neither} toward {target}
- $\text{Max}(Pr(x))$ stance score = $x \in \{-1, 0, 1\}$

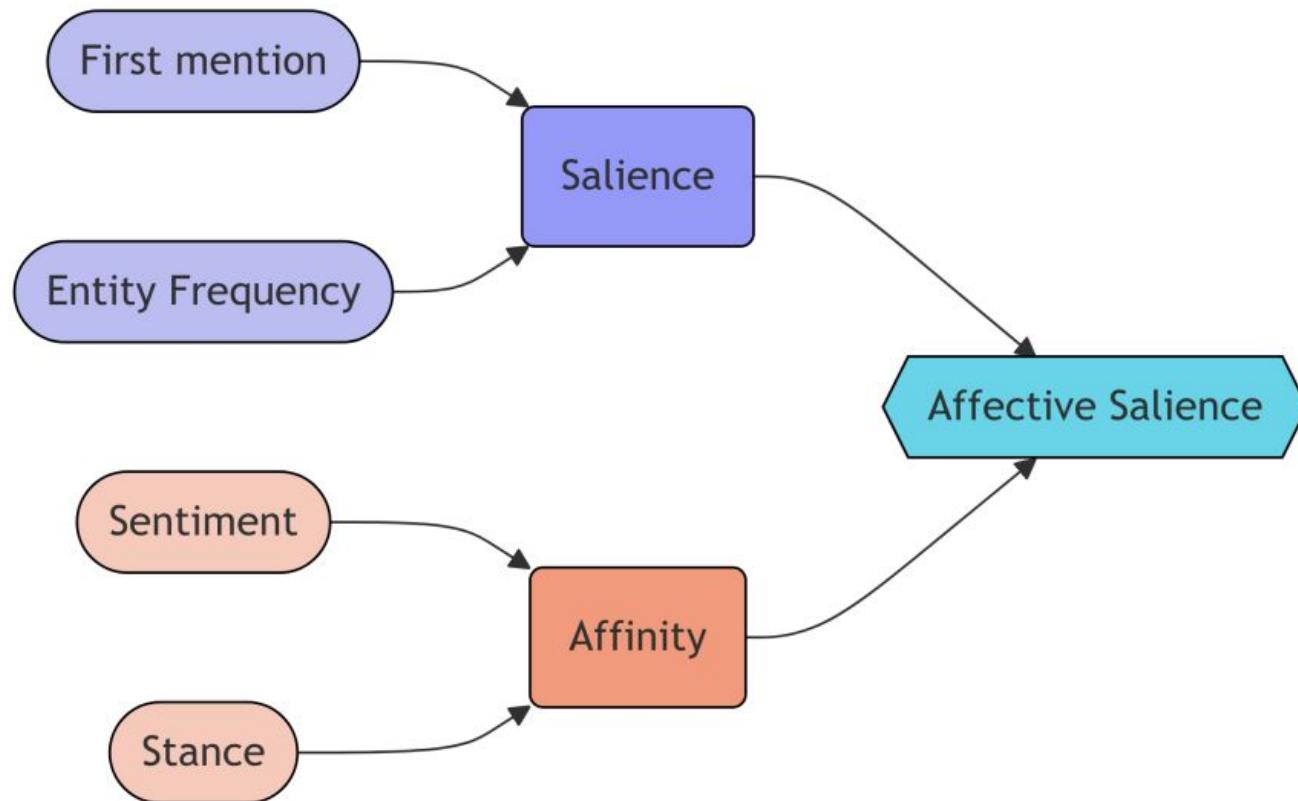
Measuring Affinity

3. Affinity combines sentiment and stance: multiply and scale for each directed-dyad chunk: $x \in [-1, -0.5], (-0.5, 0.5), [0.5, 1]$

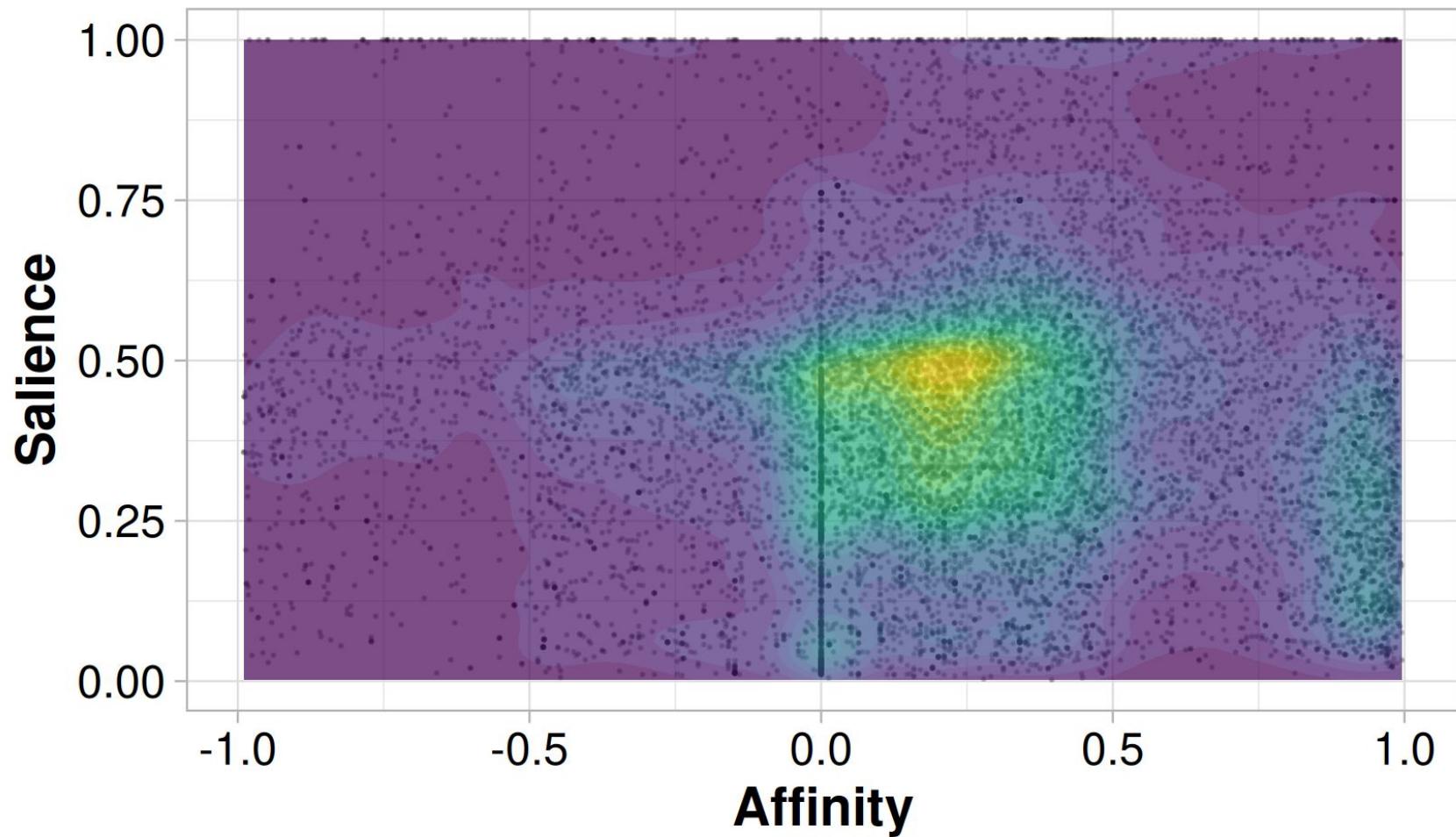
Average across chunks \Rightarrow directed-dyad year $x \in [-1, 1]$



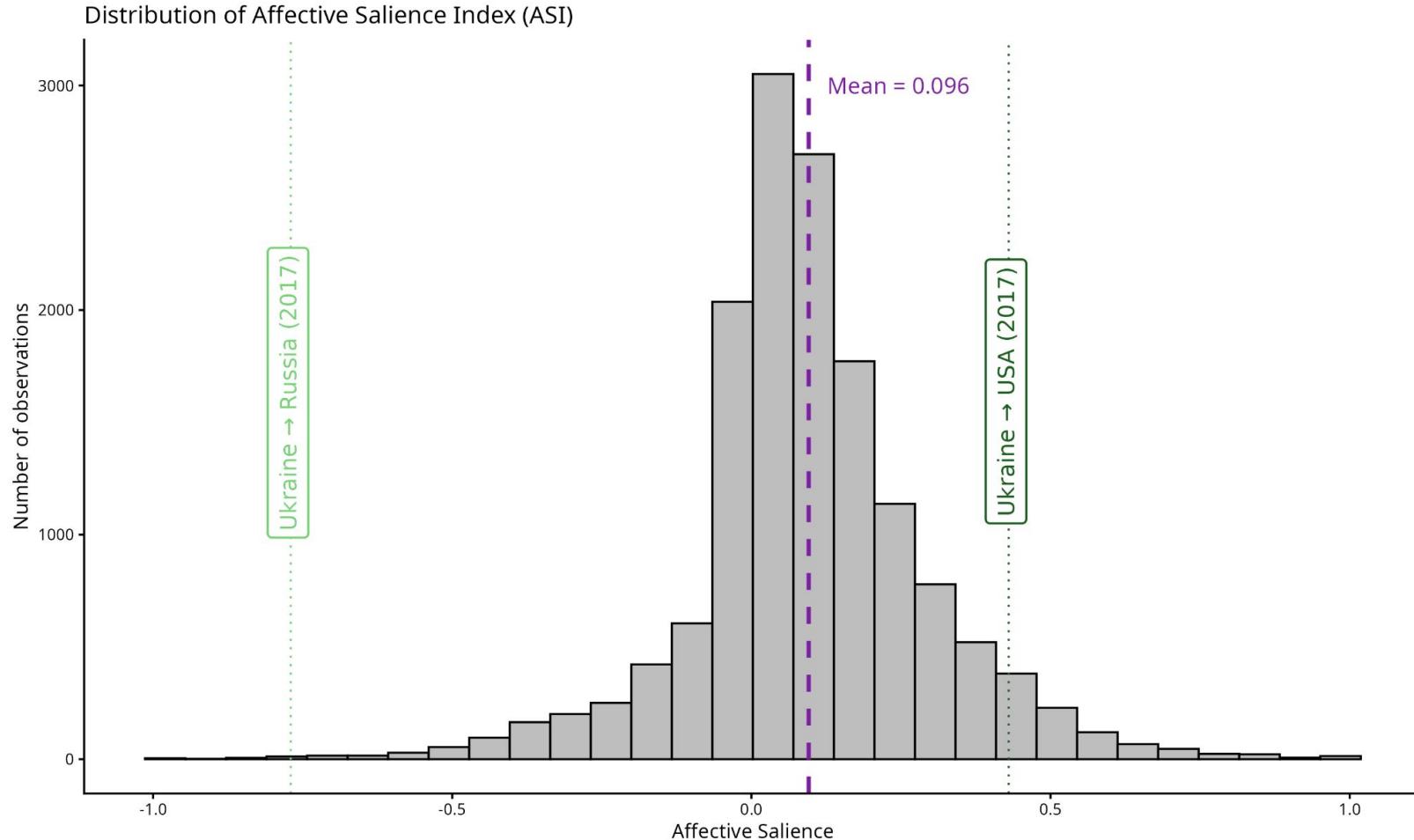
What we've done



Distribution of salience and affinity scores



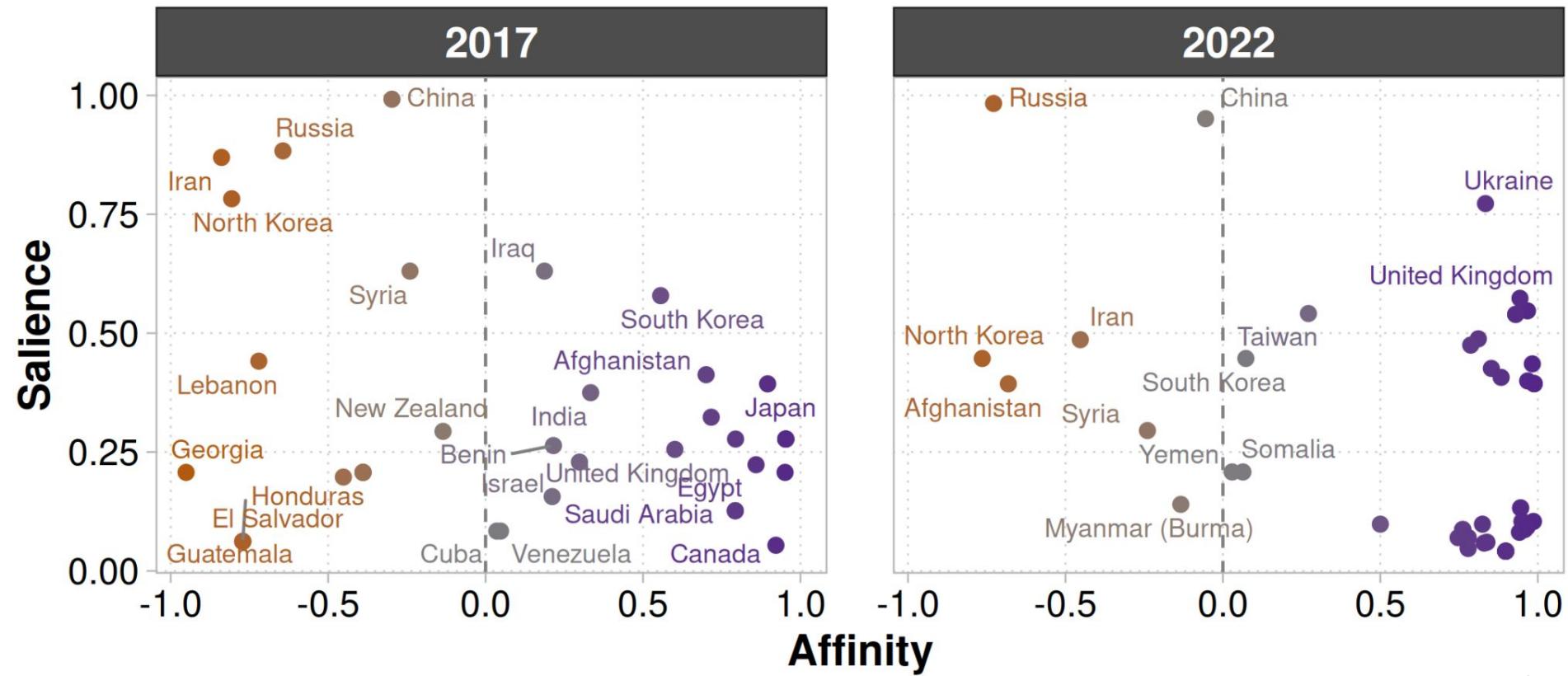
Final Measure : Affective Salience = $S_{\text{salience}} \times S_{\text{affinity}} \in [-1, 1]$



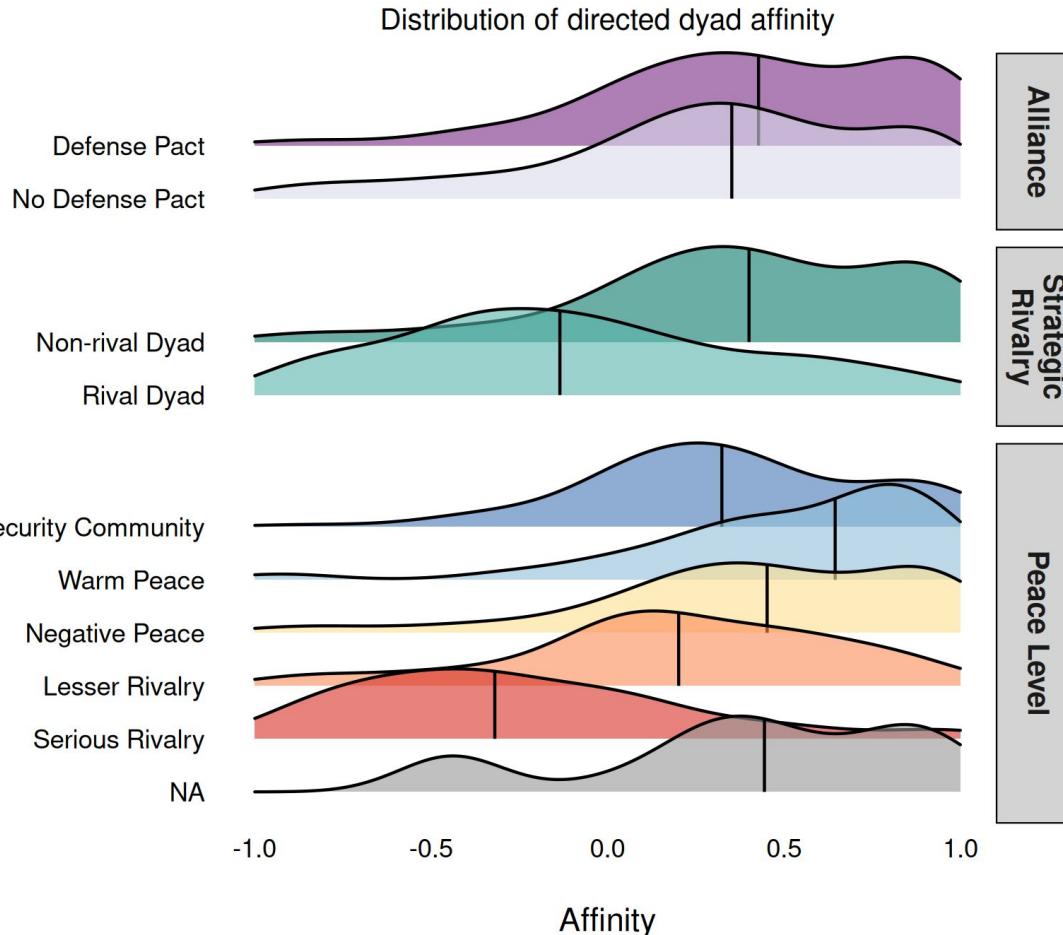
Face validity (Ukraine NSS, 2017)

| Target Country | Salience | | | Affinity | | | Affective Salience |
|----------------|---------------|------------------|----------|-----------|--------|----------|--------------------|
| | First Mention | Entity Frequency | Salience | Sentiment | Stance | Affinity | |
| Russia | 0.99 | 1.00 | 1.00 | -0.02 | -0.94 | -0.78 | -0.77 |
| Poland | 0.92 | 0.78 | 0.85 | 0.68 | 0.43 | 0.55 | 0.47 |
| United Kingdom | 0.97 | 0.61 | 0.79 | 0.70 | 0.36 | 0.53 | 0.42 |
| United States | 0.88 | 0.56 | 0.72 | 0.60 | 0.60 | 0.60 | 0.43 |
| Lithuania | 0.92 | 0.44 | 0.68 | 0.67 | 0.38 | 0.52 | 0.36 |
| Belarus | 1.00 | 0.28 | 0.64 | 0.51 | 0.40 | 0.45 | 0.29 |
| Germany | 0.77 | 0.44 | 0.61 | 0.31 | 0.50 | 0.40 | 0.25 |
| Norway | 0.86 | 0.33 | 0.60 | 0.88 | 0.83 | 0.86 | 0.51 |
| Denmark | 0.95 | 0.17 | 0.56 | 0.37 | 0.00 | 0.18 | 0.10 |
| Netherlands | 0.97 | 0.06 | 0.51 | 0.76 | 1.00 | 0.88 | 0.45 |

Face validity (U.S. NSS)



Face validity (Existing measures)



Model: ASI as a predictor for conflict and cooperation

Unit of analysis: Directed-dyad year

DV: crisis onset (Brecher and Wilkenfeld 1997) | diplomatic visits (Moyer et al 2025)

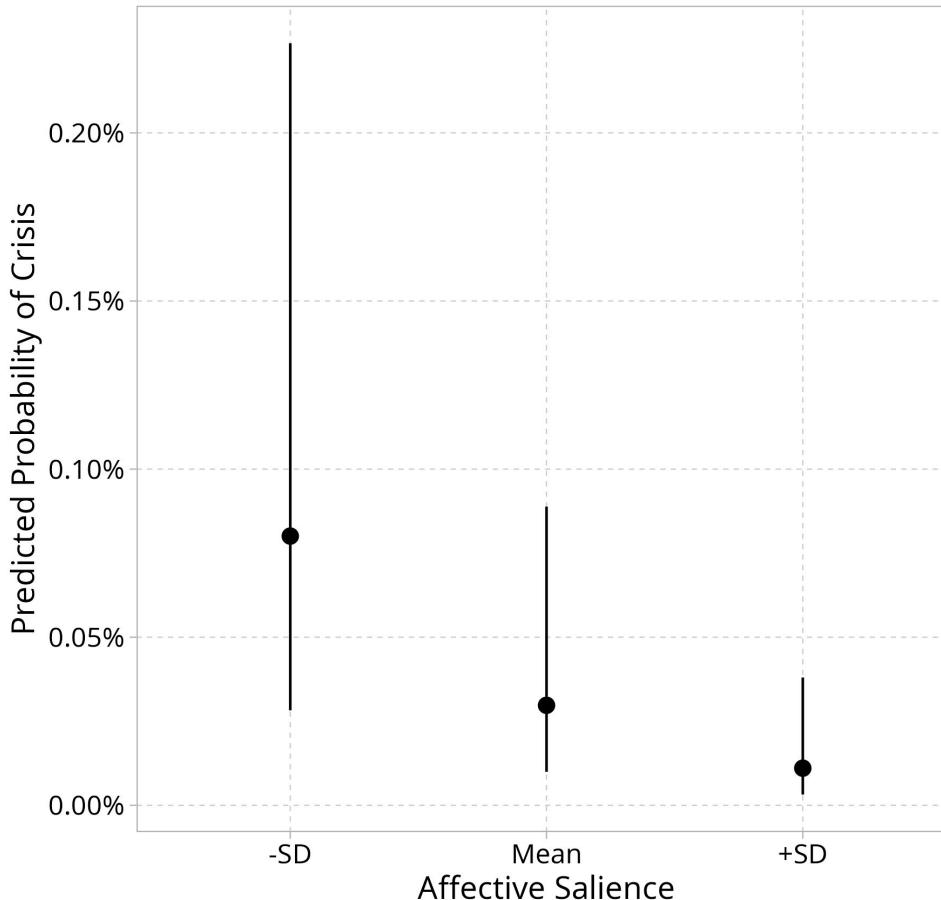
EV: Affective Salience Index

Controls: military power/great power, geographic distance, shared regime type

Evaluation Benchmark: alliance portfolio similarity and UN voting similarity

Result 1: ASI better predicts future crises

Conditional Predictions of Interstate Crisis Onset

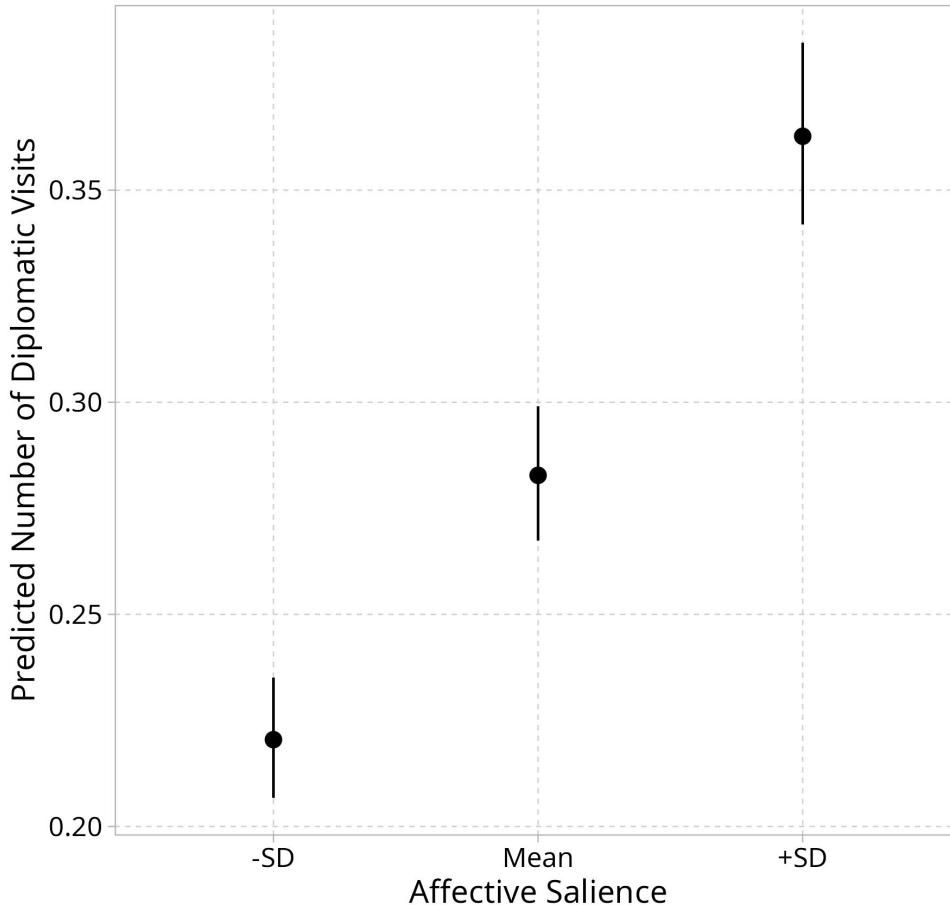


| | ASI** | Alliance s-score | UN voting s-score** |
|---------------------|--------------|------------------|---------------------|
| AIC | 242.8 | 275.2 | 263.1 |
| BIC | 278.2 | 310.6 | 298.5 |
| R ² Tjur | 0.068 | 0.018 | 0.035 |
| RMSE | 0.049 | 0.051 | 0.050 |

** p < 0.01

Result 2: ASI better predicts future diplomacy

Conditional Predictions of Diplomatic Visits



| | ASI** | Alliance s-score** | UN voting s-score |
|------------------|--------------|--------------------|-------------------|
| AIC | 15979 | 16185 | 16319 |
| BIC | 16014 | 16220 | 16354 |
| R^2 Nagelkerke | 0.36 | 0.336 | 0.321 |
| RMSE | 0.960 | 0.965 | 0.967 |

** p < 0.01

Takeaways from today

1. **Theory:** State social signals convey interstate relationships
2. **Data and Measurement:** expressed salience and affinity in new NSS corpora predicts future crises and cooperation
3. **Method:** Generalizable to any political text

Current applications of these data

Social signaling: reflect, predict, cause, or constitute?

Explaining salience: states themselves code political relevance

Burden-sharing: rhetoric and action in NATO expansion

Alliance credibility: extended nuclear deterrence in Asia Pacific