

International News Coverage and Foreign Image Building

Agenda Setting, Persuasion, and Framing in the Formation
of Public Image toward Foreign States in Japan, 1987-2015

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Motivation

How do public form **perceptions toward foreign countries/regions?**

Especially in a country like **Japan** (< 2% are foreigners), people rarely have a chance to interact with foreigners.

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The potential source: **media**.

Media provides information that is otherwise inaccessible to public...

- *“Good” Japan-US Relationship, More than 50%. Joint Public Opinion Survey by Yomiuri and Gallup.* (Yomiuri: Dec. 19, 1999)
- *Private Property Protection Law in China. “Inviolability” is specified. Gather Momentum in the Economic Liberalization. Expected to Be Enacted Next Month.* (Yomiuri: Feb. 4, 2007)
- *Youth Bearing IT Industry, From South Korea to Scarcely Staffed Japan. Send 200 This Year.* (Asahi: Feb. 7, 2003)
- *Extending Japan-Russia Defense Exchange. Memorandum Expected to Be Revised. Make Defense Minister Visitations Regular.* (Yomiuri: Jan. 12, 2014)

Theory

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3. **Framing effect:** The context (frame) used in news coverage *conditions* the strength of agenda-setting effect and persuasion (Scheufele and Tewksbury, 2007).

Explaining *Conditional* Media Effects

1. **Availability (Accessibility) of Information:** Media effect is **the largest** when the issue/frame/context is **moderately salient**. When the salience is too high or too low, media effect is weak. (Zaller, 1992)
2. **Familiarity:** The media effect is **more persistent** (i.e., long-lasting) when **information sources other than media is NOT available** (Coleman et al., 2009).

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No Foreign Issues are Consistently Highly Salient.

- Moderate Salience + High Familiarity (e.g., Economy):
Large & Short-lasting (H3a).
- Low Salience + Low Familiarity (e.g., Defense):
Small & Long-lasting (H3b).

Research Design/Data

- **Integration of Three Media Functions:** Reveals the comprehensive picture of media roles.
- **Societal (Aggregated) Level:** High external validity to draw implications about the society.
- **Longitudinal:** Assess not only *size*, but also *duration* of media effects.
- **Semi-Automated Media Contents Coding:** Reliable and efficient way to quantify texts.

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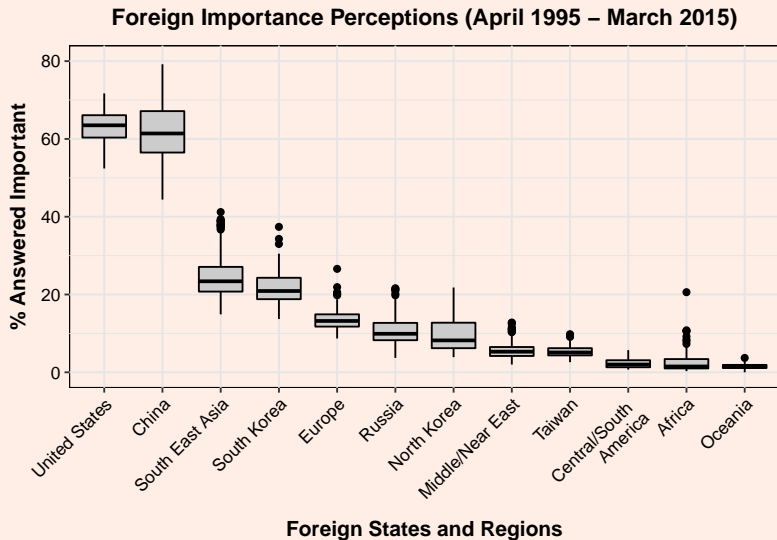
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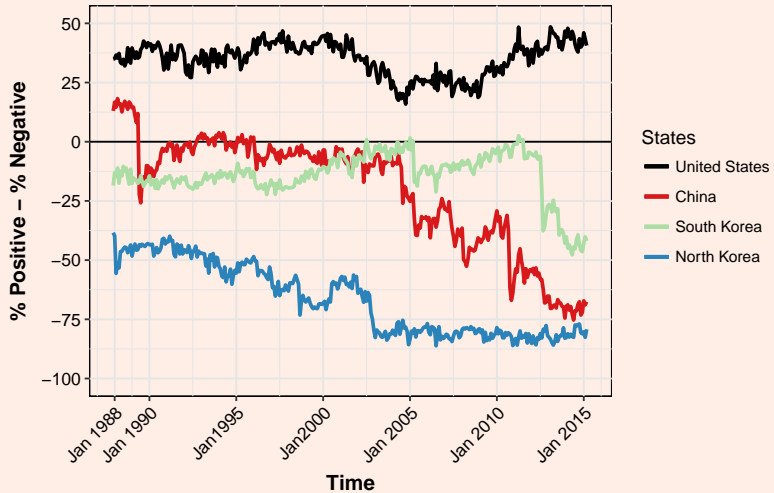
Control variables: Trade volume & trade balance.

DV1: Importance Perception



DV2: Directional Perception

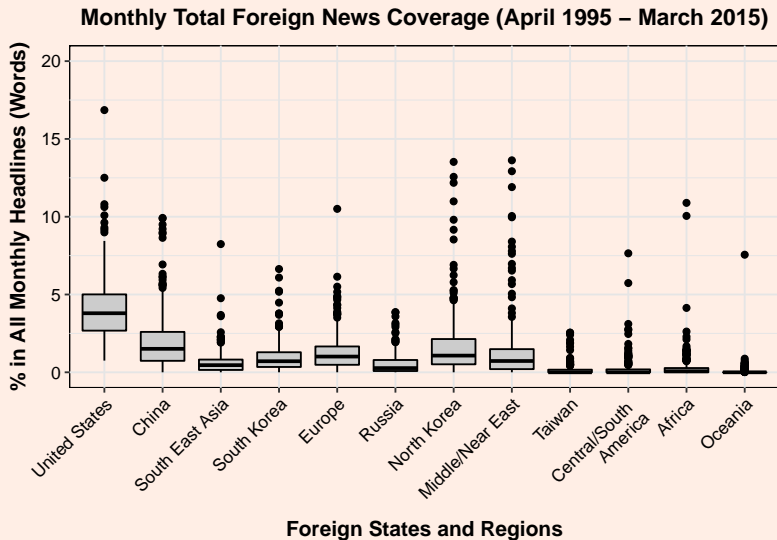
Monthly Foreign Directional Perceptions (Dec. 1987 – March 2015)



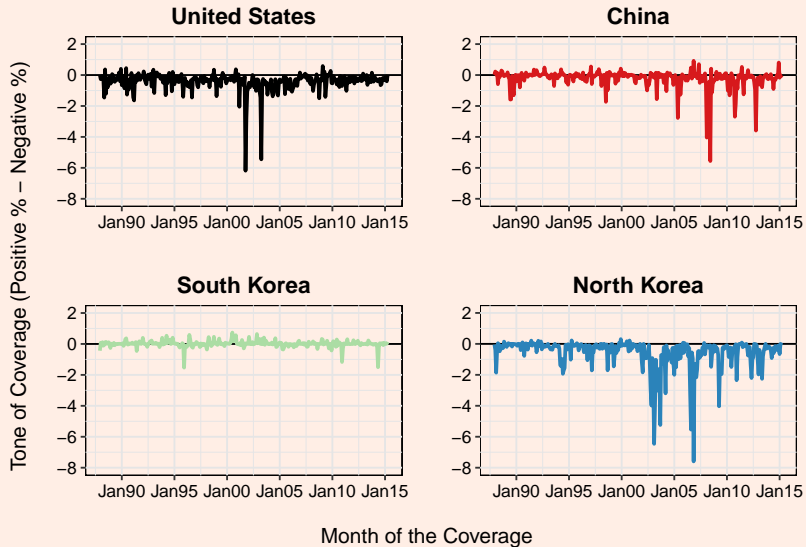
Quantifying Media Coverage

1. Automatically collect all **first-page headlines** that involve relevant texts (**TC**: 12 states/regions).
2. Manually code positive/negative tone of 1000 random samples (for US, China, South and North Korea).
3. Machine-learn and predict the tone of all headlines by random-forest classifier (**PNC**).
4. Automatically extract frames by searching for keywords (**frame**: economy and defense).
5. Aggregate by month and frame (value = percentage).

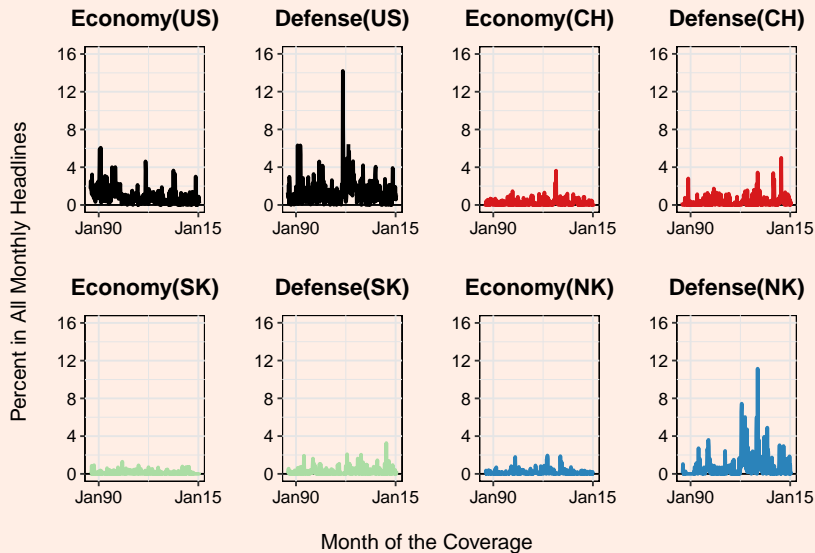
IV1: Total Coverage (TC) 1995-2015



IV2: Positive/Negative Tone of Coverage (PNC) 1987-2015



IV3: Framed Coverage 1987-2015

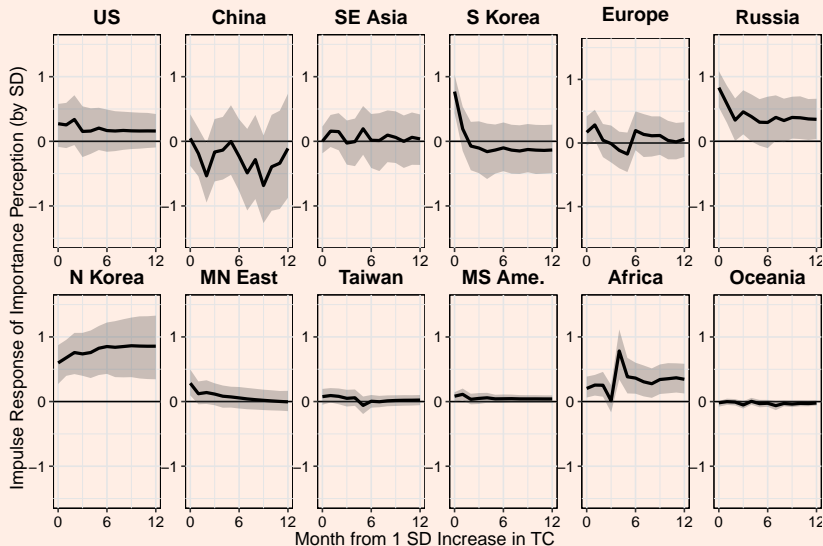


Analysis

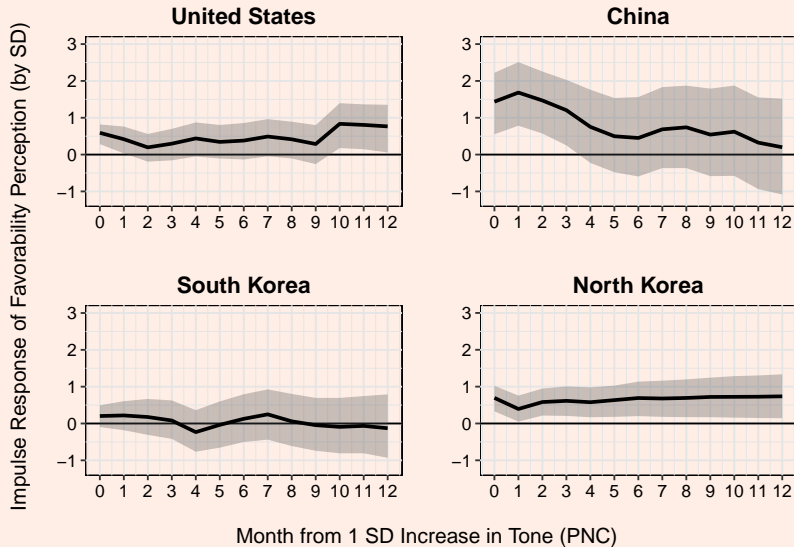
Following procedure applied to each state/region:

1. Assessing the existence of trend and non-stationarity in each time-series. (At least one non-stationary variable found for each data set).
2. Applying **Structural Vector Error Correction Model** (SVECM) for each country (automatic lag-selection by AIC, with the maximum of 12 months).
3. **Impulse response function** (IRF) to visualize the effect.
4. Interpretation: **SD change in foreign perception in response to 1 SD increase in news coverage.**

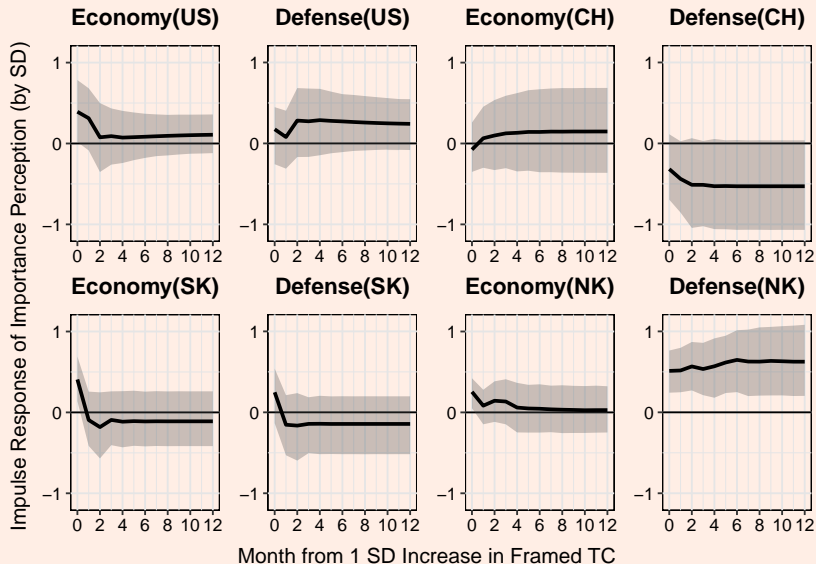
H1: Agenda Setting



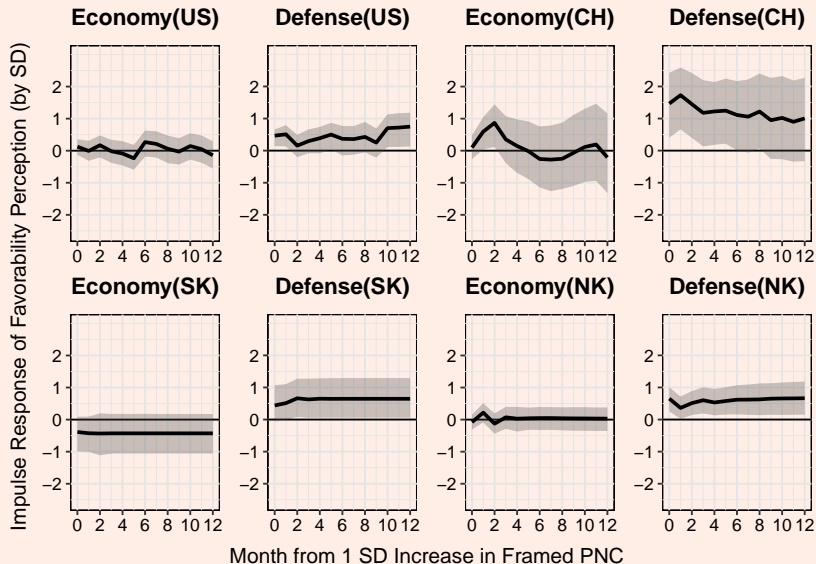
H2: Persuasion



H3-1: Framing and Agenda-Setting



H3-2: Framing and Persuasion



Discussion

Result Summary

H1 (Agenda-setting Effect): Generally Supported. The largest in moderately salient regions/states (e.g., South Korea, Europe, Russia, North Korea).

H2 (Persuasion): Supported for US, China and North Korea. The effect the largest in China, and the longest in North Korea.

H3-1 (Framing & Agenda-setting): Generally supported. Economy coverage has larger and more consistent agenda-setting effect. Defense coverage functions only for North Korea, but long-lasting.

H3-2 (Framing & Persuasion): Partially supported. Economy coverage functions only for China. Defense coverage effect is large, and the effect is long-lasting.

Agenda-setting function is most effective in influencing the importance of **moderately salient** foreign states/regions.

Persuasion is potentially effective within **highly salient** states/regions.

Economy frame is effective, but in **short-term**. **Defense frame**, if it works, is **long-lasting**.

Limitations/Future Suggestions

Limitations (may lead to under-estimation of effects):

- **Non-intuitive categorization** for foreign states/regions.
- Potential **errors** in media coverage measures.
- Missing **heterogeneous** (micro-level) nature of media effects.

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Future Suggestions:

- Sources of media coverage (e.g., elite communication). Is it **manipulation or mediation**?
- Overtime change in newspaper effects. Is it in decline? The effects of **other media formats**?
- More **systematic** assessment of **conditionality** (i.e., systematic identification of frames and natures of states/regions).

Thank you for listening!

Question Wordings for DVs

Importance

Q: In the next 5 years, which of the relationships with following countries and areas will become important for Japan? List up to 3 countries and areas.

A: United States; Canada; Russia; The Former Soviet Union other than Russia; European Countries; China; Taiwan; South Korea; North Korea; South East Asian Countries; Central and South America; The Middle and Near East; Africa; Oceania; Don't Know. (From June 2010, the question started to offer India as an additional option)

Favorability

Q: List up to 3 countries you like.

A: United States; Soviet Union (Russia); UK; France; West Germany (Germany); Switzerland; India; China; South Korea; North Korea; None; Don't Know.

Unfavorability

Q: Conversely, list up to 3 countries you don't like.

A: United States; Soviet Union (Russia); UK; France; West Germany (Germany); Switzerland; India; China; South Korea; North Korea; None; Don't Know.

Calculation of News Coverage

$$TC = \left(\frac{\Sigma(\text{Asahi.Relevant.HL} * W)}{\Sigma(\text{Asahi.All.HL} * W)} * \frac{4}{9} + \frac{\Sigma(\text{Yomiuri.Relevant.HL} * W)}{\Sigma(\text{Yomiuri.All.HL} * W)} * \frac{5}{9} \right) * 100$$

$$NC = \left(\frac{\Sigma(\text{Asahi.}\overline{p(\text{Negative}|x)} * W)}{\Sigma(\text{Asahi.All.HL} * W)} * \frac{4}{9} + \frac{\Sigma(\text{Yomiuri.}\overline{p(\text{Negative}|x)} * W)}{\Sigma(\text{Yomiuri.All.HL} * W)} * \frac{5}{9} \right) * 100$$

$$PC = \left(\frac{\Sigma(\text{Asahi.}\overline{p(\text{Positive}|x)} * W)}{\Sigma(\text{Asahi.All.HL} * W)} * \frac{4}{9} + \frac{\Sigma(\text{Yomiuri.}\overline{p(\text{Positive}|x)} * W)}{\Sigma(\text{Yomiuri.All.HL} * W)} * \frac{5}{9} \right) * 100$$

$$PNC = PC - NC$$

Clearly Negative Coverage:

- [−0.701] *Sharp Decline in Share Prices at NY Stock Exchange. Due to the Crash of American Airplane.* (Asahi: Nov. 13, 2001)
- [−0.856] *Anti-Japan Demonstration in China, Expanded to 10,000. Throwing Stone to Japanese Embassy at Beijing.* (Yomiuri: Apr. 10, 2005)

Clearly Positive Coverage:

- [0.559] *Japan-US Summit Meeting was Successful. The Two Leaders Hold Press Conference at State Guest House.* (Yomiuri: Jan. 10, 1992)
- [0.656] *Japan and North Korea, Expecting to Restart Negotiation of Normalization of Diplomatic Relationship in January. Agreed to Discuss “Abduction” in Parallel.* (Asahi: Nov. 13, 1999)

Comparing $\overline{p(c|x)}$ & $d(c|x)$ Aggregations

$\overline{p(c|x)}$ Based Predicted Proportion is Correlated More Strongly with True Proportion than $d(c|x)$ Based Predicted Proportion

Aggregation Size:		Country	By 10		By 50		By 100	
Metric	Tone		$\overline{p(c x)}$	$d(c x)$	$\overline{p(c x)}$	$d(c x)$	$\overline{p(c x)}$	$d(c x)$
Correlation	Negative	US	0.420	0.219	0.403	0.174	0.402	0.210
		China	0.543	0.404	0.568	0.417	0.550	0.393
		S.Korea	0.595	0.423	0.581	0.381	0.595	0.376
		N.Korea	0.571	0.520	0.547	0.523	0.546	0.491
	Positive	US	0.374		0.353		0.360	
		China	0.180	0.078	0.238	0.095	0.193	0.113
		S.Korea	0.532	0.228	0.527	0.234	0.552	0.258
		N.Korea	0.450	0.132	0.368	0.069	0.448	0.054

No cases for US-positive have predicted probability larger than 0.5.

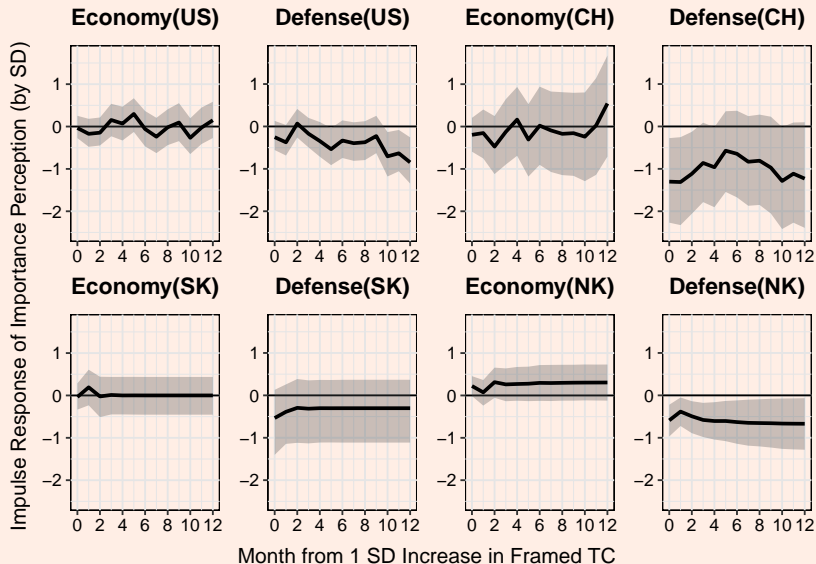
Key Words For Frame

Frame Frequency Page

Frame	Key Words
Economy	boeki (trade), toshi (investment), gatto (GATT), kanzei (tariff), en (yen), yunyu (import), yushutsu (export), kin-yu (embargo), shihon (capital), genchi-seisan (production in foreign country), gyogyou-kyotei (fisheries agreement), WTO, FTA, APEC, enjo (assistance), shien (support), keizai (economy), kabu (stock), soba (market price), en-yasu (weak yen), endaka (strong yen), owarine (closing price), shijo (market), akaji (deficit), kuroji (surplus), kokyo-jigyo (public works), sangyo (industry), baburu (bubble), shugyo (employment), doru (dollars), won (Korean currency), tsusho (commerce), sha (company), kozo-kyogi (structural impediment), enshakkan (yen loan), jinmingen (Chinese currency)
Defense	seisai (sanction), buryoku (armed power), gun (army), kaku (nuclear), kokubo (national defense), huantei (instability), antei (stability), yuji (emergency), gunkakku (military expansion), kyoji (threat), shinko (invasion), boei (defense), anzen-hosho; anpo (national security), jieitai (Self Defense Army), kogeiki (attack), kosen (combat), bakugeki (bombing), kubaku (air raid), teisen (cease-fire), wahei; heiwa (peace), domei (alliance), jieiken (self-defense right), senso (war), iraku (Iraq), ahugan; ahuganistan (Afghanistan), tariban (Taliban), tero (terrorism), senkaku (territorial dispute with China), rachi (kidnap by North Korea), takeshima (territorial dispute with South Korea), misairu (missile), geigeki (intercept)

Framed TC & Persuasion

PNC & Persuasion



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