Insights into Kim Jong-un's Cognition from his Public Speeches

Pre-Summit Effort
Strategic Multilayer Assessment (SMA) of Strategic Outcomes in the Korean Peninsula

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BLUF

- Juch'e political philosophy is a key rhetorical framework, but Kim Jong-un is emphasizing it and his father and grandfather less.
- Nuclear capability is seen as a necessary deterrent against US dominance and a point of national pride
  - However, in the structure of his argument, a nuclear deterrent is the consequence of multiple factors but NOT conceived as a capacity to accomplish additional objectives
- KJU discourse emphasizes DPRK capability/opportunity, self-interest and national identity, but rarely mentions China or foreign trade
- Two different measurement methods indicate that the complexity of KJU argumentation is exceedingly low – suggesting a tendency to make categorical, black-or-white judgments, intolerance of ambiguity, and failure to consider the trade-offs that may be required to achieve objectives that involve the actions of others
- If Kim indicates a reduced need for power, one cannot expect a reduction in weapons testing
- KJU appears to have a strong motive to control and manipulate others, to defend his own views and plans without adjusting them
- Kim's speeches exhibit language patterns that have been associated with dishonesty, but recent trends are toward *relatively* less dishonesty

Possible Implications

- Focus on providing/withholding things Kim can see as enhancing DPRK capability/opportunity and self-interest (military and aid)
- China may not have the influence over KJU we assume
- Foreign trade may appear to be politically problematic for the regime
- Play to his strong need for control and black-white judgements
- Have low confidence in his honesty, despite shifts away from his typically dishonest speech patterns

Agenda

- DPRK Cultural/Political Primer – A Necessary Background
- Corpus
- Analyses
  1. Empathy Checklist (U Birmingham)
  2. Basic Emotions (NSI)
  3. Cognitive Complexity (NSI)
  4. Quantitative Discourse Analysis (NSI/IPFW)
  5. Thematic Content Analysis – Integrative Complexity and Motive Imagery (UBC)
  6. Discourse of Deception (NSI)
- Summary Findings
- Summary Implications

North Korean Cultural/Political Primer

Juch'e Philosophy

- Confucianism
- Stalinist (Strong Leader) Communism
- Korean Nationalism
- National Self-reliance
- Personality cult focused on the Kim family

Developed by Kim Il-sung

Juch'e formally adopted into constitution in 1972

Songun – "Military First"

- Military prioritized politically economically, socially, culturally

Ten Principles of Juch'e 1972

1. Sacrifice
2. Loyalty
3. Absolute Authority of Great Leader
4. Leader's Command is Faith and Creed
5. Unconditional Obedience
6. Unity
7. Communism
8. Political Awareness
9. Strong Regulations
10. Pass Revolution on

Kim Jong-un Corpus

What did we analyze? (All analyses shared same corpus)

- 41 public speeches and missives from Jan 2012 to Jan 2018

Items Coded (Analyses 1,2,3,6)

338 themes and rhetorical devices; 21,775 coded segments

- **Nominalized Themes** – nominalized entities that represent culturally relevant persons, places, things, events, emotions, and ideas
- **Emotive Themes** – themes that evoke an emotional response; e.g. victimization; victory; strength; national pride
- **Rhetorical Devices** – ways of using language (sarcasm, repetition, special word use, figurative language, pejoratives)
- **Empathy and Basic Emotions** – ways of connecting with an audience and the expression of deep emotion
- **Discourse of Deception Metrics** – Law enforcement research operationlized to code for language use that indicates deception

Key Metric:

- **Density =** # occurrences / words in document

Empathy Checklist (U. Birmingham)

Wright, N. D. (2017). *From Control to Influence: Cognition in the Grey Zone*. Report for the Pentagon Joint Staff Strategic Multilayer Assessment Group.

- Checklist for Empathy provides insights for how a speaker can empathize and influence an audience
  - **Self-interest**: What material benefits may they gain or lose?
  - **Fairness**: “How fair will it be seen from the audiences’ perspectives?” Humans typically pay costs to reject unfairness and pursue grievances”.
  - **Fear**: “Do they fear for their security and why?
  - **Identity**: “What are their key identities?” Humans are driven to form groups (“us”, the “in-group”) that are contrasted against other groups (“them”, the “out-group”). Individuals also often hold multiple overlapping identities
  - **Status**: “How may this affect the audience’s self-perceived status?” E.g. For key audiences in Afghanistan, joining the Taliban had high status.
  - **Expectations**: “What are their key expectations, and what may violate them? The more unexpected a perceived event is, the bigger its psychological impact.
  - **Context, opportunity and capability**: “What opportunities and capabilities does the audience perceive it has for its potential alternative actions?” E.g. an intervention to encourage someone to pay taxes who is actively avoiding paying taxes, differs to that for someone who feels unable to use an online system.

Empathy Checklist Codes

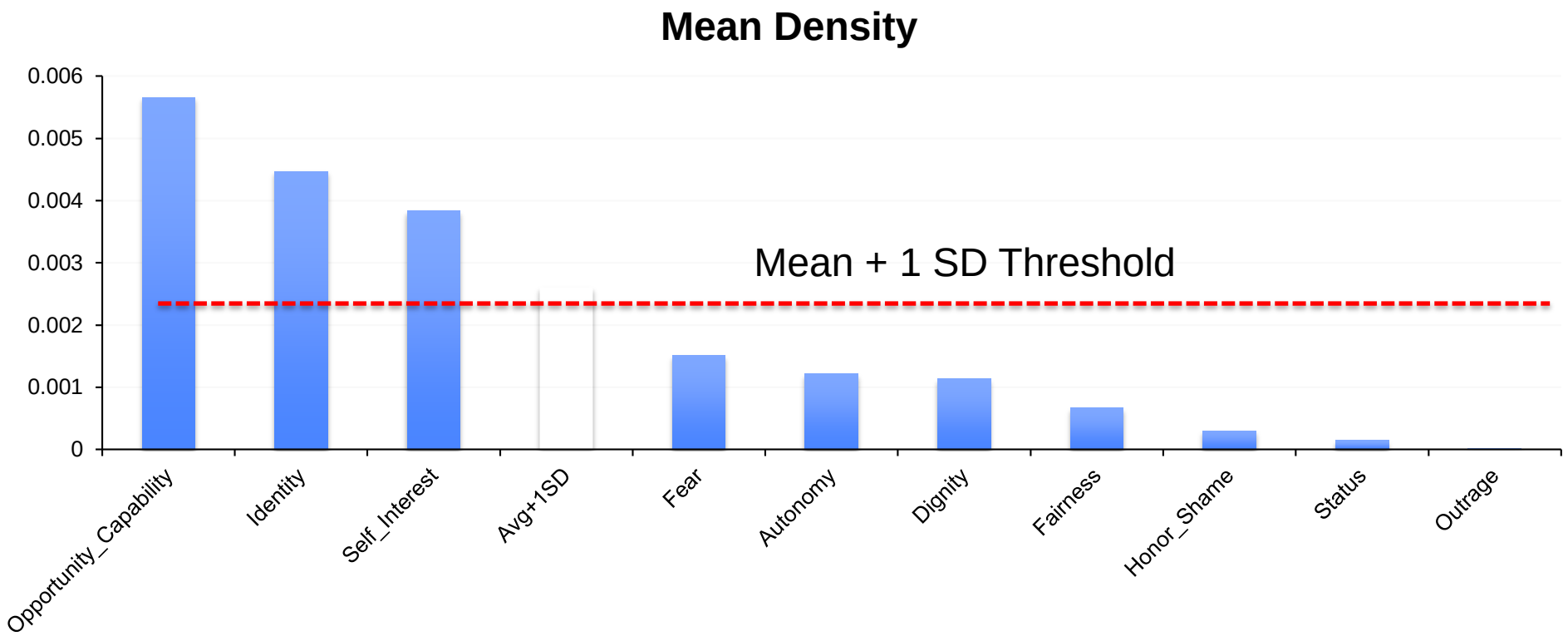
Empathy Question	Discourse codes	Additional strings
Self-interest?	Progress, Prosperity, Economic_Development	"living standards"; "standard of living"
Fairness?	Injustice, Justice, Humiliation, Servitude, Grievance, Equal_Rights, Rights, Atrocity, Economic_Sanctions, Media_Propaganda, Violation_International	—
Fear?	Aggression, Conspiracy, Cruel, Danger, Enemy, Extreme_Radical, Threat	fear; fright; dread; distress; forebod
Identity?	Homeland, Monuments, National_Identity, Patriotism, The_People, Unity, Masses, Nationalism, Other_Outgroup	—
Status?	Great_Power, Superiority	—
Expectations? (Surprise/Novelty)	—	surpris; sudden shock; struck unforeseen; unexpected; ambush; trap; "out of the blue"; "without warning"; "from left; field"
Opportunity/ Capability?	Ability, Confidence, Military, Space, Success, Victory	—

Other Basic Emotions (NSI)

Basic Emotion	Discourse codes	Additional strings
Autonomy	Independence, Self-reliance, Sovereignty	—
Honor/Shame	Honor, Shame, Humiliation, Servitude	—
Dignity	Dignity, Respect	—
Outrage	Outrage	—
Disgust	—	disgust; repug; nausea; detest; loath; repuls; sick; offal

- Psychological Research has identified basic emotions that resonate with people across cultures
- Ekman, P. (1992). An Argument for Basic Emotions. *Cognition and Emotion, 6*(3-4), 169-200.
- Elfenbein, H. A., & Ambady, N. (2003). Universals and Cultural Differences in Recognizing Emotions. *Current Directions in Psychological Science, 12*(5), 159-164.
- Kassam, K. S., Markey, A. R., Cherkassky, V. L., Loewenstein, G., & Just, M. A. (2013). Identifying Emotions on the Basis of Neural Activation. *PLoS ONE, 8*(6), e66032.
- Pagano, S. J., & Huo, Y. J. (2007). The Role of Moral Emotions in Predicting Political Attitudes about Post-War Iraq. *Political Psychology, 28*(2), 227-255.
- Plutchik, R. (2001). The Nature of Emotions. *American Scientist, 89*(4), 344-350.
- Vosoughi, S., Roy, D., & Aral, S. (2018). The spread of true and false news online. *Science, 359*, 1146-1151.

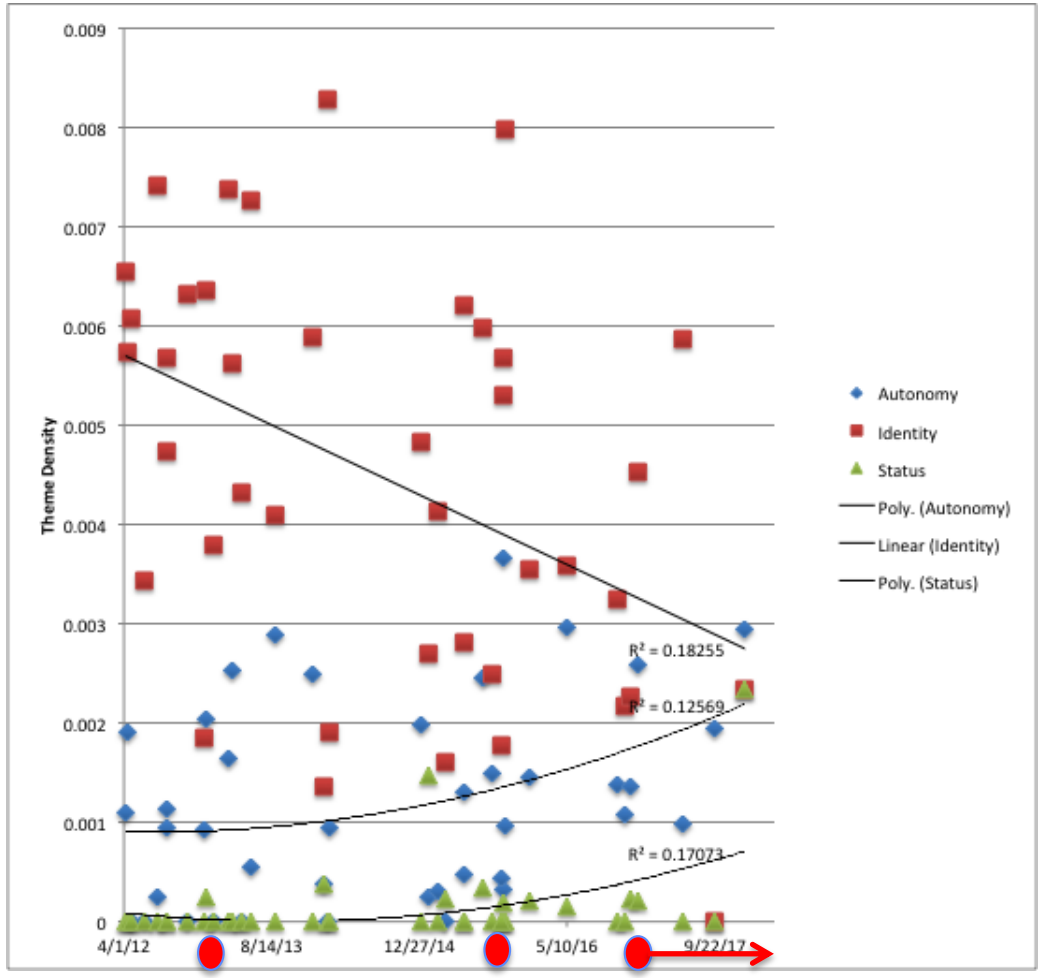
What Psychological Aspects Does Kim Jong-un Express?



- Kim Jong-un expresses most of the basic emotions and empathy question components
  - Arbitrary threshold of being more dense than 1 standard deviation used to illustrate his emphases
- Overall, he appears to give prominence to **Opportunity/Capability, Identity** and **Self-interest**
- **Surprise and Disgust don't even register!** May not be factors or, too hard to code automatically

Analyses 1 & 2

Is KJU's use of language indicating any changes in his psychology?



3rd Nuclear test

4th Nuclear test

ICBM launches, H-bomb test

- KJU is steadily **decreasing** his emphasis on **Identity**
- KJU exhibits an **accelerating emphasis** on **Status** and **Autonomy**
  - All changes statistically significant below .05 level

Analysis of the Structure of KJU Cognitive Complexity - NSI

- **Cognitive Maps** were created to identify the causal assertions contained in two speeches delivered by KJU -- the "First Speech" in 2012 and the 2018 New Year's Speech

- Measuring the structural characteristics of the map indicates the **complexity of the belief system** it represents -- measure not what is said, but how -- to indicate how a speaker thinks about a subject

- Measures are below the level of rhetoric and thus extremely difficult to manipulate

- **Why is this important?**
  - Elevated complexity is associated with more cooperative foreign policy behaviors; lower complexity with conflictual behaviors (Maoz and Shayer 1987, Maoz and Astorino 1992, Astorino-Courtois 1995)

- 5 Complexity Metrics (applied to adjacency matrix raised to the 5th power)
  - **Causal Connectedness (CC)** = average causal links among concepts; measures the interdependence among concepts in a belief system
  - **Cyclicality** = measures the indirect effect of a concept on itself (i.e., feedback loops). High cyclicality indicates cognitive complexity.
  - **CI** = cognitive imbalance measures the proportion of contradictory connections to balanced causal connections. Tolerance of ambiguity (imbalance) is a mark of high cognitive complexity.
  - **EC_i** = explanatory centrality of an antecedent concept I
  - **C_j** = centrality of a consequent concept j

Cognitive Mapping Results

BLUF: Do not expect anything different from DPRK any time soon

Comparative analysis of KJU cognitive maps from 2012 and 2018 shows no evidence of change in DPRK strategy during this period, and no indication that economic development/domestic issues may have supplanted national security concerns.

Q: What *should* we see in KJU's cognitive map if the regime was considering a major change of direction like eliminating or even reducing nuclear weapons?

A: *Increase in cognitive complexity (causal connectedness, cyclicity and/or imbalance) between 2012 and the 2018 New Year's Speech*

KJU speeches are nearly identical in their extreme simplicity on all 3 measures of structural complexity!

	Kim Jong-un		Henry Kissinger
	2012 First Public Speech –	**2018 New Year's Speech**	1973 Détente speech
Causal Connectedness	4.9	4.8	14.47
Cyclicality	0	0	38% of concepts are part of a cycle
Cognitive Imbalance	0	0	96% of concepts in inconsistent paths (indicating awareness of trade-offs)

Do we see this? Short answer: No

Result: the analysis shows **no indication of any change in DPRK strategy or thinking** from 2012 to 2018, rather it indicates that the regime's **core beliefs and strategy have not changed** for past six years

Concepts with highest consequent centrality scores in both speeches (C_j):

1) *building a strong socialist state*
2) identification of *external threats to DPRK*
3) *condition of the people*
4) *strength of the DPRK* relative to external threats

Result: Although they appear to be about different things, analysis of the **indirect** causal connections shows that the two speeches point to the same core set of **desired outcomes** in 2012 and in 2018

Cognitive Mapping Results

Q: What *should* we see in KJU's cognitive map if the regime was considering a major re-prioritization from achieving a nuclear deterrent in favor of international cooperation for economic development?

A: *Increase in cognitive complexity (causal connectedness, cyclicity and/or imbalance) between 2012 and the 2018 New Year's Speech, and precedence of economic outcomes in total connections*

KJU speeches are nearly identical in their extreme simplicity on all 3 measures of structural complexity!

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Causal Connectedness	4.9	4.8	14.47
Cyclicality	0	0	38% of concepts are part of a cycle
Cognitive Imbalance	0	0	96% of concepts in inconsistent paths (indicating awareness of trade-offs)

Do we see this? Short answer: Probably not

Result: 2018 Speech is fairly equally divided between national security-related concepts (38%; e.g., *ability to strike the US mainland*), domestic/economic concepts (33%; e.g., *increasing DPRK material wealth*) and values (29%; e.g., moral discipline) and **indicates significant interconnection between economic and national security-related concepts.**

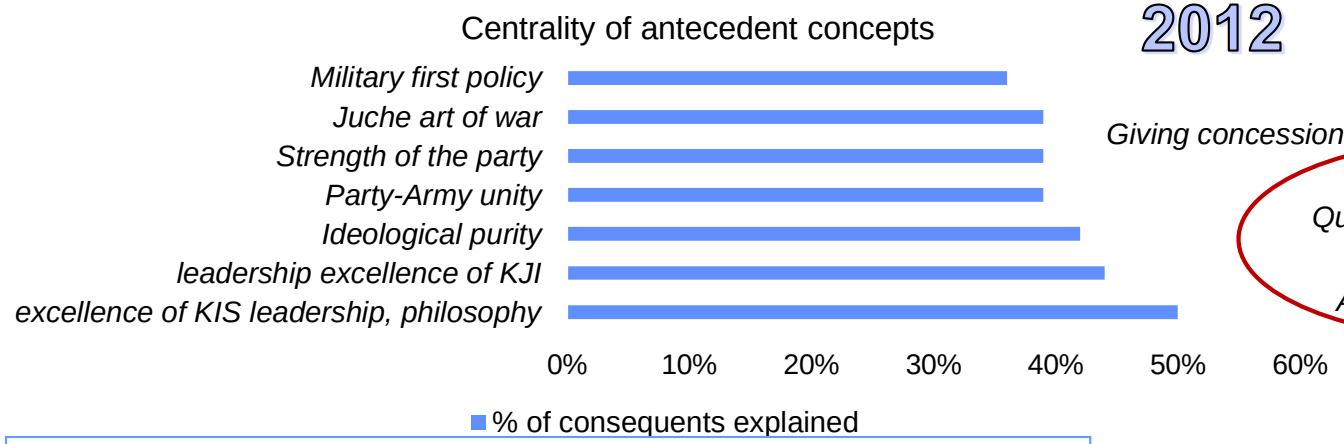
Result: Over half (53%) of national security-related outcomes have at least one domestic/economic antecedent, while 73% of economic outcomes are related to at least one national security antecedent possibly indicating **prioritization of national security- requirements as prerequisites for economic/domestic change**

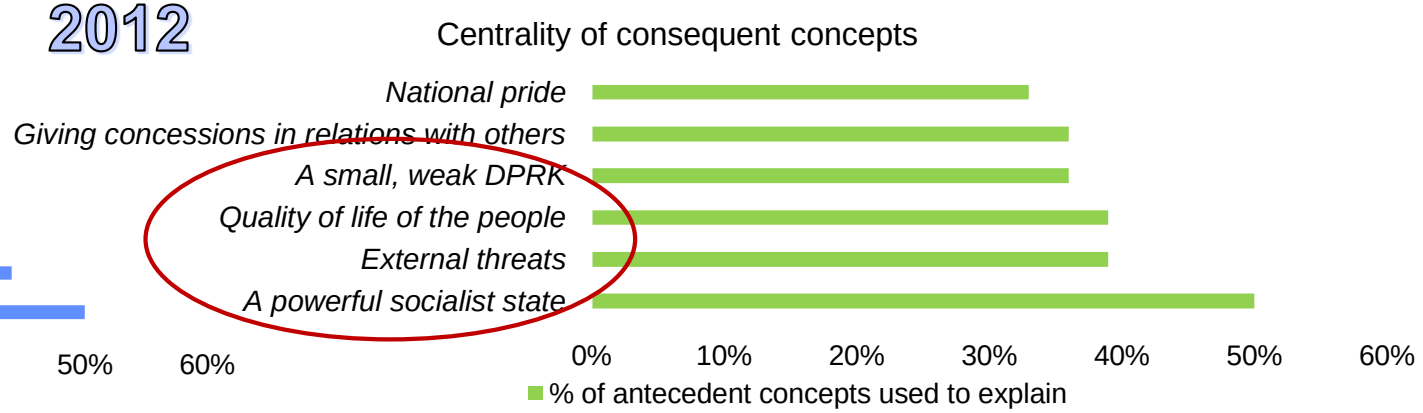
Analysis 3

Key Concepts from 2012 and 2018 Speeches

Below the level of rhetoric we see 2012 and 2018 speeches are about the same things

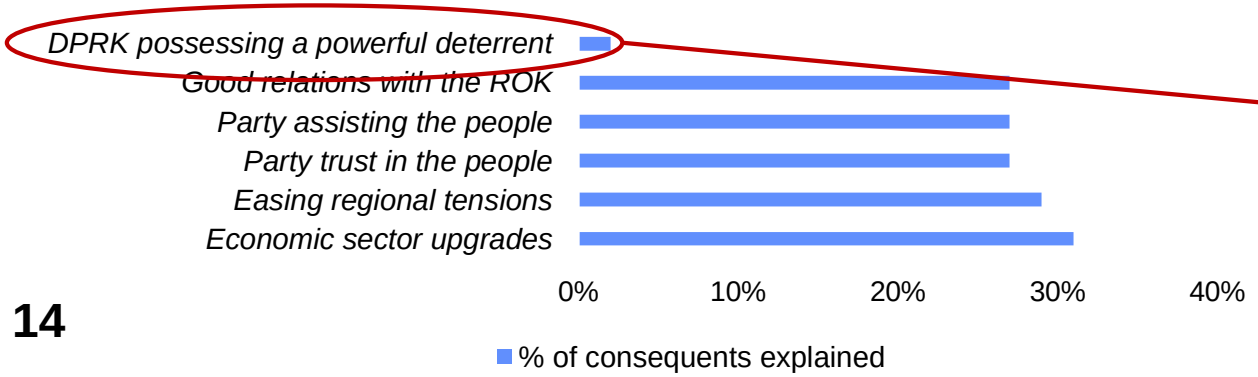
2012

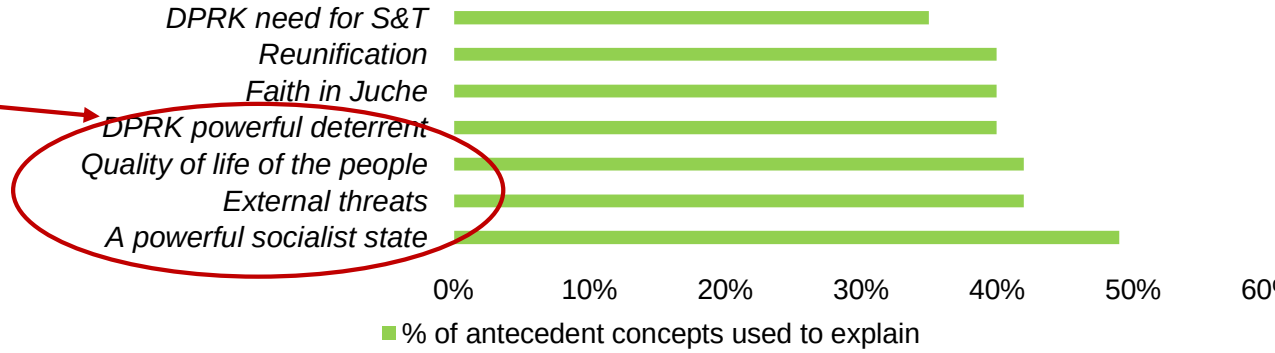




Even in 2018 DPRK nuclear deterrent discussed as an outcome (40%) rather than as an antecedent causing other events or states of being (2%)

2018





Quantitative Discourse Analysis (NSI/IPFW)

- Discourse analysis considers not just what people say, but how people say it
- People deploy language to persuade
- Language also reveals values, goals and motives
- In many cases, speakers are not aware of how their use of language betrays them
- Quantitative discourse analysis uses codes that capture context and linguistic devices and renders these into metrics amenable for statistical modeling and analysis

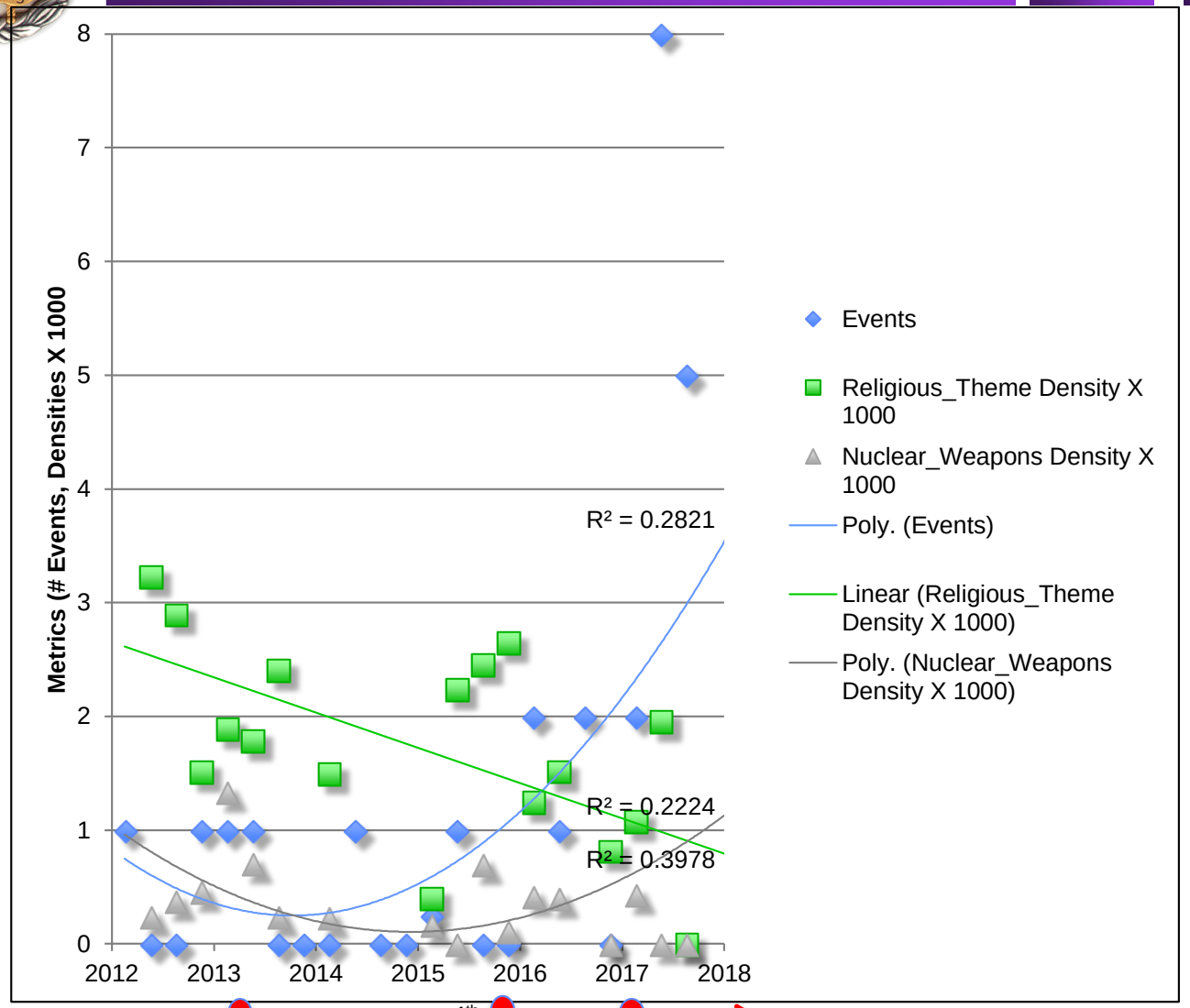
Quantitative Discourse Analysis: What does KJU Talk about Most?

Rhetorical Devices	Cultural Themes	Leaders	Political Themes
Example Hyperbole Intensifiers	Ability Independence Masses Metaphysics Juch'e Religious Themes Overcoming Pride Revolution Songun Strength Victory	Kim Il-sung Kim Jong-il	Economic Development Education Military

- Most important themes:
- Juch'e, Kim family, strength, resilience and independence of DPRK, military, economic development
- All of these are tightly integrated and quantitatively highly intercorrelated
- They cannot simply be separated out as separate bargaining chips

Analysis 4

Quantitative Discourse Analysis of KJU Temporal Trends



3rd Nuclear test

4th Nuclear test

ICBM launches, H-bomb test

- Testing events accelerating through Fall 2017, then none
- Nuclear themes steadily decrease and then spike in 2018
- Religious language (e.g. eternal, sacred, immortal, faith) steadily decreasing
- All trends statistically significant < .05 level

What Does KJU NOT Talk About?

- China is responsible for ~90% of import/export to DPRK and is ostensibly DPRK's closest ally
- However,
  - Since 2012, KJU has only publically mentioned China twice, and both times in relation to historic WWII opposition to the Japanese
  - Foreign trade (with anyone) is only alluded to only four times
- Despite DPRK's dependency on China and our perception that DPRK is badly in need of foreign trade, they are not mentioned.
- According to Juch'e philosophy, DPRK should be an autarky (state with no dependencies on any other)
- Even if DPRK is dependent on others and in need of trade, KJU cannot express this within the overarching Juch'e framework.
- **Implication**: It would be extremely difficult if not a non-starter, for KJU openly to accept offers of open trade or dependency on other nations; any such offers must be done out of public discourse

Thematic Content Analysis (UBC)

Integrative Complexity (IC)

- Integrative Complexity (IC) is a characteristic of cognition, which is related to such aspects of thinking as flexibility, nuance, information search and utilization, openness to new information, perspective-taking, and tolerance for uncertainty and lack of closure.
- IC is a measure of the structure, not the content, of thought.

- Subcomponents of IC:
  - **Dialectical complexity** is a measure of the extent to which the speaker recognizes the legitimacy of other perspectives.
  - **Elaborative complexity** is a measure of the extent to which the speaker recognizes the relevance of more than one dimension within a given perspective.
- All coded on a scale of 1 to 7 (low to high)

Motive Imagery (MI)

- MI measures the frequency of references related to three major motives: the needs for Achievement (success, excellence), Power (influence, persuasion, control), and Affiliation (close relations, friendship, nurturance).

Thematic Content Analysis of KJU's Speech

Variable	Mean	Std. Deviation
Integrative Complexity	1.49	0.22
Dialectical Complexity	1.06	0.08
Elaborative Complexity	1.47	0.21
Need for Achievement	5.34	2.08
Need for Affiliation	1.18	1.36
Need for Power	8.40	2.56
NOTE: All variables were coded manually, and then aggregated to quarter-years. Number of paragraphs = 501; Number of quarters = 18.		

Implications of Integrative Complexity (IC) and Motive Imagery (MI) Scores

- KJU's IC is toward the lower portion of the general range of scores for political leaders across many studies. It implies rigid information processing, intolerance for competing views, dislike of open-ended or uncertain situations, and little scope for considering a variety of interacting factors,
- His very low score for Dialectical Complexity reflects a pervasive failure to recognize (or consider) dimensions, points of view, perspectives, etc., that are outside his own terms of reference and assumptions.
- His MI profile shows that his highest motivational priority is need for Power. This is different from many high-level leaders, who tend to be high in need for Achievement, KJU's second-highest motive. The very low level of need for Affiliation is customary among national leadership figures.
- Taken together, the IC and MI data show a person with a strong motive to control and manipulate others, to defend his own views and plans without flexibly adjusting them to changing circumstances, to make categorical, black-or-white judgments, and to favor definite and unchanging decisions.
- It is important to remember that IC is a structural characteristic: that is, the overt content of the individual's text may be manipulated for impression management purposes (e.g., to appear flexible and open to compromise), but the level of the person's IC will still show the underlying process of thought.

High nPow does NOT Predict Weapons Testing Events

- Need for power (nPow) is not associated with weapons testing events in the same quarter, r = .05 (p = .85).

- Although the relationship is not significant, lagged nPow is *negatively* associated with weapons testing events. For a lag of 1 quarter, r = -.26 (p = .32).
- This sign holds if we dummy weapons testing events, 0 = no tests and 1 = tests. For a lag of 1 quarter, r = -.22 (p = .40).

- **Key Take-Away:** When Kim exhibits relatively low power imagery, this is NOT associated with a reduction in weapons testing events in the subsequent quarter.
  - Increases in his need for power do not predict increases in testing, nor do decreases in his need for power predict reductions in testing

Changes in IC and MI Follow Weapons Testing Events

- Lagging weapons testing events by one quarter, they have the following correlations with our psychological variables:
  - Integrative Complexity (IC): r = -.47 (p = .047)
  - Need for Achievement (nAch): r = -.62 (p = .01)
  - Need for Power (nPow): r = .51 (p = .03)
  - Need for Affiliation (nAff): r = -.24 (p = .349, not significant)

- **Key Take-Away:** When North Korea tests weapons, in the subsequent quarter Kim exhibits lower IC, i.e., black-and-white thinking; decreases in need for achievement; and increases in need for power. He appears to become more belligerent.

Discourse of Deception (NSI)

- Research on the language use of liars provides some **tentative indicators**
- Discourse of deception is a scientifically valid field, but tests have neither been methodologically sound nor adequately validated enough to be used in criminal courts in most countries
- However, basic findings are useful for police investigations to indicate leads
  - Vrij, A. (2005). Criteria-Based Content Analysis: A Qualitative Review of the First 37 Studies. *Psychology, Public Policy, and Law, 11*(1), 3-41.
- Caveat: Linguistic studies of lie detection are grounded in law enforcement contexts; however, studies of lying in political discourse identify similar indicators, especially evasive tactics similar to equivocation, other pronouns, and sense words (see below).
  - Galasinski, D. (2000). *The Language of Deception*. Sage; Martin, B. (2014) Tactics of Political Lying. *Journal of Language and Politics* 13(4): 837-856.

- Liars Typically use more:
  - Words per average sentence of 10 – 15 words in English
  - More 2nd and 3rd person pronouns than 1st person pronouns
  - Equivocations (maybe, possibly, sort of)
  - Negative emotion words (horrible, awful, bad)
  - Negations (didn't, cannot, would not)
  - Sense words (feel, hear, saw)
  - Overstatements (never, always)

- These themes were coded in KJU corpus and their densities examined for overall patterns and trends

Kim Jong-un's Lying Discourse Metrics

Indicator – Statistically Prominent Patterns	Conclusion
Average words per sentence, corrected for translation = 29.8 at least twice expected	Dishonest
Other person to first-person ratio = 2.6, KJU uses far more other-person pronouns!	Dishonest
Negative political themes used often, along with other negative themes	Dishonest
Overstatements frequently used	Dishonest

KJU's overall pattern of language use is consistent with dishonesty

Statistically Significant Trends through Time	Conclusion
Average words per sentence, corrected for translation decreasing (r=-.329, p=.029)	Less Dishonest
Overstatements initially high 2012, decrease and recently increase (R^2=.11, p<.02)	More Dishonest
Other indicators stable through time	Dishonest

Dishonesty metrics mixed, but overall indicate maintenance of dishonest linguistic patterns

Summary of Discourse and Cognitive Data

Method	KJU Values	KJU Changes in Values	KJU Decision Calculus
Quantitative Discourse Analysis	Juch'e, Songun, Ability, Autonomy, Kims, Economy and Development	Juch'e is decreasing, Nukes decreased and spiked in last 2018 speech	
Empathy Checklist	Ability, Identity, Self-interest	Identity is decreasing, Status is increasing	
Basic Emotions		Autonomy is increasing	
Cognitive Complexity	2012 Songun, Ability 2018 Juch'e, Nuclear ability and deterrent		CC uniformly very low
Integrative Complexity			Uniformly low
Discourse of Dishonesty			Discourse metrics indicate dishonesty

Summary Empirical Findings

- **Juche philosophical framework** is the essential scaffolding upon which all values, interests and even tactics are hung
- The **military** is a keystone in this framework
- **Nuclear capability is considered a necessary element** for DPRK and therefore regime security; also a major point of **national pride**
- **Recent spike in his mention of nuclear weapons, decreases his emphasis on religious concepts and Juch'e**
- **China never mentioned** in any substantive way; **foreign trade barely mentioned** at all – these may not actually be important to KJU and they are **antithetical to the Juch'e principle of a independent DPRK autarky**
- KJU is moving away from emphasizing Juch'e and Identity, although still fundamental to his narrative; status is increasing in importance to him
- Both methods for assessing the complexity of his decision calculus provide the same result – his **cognitive complexity is uniformly low throughout his reign**
- When he conducts a test, his Integrative Complexity decreases and his Need for Power increases; **testing emboldens him**
- He uses linguistics patterns consistent with **dishonesty**

Summary - Implications of Results

- All issues are integrated into the **Juch'e framework**
  - Different types of issues (ideological, security, economic, social) cannot be simply separated as bargaining chips
  - KJU must save face with respect to the Juche framework, until he changes that framework
- KJU is moving away from some elements of the framework (Identity, Juche), but they are still central
- Movement away from Juch'e may indicate **increased aggression**, but ironically increased mention of nuclear weapons may indicate **decreased likelihood of further testing** (see analysis quantitative discourse analysis below)
- **China and Foreign trade are not apparent concerns** of his
  - Offering these as negotiating points may be distractions and non-starters
- If he is shifting his frame of reference, it is telling that his **cognitive complexity remains at a very low level** – he really only considers his own perspective and lacks grasp of the relevance of others' perspectives
- He exhibits **increased belligerence** *after* he **tests his nuclear and missile capabilities**
- Don't trust his statements