

# North Korea's Rational Threat-Making: Using Propaganda to Understand North Korean Threat Perception

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**Abstract:** This article analyzes the content of North Korean propaganda between 1996 and 2018 in order to identify the conditions under which North Korea makes threats against its adversaries. This analysis shows that North Korea systematically issues threats to its adversaries when it faces concrete challenges to its physical security or to the legitimacy of its sovereignty. This contradicts the view that North Korea's regular program of threats represents erratic 'cheap talk.' Furthermore, I demonstrate that North Korean rhetoric matters not only for providing insight into the inner workings of the North Korean regime, but also because it has two types of consequences. First, North Korean threats are correlated with subsequent provocative actions. Second, utilizing an original survey experiment, I show that South Koreans' policy preferences are responsive to the content of propaganda from North Korea. This indicates that North Korea's threats can have tangible policy consequences even absent accompanying provocative actions.

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# 1 Introduction

Literature on North Korea tends to either describe the country as an aberration, characterized by unpredictability and rash, often extreme actions, or to conceptualize its behavior as a set of rational responses to a particularly intense security dilemma (Choi 2015; Kang 1995). In the first framework, any negotiation with North Korea or strategic concessions would be fairly futile. They would be unlikely to change the policies of the irrational, repressive regime. The latter view, however, characterizes North Korea’s policies as merely a response to the difficulty of survival when facing a number of powerful adversaries. As a result, there should be many possible actions that the U.S. and others could take that would reassure North Korea about its stability and may, in turn, be used to garner reciprocal concessions. In this way, the debate over the nature of North Korea’s regime is fundamental to determining the ideal strategies for dealing with the tensions on the Korean Peninsula.

For example, an often-discussed idea has been whether the U.S. and South Korea ought to offer to halt their joint military exercises in exchange for North Korean efforts to dismantle their nuclear program (Bernhardt and Sukin 2020; Denmark and Ford 2018; D’Orazio 2012). Advocates have argued that North Korea sees these exercises as a dire threat to security, nothing how North Korea seems to react strongly to the exercises. Official North Korean news, for example, has called the drills “exercises for a nuclear war” that could bring “the situation on Korean Peninsula to the brink of war” (KCNA 2010). North Korea has described the exercises as a “series of dangerous hostile military acts” (KCNA 2012), and called them “acts of perfidy of reciprocating the good faith with evil” that “put the DPRK-U.S. relations on the verge of a breakdown” and should make the U.S. “ponder over what it can do during the short last hours left” (KCNA 2019). This hostile language may suggest that North Korea views the exercises as a serious security problem. If so, then relaxing the frequency or intensity of the exercises could be a useful concession.

On the other hand, several scholars, pundits, and military officials have argued that—despite the threats it has made in response to military exercises—North Korea wouldn’t

actually be willing to alter its behavior in exchange for a cessation of the U.S.-South Korean exercises.(Miller 2018; Selegman 2018; Stavridis 2018). It could be the case that North Korea’s threats in response to the exercises are relatively meaningless, that the threats don’t, in fact, signal significant North Korean concern about the exercises, and that North Korea would therefore continue its belligerent policies even if fewer exercises were conducted. After all, deciphering meaning from North Korea’s rhetoric is notoriously difficult, in part because North Korea so frequently makes threats. On average, the state-run Korean Central News Agency (KCNA) releases 48 articles that contain threats every month. It is unsurprising, then, that many analysts don’t take these threats seriously and instead view North Korea’s rhetoric as unpredictable and largely devoid of meaningful content.

As John Ikenberry and Chung-In Moon note, North Korea has frequently been labelled “with adjectives such as impulsive, eccentric, renegade, erratic, and paranoid” (Ikenberry and Moon 2007, 146). This approach remains prominent in both news coverage of and academic research on North Korea.<sup>1</sup> A key component of this argument focuses on the implications of North Korean irrationality for regional security, arguing that North Korea’s consistently aggressive behavior, regular program of threatening propaganda, and isolation from the international order make crises difficult to predict and escalation difficult to control. In this view, neither North Korea’s behavior nor its rhetoric should provide much insight into North Korea’s strategic priorities or its intentions.

In contrast, I argue the use of threatening rhetoric by North Korea belies the strategic logic of the state’s security policy and signals its resolve to respond to particular events. That is, because North Korea makes more threats when it feels the most threatened, the content and frequency of North Korean threats can help identify the factors that cause the North Korean government the most concern and can help identify periods in which the government is most likely to take concrete steps to respond to what it sees as an adverse

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1. The following provide examples of newspaper stories and commentary which utilize this framework: Smith 2000; Noland 1997; Cha and Kang 2018; Dalton et al. 2016. Papers and books that articulate the irrationality thesis (or elements of it) include: Bracken 1993; French 2007, 2015; Shin 2018; Morgan 2006; Park 2008; Myers 2010.

security environment.

I test this argument by collecting and systematically analyzing threats made in North Korean state news. I examine the content of North Korean threats made in state-run propaganda between 1996 and 2018 in order to identify when North Korea makes threats against its adversaries. I demonstrate that North Korean threats are signals of intent; they precede and predict concrete provocative actions—such as cross-border violence, missile tests, and nuclear tests—taken by the North Korean government. This finding reveals that North Korean behavior signals key information about North Korean intentions and can be used to predict when demonstrations of resolve will occur.

I also show that threats can have an effect on political outcomes. A survey experiment shows that South Korean citizens care about the threats North Korea makes and even change their policy preferences in response to North Korean rhetoric. In particular, the survey experiment finds that North Korean threats about a U.S.-South Korea joint military exercise are correlated with support among South Koreans for cancelling that exercise—despite otherwise widespread support for such exercises. This indicates that North Korean threats are, on their own, sufficiently credible as to alter policy preferences among the threats' audiences. This finding may provide a rationale for why North Korea would be willing to make frequent threats despite the risks that threats could cause adverse reactions by adversaries.

This paper finds that North Korean threats have important political effects. First, threats signal resolve and can therefore help indicate when crises might escalate or when provocative actions might occur. Provocations include missile tests, nuclear tests, and other militarized or threatening actions, such as incidents of cross-border violence. Provocations are of critical importance because they risk escalating tensions on the Korean Peninsula to conflict and carry risks of miscalculation and accidents. Second, threats have the potential to affect policy preferences in their audiences. States' rhetoric is taken seriously by target audiences and can persuade the public even in adversary states. These findings contradict the prevailing

view that North Korea’s use of threatening rhetoric is irrational and therefore relatively inconsequential. Instead, these results suggest that the public declarations that states make have an important, though understudied, place in international politics.

## 2 Theory

States’ threats have often been overlooked as simply ‘cheap talk.’ Incentives to misrepresent information suggest that very few state communications should be seen as revealing true information about a state’s capabilities or intentions (Fearon 1995). This is especially true when the messages in question are cheap to produce; when messaging has costs attached, bluffing may be able to be distinguished from sincere attempts at communication (Morrow 1994). For example, democracies and some types of autocracies have been theorized to face audience costs if they fail to follow through on threats. As a result, their threats may reveal more information than those of a country like North Korea, where the leader is insulated and beholden to the preferences of few others (Fearon 1997; Schultz 2001; Weeks 2008). North Korea is not the only state where rhetoric might be expected to be especially cheap. Personalist leaders have more leeway to choose their preferred rhetoric without significant costs.

The fact that North Korea’s use of threats is continuous and extreme has contributed to the view that these threats should have few consequences. For example, Van Jackson explains that, in the late 1960’s, “US analysts had difficulty distinguishing Pyongyang’s threats from its rhetorical flourishes, typically discounting statements as nothing more than ‘cheap talk.’ North Korean threats became white noise that even made tracing actions to specific prior threats through post hoc analysis difficult for the United States; their frequency and consistently hostile content... made North Korean statements a poor indicator of North Korean intent” (Jackson 2016, 29). Many analysts continue to view North Korea’s threat-making in this light, in part because frequency and hostility have remained key features of

North Korea’s rhetoric.

An additional explanation for the tendency to dismiss North Korean rhetoric as ‘cheap talk’ centers on the idea that the regime’s rhetoric is intended for domestic, not international, audiences. Leaders sometimes use incendiary language for diversionary purposes, distracting their domestic public from ongoing issues by rallying support against a foreign adversary (Carter 2020; Ostrom and Job 1986; Russett 1990). This argument has been applied in the North Korean context by suggesting that North Korea’s hostile activities—including the threats frequently issued in state propaganda—are associated with domestic conditions that would produce diversionary incentives or are intended to shore up domestic support for the regime (Hunter 1999; Nakato 2016; Wallace 2014, 2016).

This approach suggests that North Korean threats should provide little truthful information and should be largely unrelated to North Korea’s strategic actions. North Korea should make threats against its adversaries in response to both truly concerning events and insignificant events, as both would provide opportunities for North Korea to demonstrate its resolve and drum up domestic support for its leadership. Content analysis of threatening propaganda would therefore reveal little information about what does or does not concern North Korean leadership. Moreover, threats should not, in this framework, signal information about North Korea’s willingness or capability to use force; certainly, threats should not be able predict the use of force or other provocations by North Korea’s government.

On the other hand, several scholars have shown that threats and other types of messaging from states do provide a window into decision-making, arguing that analysts can use these sources to assess how political elites respond to different circumstances (Lasswell 1941; Pion-Berlin 1988; Tetlock 1979; Thrall and Cramer 2009). Specifically, some research has shown that threatening rhetoric can have significant political consequences, such as deterring adversaries, increasing the probability that the state making the threat uses force, or signalling information about the state’s intentions (Farrell and Rabin 1996; Tingley and Walter 2011; Sukin 2019a). Broader work on signalling also suggests that the messaging and behavior

of regimes—especially during crises—can provide truthful provide information about states’ capabilities and levels of resolve.(Geller 1990; Gochman and Leng 1983; Jervis 1978)

In contrast to both approaches, I argue that, while the content of individual communications from North Korea rarely reveals true information about capabilities or intention, changes in the *volume* of communications can reveal underlying strategic preferences. While states have incentives to misrepresent, they should still respond more strongly to issues of greater concern than to issues of lesser concern. In the case of North Korea’s threats, this may mean that—despite a high baseline level of threats against its adversaries—increases in the amount of threatening rhetoric should be correlated with periods in which North Korea faces stronger threats to its core interests. As a result, examinations of the volume of North Korean propaganda should provide clues into how North Korean threat perceptions operate. Moreover, because threats should be most heavily used during periods of significant concern about North Korea’s security priorities, increases in the use of threats against adversaries should also provide warnings that North Korea is prepared to take provocative actions to further demonstrate its resolve and establish deterrence.

While *specific threats* that North Korean propaganda includes are unlikely to be carried out and North Korea exaggerates both its capabilities and its hostile intentions towards its adversaries, North Korea *does* respond more often and more severely when faced with more severe security challenges. For example, Bernhardt and Sukin (2020) finds that North Korean rhetoric becomes more bellicose in response to South Korean joint military exercises and, moreover, that more threatening exercises—such as larger exercises or those that occur closer to North Korean territory—elicit larger negative responses. This paper demonstrates that the *volume* of threatening communications from North Korea reveals hostile intentions; periods in which North Korea makes more threats against its adversaries are correlated with the use of kinetic provocations, such as missile and nuclear tests. Moreover, I show that, while the content of individual threats may be misleading, on the whole, North Korean threats more often reference concepts of core importance to North Korean strategic thinking.

While North Korean threats are intended to communicate with an international audience, individual communications are rarely truthful. Some North Korean threats are outward facing; a simple way to distinguish threats with domestic vs. international audiences is to look at the language or languages in which the content is released. North Korea's state-run news agency, KCNA, publishes some of its material in English. Although nearly all English-language KCNA articles are translated versions of articles originally written in Korean, not all Korean-language articles are translated into English (although many are).<sup>2</sup> This suggests that there is a selection process whereby KCNA or other government officials determine which articles should be read by foreigners. Note that only a very small segment of North Korea's population can speak English, so while it is possible that some English-language articles are also intended to be read by North Korean elites, the vast majority of readers will be foreign. Moreover, North Korean elites would also have access to the Korean-language version of the articles; translating an article into English, then, makes sense only if the government desires a foreign audience for the article or wants to keep the article from being read by non-elites.<sup>3</sup> Because of their external-facing nature, it can be presumed that North Korea's English-language publications have some intentional signaling components and are meant to communicate information to international audiences. Moreover, because the readership of these articles is largely foreign, the articles are communicating to foreign audiences. Thus, threats that appear in English-language KCNA articles can be interpreted as signals from the North Korean government to foreign audiences.<sup>4</sup> However, the selection process and lack of a domestic audience for English-language communications also means that North Korea has significant leeway to inadequately represent conditions, capabilities, and intentions.

Moreover, since all information coming from the so-called 'hermit kingdom' is vetted in some way, the fact that information in a piece of propaganda is published suggests it

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2. There are known instances of articles available in English and not Korean; these are most often very technical pieces about North Korean technological accomplishments.

3. The very small number and technical nature of English-only articles suggests that this is not a regular motivation for translation into English.

4. KCNA publishes in a number of languages, including Russian and Spanish. However, the most common foreign-language publications from KCNA are in English.



communicates a message that is approved by regime leadership. North Korea’s propaganda efforts are considered vital to the regime’s survival. Positions involved with propaganda production are considered prestigious, direction for content often comes from top levels of leadership, and propaganda is used to create a cult of personality for North Korea’s leaders.(Rich 2014a) This approach allows North Korea to tailor specific messages to its interests and to fully manage the information environment. Because of the severe security threats the state faces, North Korea has significant incentives to overstate its military capabilities. Importantly, North Korea also has a greater capacity to do so than many other regimes.

Nevertheless, a serious investigation of the threats North Korea makes in its state-run news could play a particularly important role in understanding North Korean threat perceptions. In the North Korean case, propaganda is one of very few sources of information available to outsiders. Much of what is known about North Korea has been pieced together from scattered clues like comments from defectors, satellite imagery, or public appearances by North Korean elites. Evidence of rare events, such as public appearances, are often gleaned from North Korean news sources.<sup>5</sup> These news reports occur near daily, follow regular patterns, and contains specific details. Analysis of specific news articles can therefore provide helpful information about the North Korean regime. However, systematic analysis on all news articles produced during certain periods has occurred very rarely in the academic literature on North Korea.

Research by Timothy Rich analyzes KCNA articles from 1997-2012 and finds that references to nuclear issues are correlated with references to the United States.(Rich 2014b) This result aligns with the role of the United States as the primary nuclear threat to North Korea and the major actor in negotiations to stop or rollback North Korea’s nuclear program. Similarly, Whang, Lammbrau, and Joo (2018) finds that, preceding five major North Korean provocations<sup>6</sup> North Korea was more likely to reference the Supreme People’s Assembly

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5. For example, Mahdavi and Ishiyama (2020) uses reports from KCNA to identify the presence of elites at “inspection tours” or other visits with Kim Jong Un.

6. the First and Second Battles of Yonpyong in 1999 and 2002, the Battle of Daechong in 2009, the sinking of the Cheonan in 2010, and the shelling of Yongpyong in 2010

and past battles against Japanese colonialism. While neither study systematically identifies threats made by North Korea or examines the effects of those threats, both studies suggest that automated content of KCNA articles can provide context clues about how threatening foreign policy topics or episodes are discussed.

However, research by Mason Richey concludes differently. Richey finds, in an analysis of KCNA articles, that “North Korea’s provocations did not correlate with increased hostile rhetoric in a statistically significant way” (Richey 2019, 556). However, Richey’s study has a few key flaws. First, Richey’s dataset of North Korean rhetoric is incomplete. He collects a dataset of hostile rhetoric between 1997 and 2006 by using the search function on a news site dedicated to aggregating North Korean content (NKNews.org). This list excludes what Richey calls “the typical boilerplate of other similar revolutionary communist regimes,” such as “fascist,” “puppet,” “imperialist,” and others. Since this language is quite common in North Korea’s media, this artificially eliminates a significant number of threats made by North Korea. By selecting only articles with particular keywords, Richey also omits threats that use unusual language, threats where key terms are misspelled (a frequent issue in KCNA), (Rich 2014b) and articles that contain indirect or implicit threats. Additionally, Richey includes only quoted statements that “originate at the highest official levels of the North Korean state, party, and/or military”—yet many of the threats made in North Korean propaganda are not in attributed quotations (Richey 2019, 547). Second, Richey simply tests the correlation between the existence of a military provocation in a given month and the number of threatening KCNA articles in that month. However, if threats signal intent, as I anticipate, they should precede provocations and then may decline after those provocations conclude; this would result in a null effect given Richey’s empirical design. A better test would examine the effect of threats on *subsequent* provocations. If North Korean rhetoric communicates important information about North Korean threat perceptions and intentions, then not only should there be systematic patterns in when and why North Korea makes threats, but also, these threats should also be predictive of North

Korean provocative actions.

### 3 Identifying North Korean Threats

In order to identify when North Korea makes threats against its adversaries, I collect all available English-language articles published by KCNA between December 2nd, 1996 and February 4, 2018. This is a total of 124,173 articles.<sup>7</sup>

Which pieces of North Korean propaganda contain threats? What other types of topics are routinely covered in KCNA? To answer these questions, I run a topic model on the dataset of English-language KCNA articles. After removing stop words, I use a Latent Dirichlet Allocation (LDA).<sup>8</sup> The LDA sorts the KCNA articles into categories defined by the use of common language. While the words associated with each topic in **Table 1** are generated by the LDA, the labels for each topic are provided by the author. This paper

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7. KCNA publishes on two main sites: one hosted in North Korea and a mirror hosted in Japan. The sites publish essentially the same content but have a few differences. The North Korean-hosted website is available from the United States, but the Japanese site is designed to be accessible only from Japanese IP addresses. The Japanese-hosted site has no search function, while the North Korean-hosted site has a very limited search capability. The Japanese-hosted site retains archives back to the late 1990's, while the North Korean-hosted site retains very minimal archives, and those are known to have been edited and curated ex-post. As a result, much of the data used in this paper comes from the Japanese-hosted KCNA website rather than the North Korean-hosted one. However, all or nearly all of the articles on the Japanese site were, at one time, on the North Korean site. While the large majority of KCNA publications are included in this dataset, it remains a possibility that some have been purged from both the Korean and Japanese KCNA sites and are therefore missing—although purged articles are most likely to be about discredited North Korean elites rather than foreign affairs and therefore may have minimal effects on the analyses in this paper.

8. I utilize the LDA from the `topicmodels` package in R. This package requires the user to set a parameter  $k$  for how many topics to create. I present the model with  $k=10$ , because this is the highest number of topics for which a) all topics made sense under clear labels, and b) no topics were repeated. I use the stop words list from the `tidytext` package in R. Note that I do not stem words in order to assess differences between word forms and tenses. This is consistent with the recommendations from Denny and Spirling (2018). I also do not add any stop words to the generic set, although I do remove 'states' from the list of stop words in order to make it easier to identify the bigram 'united states.' Additionally, there are some words which are frequent but not especially meaningful in this particular dataset. For example, KCNA articles often reference other North Korean publications, like Minju Joson and Rodong Simmun. These publications are often associated with days of the week and phrases like 'signed commentary.' This language is also not removed from the dataset but is removed from some visualizations of the data throughout this paper. Tables and figures that omit these words are marked as doing so. I include these words in the overall dataset in order to be able to see when certain topics are heavily associated with non-KCNA publications, but because references to these other publications are so common, their occurrence is ultimately difficult to interpret. Similarly, articles about unrelated topics will often conclude with praise for the current North Korean leader; thus instances of 'Kim Jong Il' or 'Kim Jong Un' are quite frequent and are not always especially meaningful.

represents the first time that topic modelling has been used to systematically identify threats made by North Korea against its adversaries. This approach is superior to dictionary-based and other methods to parse meaning from KCNA articles, because these approaches rely on the researcher’s own assumptions about what language will be used to communicate threats. Especially in the context of North Korean propaganda, where misspellings, errors, and unusual language abounds, automated analysis is useful, as it can detect patterns and meaning that may be missed by human readers or may not align with preconceived attitudes conventional threatening language.

The topic model presented in **Table 1** produces a topic for threats as well as nine additional subjects: diplomacy, culture, economics, ideology, historical aggressions by North Korean adversaries, negotiations, reunification, and South Korean domestic politics. Because each article is assigned a beta value that indicates how closely it aligns with each category, it is possible to use the topic model to identify articles that have to do with threats. The threat topic is associated with words like ‘nuclear,’ ‘military,’ ‘war,’ ‘joint,’ ‘exercises,’ ‘army,’ ‘weapons,’ ‘aggression,’ ‘imperialists,’ etc.<sup>9</sup> This language indicates that the topic focuses on North Korea’s security environment and, in particular, on the dangers that adversaries like the United States pose to North Korea as well as how North Korea threatens to respond to these dangers. I infer, then, that these are the articles most likely to contain threats against North Korea’s adversaries.

However, words like ‘military’ and ‘war’ could be indicative not only of North Korea *making threats* against its adversaries, but also of North Korea discussing threats that it perceives *from* its adversaries. I expect that in nearly all articles discussing threats *to* North Korea, North Korea will also make threats against its adversaries, meaning that all articles sorted into the ‘threat’ topic by the LDA will contain direct threats against adversaries—and many will also discuss reasons why North Korea itself feels threatened.<sup>10</sup> To validate my

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9. This reiterates the concern that, because Richey (2019) excludes threats using the word ‘imperialist,’ many threats are excluded from his dataset.

10. This assumption may not work with other sets of propaganda, but the very high hostility level of North Korean rhetoric makes this assumption more plausible in this case than in many others.

Table 1: LDA Topics and Top 20 Words

Threats	Historical Aggressions	Negotiations	Reunification	Diplomacy	Culture	Economy	Ideology	Leadership	South Korean Regime
u.s.	japan	dprk	reunification	dprk	kim	production	kim	kim	south
war	japanese	u.s.	national	president	art	province	people	il	korea
korean	korean	countries	south	kim	pyongyang	pyongyang	jong	jong	korean
dprk	korean	international	korean	minister	south	construction	il	sung	people
nuclear	koreans	issue	national	people's	youth	factory	party	president	authorities
military	crimes	world	north	vice	performance	korea	revolutionary	committee	north
south	chongryon	human	joint	message	officials	country	korean	leader	lee
korean	past	rights	declaration	foreign	sports	technology	juche	korean	seoul
forces	reactionaries	policy	june	relations	dprk	farm	country	party	u.s.
peninsula	history	talks	15	delegation	korean	county	songun	chairman	puppet
peace	japan's	relations	peace	countries	national	scientific	army	anniversary	regime
moves	people	sanctions	korea	chariman	school	including	revolution	people	park
aggression	imperialists	hostile	statement	party	festival	built	socialist	secretary	held
north	committed	peace	koreans	committee	ri	people	idea	korean	statement
weapons	overseas	security	unity	yong	students	science	leadership	dprk	national
exercises	government	economic	independent	china	jong	people's	nation	juche	public
puppet	women	united	struggle	assembly	university	power	building	study	forces
army	residents	foreign	country	friendship	yong	complex	korean	idea	party
imperialists	war	political	relations	people	held	city	leadership	revolutionary	press
joint	army	people	independence	friendly	women's	field	wpk	association	myung

assumption that articles in the ‘threat’ category defined by the LDA do contain identifiable threats *against* North Korean adversaries, I utilize a qualitative approach where I randomly sample some of the articles that are sorted by the LDA into the ‘threat’ topic and then code them for the existence of a threat against a North Korean adversary.

After randomly sampling 67 articles from the ‘threat’ topic, I code these articles for the presence of a threat. I define threats as statements that identify problematic triggers and use negative or threatening language to describe the trigger. Threats also imply or promise action in response to a trigger. For example, one threat from the random sample reads: “If the Japanese reactionaries dare ignite a war against Asian countries, holding them in contempt, they will not escape a severe punishment.” (KCNA 2000) The threat identifies a specific trigger (Japan igniting a war against Asian countries) as well as a general response (“a severe punishment.”) Because threats contain triggers as well as responses, articles containing threats can often provide information both about North Korean threat-making *and* about North Korean threat perception.

I found that all of the 67 randomly sampled articles in the threat topic category contained threats. This means that the topic model is reliably identifying articles that contain threats. For example, an article on 8/11/17 contains the following language:

“Now when the situation on the Korean Peninsula is inching close to the outbreak of a war, it was reported that the security think tank of Trump devised a plan for preventive war and makes preparations for its materialization. . . it is ridiculous that the U.S. warmongers are unaware of the fact that even a single shell dropped on the Korean Peninsula might lead to the outbreak of a new world war, a thermonuclear war. ‘We consider the U.S. no more than a lump which we can beat to a jelly any time,’ Ri Chol Ui, an officer of the Korean People’s Army said. The U.S. war drills and muscle flexing targeting our strategic bases have gone beyond our patience. . . If the U.S. shows even a slightest sign of preventive war, we will immediately reduce its mainland into a field of nuclear war with strategic nuclear attack means. Preventive war is not a privileged option for the U.S.” (KCNA 2017)

This section contains two very specific threats, with the triggers “a single shell dropped on the Korean Peninsula” and “U.S. shows even a slightest sign of preventive war,” and

the responses “might lead to the outbreak of a new world war, a thermonuclear war” and “we will immediately reduce its mainland into a field of nuclear war with strategic nuclear attack means,” respectively. Compared to the aforementioned threat made to “Japanese reactionaries,” these threats are much more severe, suggesting North Korea’s concerns about U.S. preemption are more intense than those about Japan.

The paragraph above also contains several more general threats, such as that “the situation on the Korean Peninsula is inching close to the outbreak of war,” “we consider the U.S. no more than a lump which we can beat to a jelly any time,” “the U.S. war drills and muscle flexing targeting our strategic bases have gone beyond our patience” and “preventive war is not a privileged option for the U.S.” These comments provide further evidence for the seriousness of North Korea’s concern in this instance and point to recurring themes in North Korean threat perception like fear of U.S. military exercises and U.S. preventive attacks.

While the *tone* and *timing* of the threats is meaningful, note that much of the actual *content* of the threats is fairly meaningless. The implications of threatening to beat an adversary into “jelly” are uncertain, at best, and threats of “thermonuclear war” are not, in and of themselves, credible signals of the intent to use nuclear weapons. The content of North Korean communications is therefore not revealing truthful information about North Korea, although broader patterns in the *occurrence* of threats could provide critical information about North Korean strategic thinking.

The threatening articles identified by the LDA topic model indeed contain threats of military action against North Korea’s adversaries. However, it’s also important to know how precise the LDA is. Do the articles sorted into other the topics also contain threat-making? To answer this question, I randomly sample 25 articles from every remaining topic identified by the LDA to determine which North Korean threats might be missing from the LDA’s ‘threat’ topic.<sup>11</sup> Of the 225 sampled articles, 16 percent contain threats, usually as an addendum to an article focused on a different topic. For example, an article on 7/27/15

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11. The remaining topics are: Diplomacy, Culture, Economy, Historical Aggressions, Ideology, Leadership, Negotiations, Reunification, and the South Korean Regime.

reads:

“Banquets were given for the participants in the Fourth National Conference of War Veterans at the People’s Palace of Culture, Okryu Restaurant, Chongryu Restaurant and the April 25 Hotel on Monday, the v-day. Attending the banquets were Kim Yong Nam, Hwang Pyong So and other officials, officials of the party and armed forces organs and officials concerned. The participants in the conference were present on invitation. The speakers warmly congratulated the veterans who took part in the conference thanks to the great trust and solicitude shown by Marshal Kim Jong Un... The army and people of the DPRK will learn from the spirit of defending the country displayed by the war veterans and thus put an end to the confrontation with the U.S. and accomplish at any cost the historic cause of national reunification and build without fail the biggest power and the people’s paradise looked up by the world on this land, they stressed.” (KCNA 2015).

While this article does contain a warning to the United States that North Korea is willing to “accomplish at any cost the historic cause of national reunification and build without fail the biggest power,” the article is primarily about celebrating North Korean veterans, and the included threat is fairly vague.

Overall, qualitative validation finds that 100 percent of the articles randomly sampled from those identified as threats by the LDA topic model contain threats. Of the remaining articles, 16 percent contain threats. Though it under-counts the total set of threats, then, the LDA appears to successfully identify most instances where North Korea makes threats. Additionally, the threats in the LDA’s ‘threat’ topic appear to be more severe than the threats that were sorted into other topic categories.

North Korea makes threats quite frequently, at an average of 48 KNCA articles per month in the threat topic. The frequency of North Korea’s threats has also increased over time, with threats making up the highest proportion of KCNA articles out of all international topics.<sup>12</sup> By 2017, more than 16 percent of all articles in KCNA contained threats against North Korea’s adversaries.<sup>13</sup> How can these threats—despite their frequency and very high

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12. The international topics include threats, negotiations, reunification, and historical aggression.

13. See appendix for visualization and analysis of trends in topics over time.



level of bellicosity—be used to deduce information about North Korean perceptions and intent?

## 4 Do Threats Signal Intent?

While individual threats are unlikely to be carried out, broader patterns in North Korea’s use of threats can reveal key information about North Korean threat perception. For example, the most commonly referenced terms in North Korea’s threats should indicate areas of particular concern for North Korea. In this regard, there are clear patterns in **Table 2** that show that North Korea’s threats are often associated with events and policies that we might predict would cause serious security problems for North Korea. **Table 2** presents several of the unigrams and bigrams appearing most frequently in the KCNA articles that contain threats.<sup>14</sup> **Table 2** shows that North Korea’s most common threats occur as responses to two types of triggers: military exercises or challenges to North Korea’s nuclear program. For example, North Korean threats often discuss U.S.-South Korean joint military exercises such as the Foal Eagle, Key Resolve, Freedom Guardian, and Focus Lens series. 37.99 percent of all threatening articles include the term ‘joint,’ and 36.36 include ‘exercise’ or ‘exercises.’

North Korea also appears to be concerned about its nuclear program—the threats frequently discuss ‘arms buildups,’ ‘arms races,’ and ‘missile defense’ systems that could reduce the deterrent effect of North Korea’s nuclear arsenal. Almost half of the threatening articles in KCNA use the terms ‘nuclear,’ ‘nuke,’ or ‘nukes,’ while 22.06 percent mention ‘missile’ technology, and 8.13 percent specifically mention the deterrent power of nuclear weapons. North Korea frequently makes threats in response to concerns that it will suffer a ‘preemptive nuclear’ attack or other ‘nuclear threat’ by the U.S.<sup>15</sup> KCNA also regularly discusses

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14. Articles are sorted into the threat topic if the article’s beta value for the threat subtopic, as produced by the topic model displayed in **Figure 1** is  $\geq 0.5$ .

15. **Table 2** also shows that North Korea takes steps to justify its own threats, couching them in language such as ‘preemptive’ or ‘hostile’ that suggests normative assessments about foreign military activities. Examples of justifying language that appear frequently in articles where North Korea makes threats against its adversaries include: ‘aggression,’ ‘warmongers,’ ‘imperialists,’ ‘preemptive,’ ‘threat,’ ‘provocation,’ ‘reck-

‘sanctions’ and other ‘hostile policies’ towards the North Korean nuclear program.

The majority of the top terms that appear in North Korea’s threats have to do with military exercises—this suggests that the use of threats coalesces around these exercises.<sup>16</sup> Severe responses to military exercises may be rational, as exercises improve military interoperability, can be used as cover for mobilizations or surprise attacks, and demonstrate capability and resolve. (Bernhardt and Sukin 2020) This finding reiterates the results of empirical work that show that *actual occurrence* of military exercises increases North Korean threat-making. For example, Bernhardt and Sukin (2020) finds that joint military exercises involving South Korea result both in North Korean kinetic provocations as well as increases in negative sentiments in North Korean propaganda, with more threatening exercises resulting in more significant North Korean responses. This suggests not only that exercises pose a direct threat to North Korea, but that North Korea is responsive to nuances in that threat. Aggressive reactions to perceived challenges to North Korea’s nuclear program are also rational, as North Korea sees its nuclear weapons as essential for the survival of its regime.

This analysis suggests that North Korean threats are not erratic but that, instead, North Korea appears to be responding to real security concerns when it makes threats against its adversaries. Nevertheless, it is possible that North Korea’s threats are strategic, but that they still do not demonstrate resolve. That is, North Korea could be utilizing major events on the Korean Peninsula in order to issue threats and bluff about its level of resolve without actually being significantly concerned about these events. If this is the case, threats should have little to do with North Korea’s costlier actions. While threats would be cheap, and

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less,’ etc. These words portray the idea that North Korea’s adversaries are actively preparing for all-out war against them and might take preventative action against North Korea. Interestingly, the focus on pre-emption provides not only a potential moral basis for North Korean action against its adversaries, but it could also provide a legal one, since preemptive attacks may be considered self-defense and therefore a viable justification for the use of force under Article 51 of the United Nations Charter.

16. For example, 11 of the 30 most frequent unigrams are associated with military exercises. These are: ‘war,’ ‘military,’ ‘forces,’ ‘moves,’ ‘joint,’ ‘puppet,’ ‘aggression,’ ‘exercises,’ ‘army,’ ‘imperialists,’ and ‘attack.’ Of the remaining terms, 7 are associated with nuclear weapons: ‘nuclear,’ ‘force,’ ‘forces,’ ‘threat,’ ‘weapons,’ ‘missile,’ and ‘policy.’ The remaining unigrams are: ‘dprk,’ ‘korean,’ ‘south,’ ‘korea,’ ‘peninsula,’ ‘north,’ ‘peace,’ ‘japan,’ ‘people,’ ‘world,’ ‘situation,’ and ‘asia.’

Table 2: Percent of Threatening Articles Containing Key Terms

<b>Military Exercises</b>		<b>Nuclear Weapons</b>	
Term	% Articles	Term	% Articles
joint	37.99	nuclear/nuke/nukes	48.47
exercise(s)	36.36	nuclear war(s)	22.52
korean puppet(s)	24.75	missile	22.06
drill(s)	24.45	preemptive/preemption/preempt	20.71
joint military	23.63	nuclear weapon(s)	13.25
military exercise(s)	20.7	test(s)	12.16
staged	20.21	preemptive attack(s)	11.62
operation(s)	19.74	hostile policy/policies	11.02
war exercise(s)	13.27	nuclear threat(s)	8.5
foal eagle	10.83	nuclear deterrent(s)/deterrence	8.13
military drill(s)	8.48	nuclear attack(s)	7.77
key resolve	7.76	arms buildup(s)/build	7.53
war move(s)	7.22	sanction(s)	7.43
war drill(s)	6.92	preemptive nuclear	6.74
saber rattling	6.9	missile defense/defence	6.63
war maneuver(s)	6.39	nuclear issue(s)	6.54
freedom guardian	4.33	nuclear strike(s)	5.13
focus lens	2.54	arms race(s)	5.07

therefore easily issued in response to many events, North Korea would only be willing to pay the costs of taking provocative actions in response to a small number of situations.

However, if North Korean threats are rational responses to a tense security environment, threats should be responding to real, difficult conditions that North Korea faces. Moreover, North Korean threats should correlated with other signals of intent and resolve, such as kinetic provocations. We would expect North Korea to issue more threats when it faced more dire circumstances, and therefore to also be willing to take other, costlier actions in response to those situations. Costly actions like initiating cross-border violence or testing missile or nuclear technology can deter adversaries by demonstrating capabilities as well as resolve. However, these actions require significant resources and may backfire, provoking a response by North Korea’s adversaries. As a result, these actions should be rare, but they should occur when North Korea is most concerned about its security environment.

To assess whether North Korean threats coincide with periods of high resolve, I test the

relationship between threats and North Korean provocations; if the relationship is positive, it suggests that threats provide information about North Korea’s level of resolve. Indeed, I find a strong relationship between the two variables. **Figure 1** demonstrates that periods where North Korea makes many threats are often correlated with actual provocations such as cross-border violence, missile tests, and nuclear tests.<sup>17</sup>

**Figure 1** shows the number of articles making threats every month between January 1997 and December 2017 as well as indicating how many provocations by North Korea occurred in each month. Smoothed loess trend lines demonstrate that the frequency of threats and provocations move together. As the density of threats has increased, so too has the density of provocations.<sup>18</sup> This contradicts existing findings on this issue, which instead suggest that threats and provocations are unrelated (Richey 2019). **Figure 1** demonstrates that tensions have increased in recent years, with both threats and provocations becoming more common over the last ten years. Most importantly, the figure shows that, while individual threats occur quite frequently and cannot individually predict North Korean actions, the *volume* of North Korea’s threats correlates with the pattern of North Korean provocations.

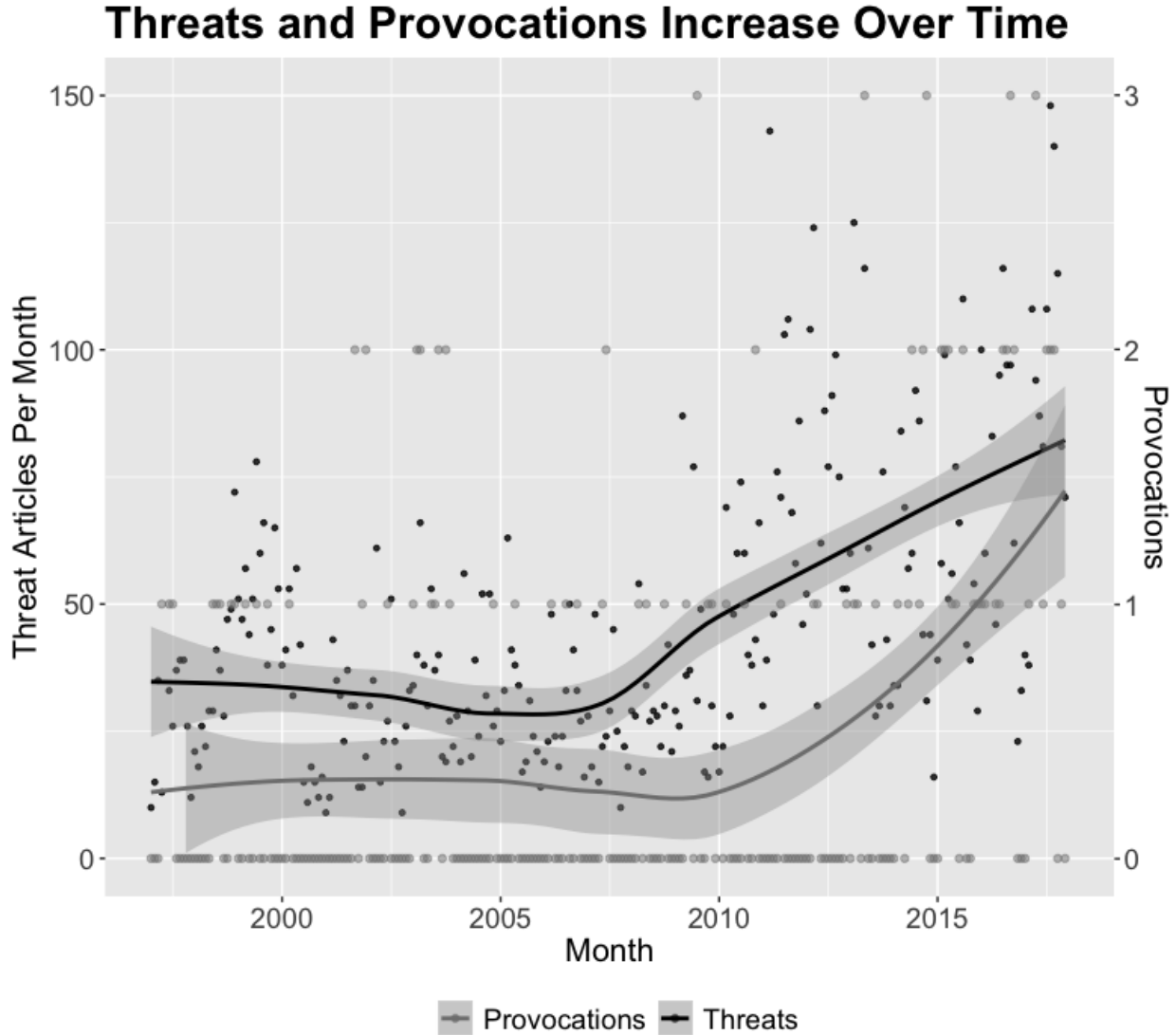
Interestingly, North Korean threats also seem to correlate with military capacity. Threats and provocations both increase after North Korea obtains a nuclear capability. Given the risks associated with both the use of threats and with provocations, it makes sense that North Korea would be more willing to engage in these strategies once it had acquired the ability to deter its adversaries.

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17. The provocation data is from the CSIS Beyond Parallel database and is publicly available. It contains information on missile tests, nuclear tests, and other provocations. Most other provocations are instances of cross-border violence.

18. Articles are categorized into the single topic for which they have the highest gamma value.

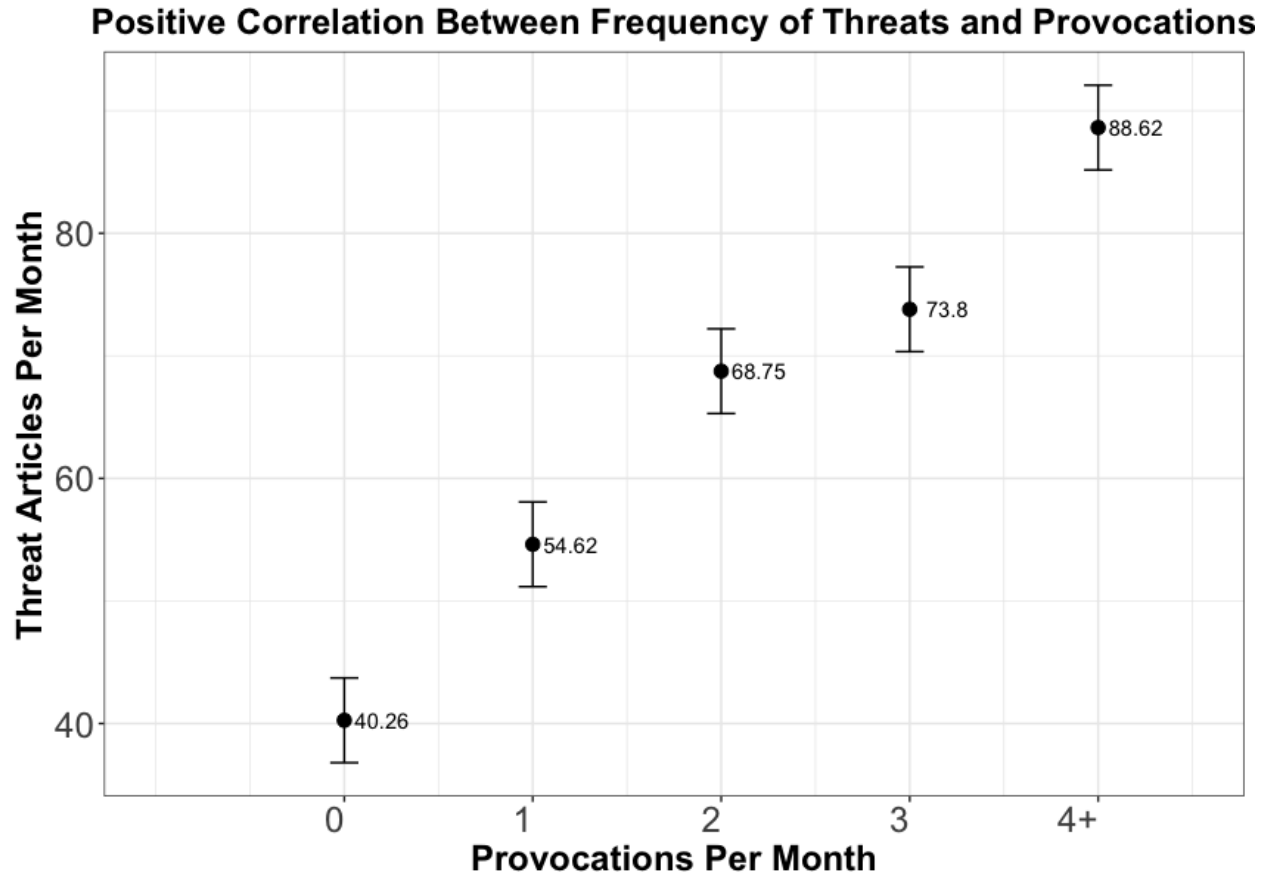
Figure 1



**Figure 2** shows that months with provocations have more threats than months without; this reiterates the fact that North Korea is more likely to produce threatening propaganda when its level of resolve is high. The median number of KCNA articles containing threats per month is 48 across all months, but in months where at least one provocations occurred, that number increases to 62. In months without provocations, the average number of articles containing threats is 40. There is a statistically significant increase in the number of threatening articles of about 54 percent between months with versus months without provocations. Moreover, as the number of provocations per month increases, so too does the number of

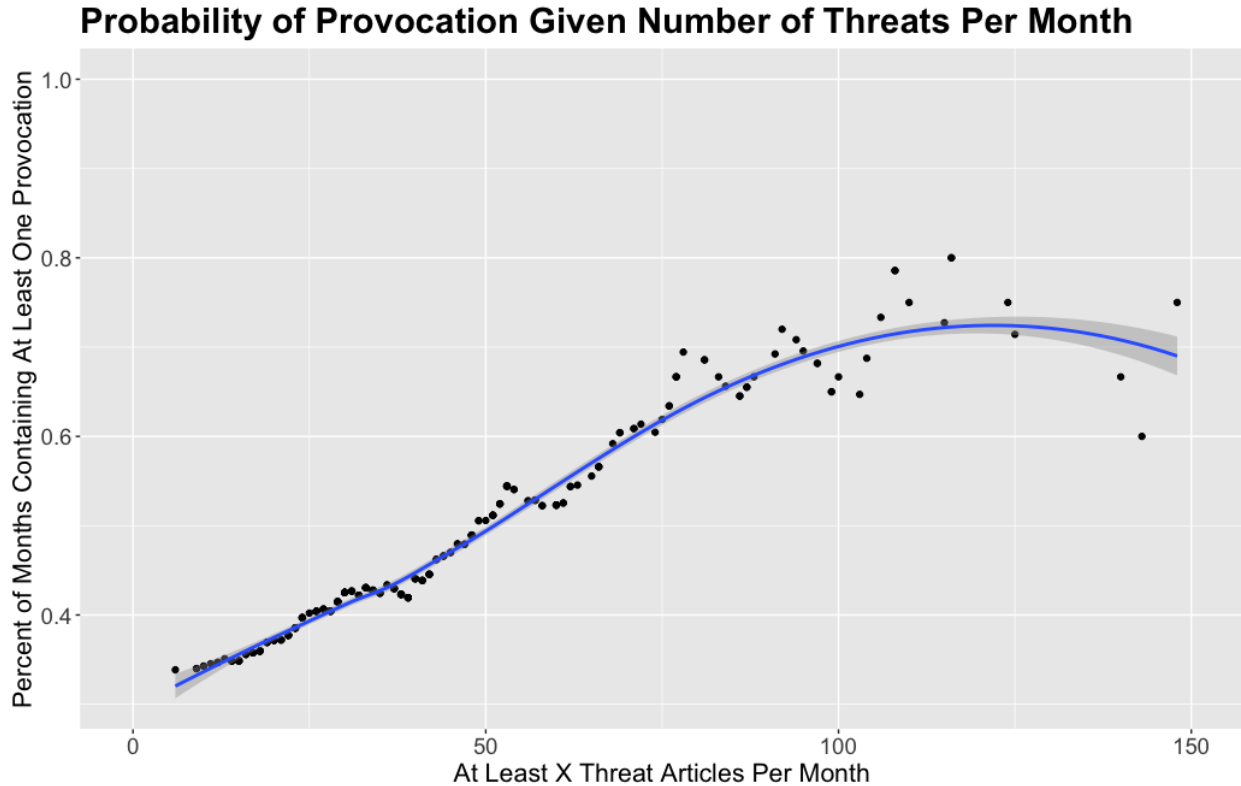
threats. This provides evidence that North Korea's rhetoric is indeed tied to its choice to engage in kinetic acts of aggression.

Figure 2



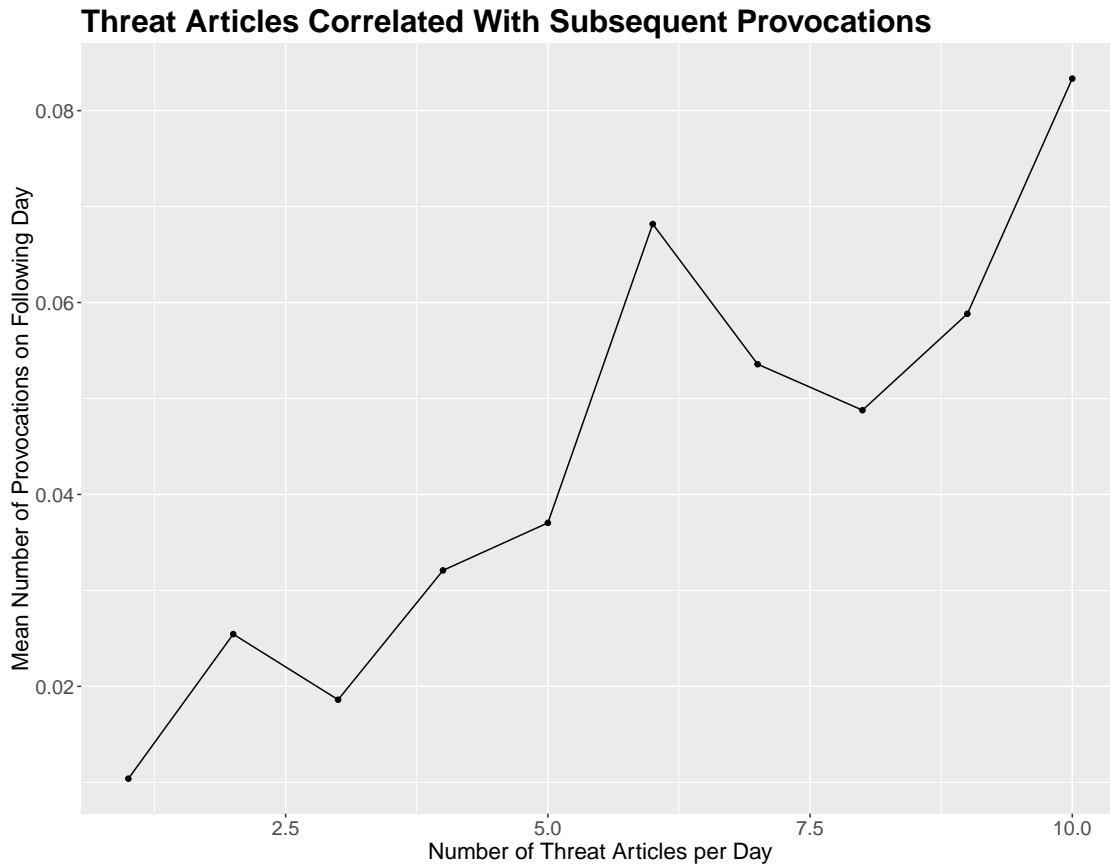
While not all months with high levels of threatening propaganda experience a provocation and some months with provocations have low levels of threatening propaganda, both situations are relatively rare. The probability of a provocation occurring increases as the number of KCNA articles containing threats increases. **Figure 3** shows the likelihood of a provocation occurring as threats increase; it illustrates this trend using a loess trend line. Two-thirds of months with at least 100 articles containing threats also have a provocation occur, while about 35 percent of months with at least 15 articles containing threats have a provocation occur.

Figure 3



Importantly, threats are not only correlated with provocative actions, but they also precede these actions. North Korea may be using the less expensive tool of threats to indicate resolve in the hopes of deterring adversary behaviors; if this fails, North Korea has the option of initiating a provocation. **Figure 4** shows that as the number of threats per day increases, so too, generally, does the likelihood of a provocation the following day. For example, a provocation is about eight times more likely to occur if the previous day had ten threatening KCNA articles than if it had just one. Given the rarity and severity of provocations, this pattern is important and could potentially help policymakers identify times that provocations by North Korea are more or less likely to occur. With this information, policymakers could prepare responses or take proactive steps to dissuade North Korea from taking a provocative action. While there is a noisy background of threats due to North Korea’s essentially constant production of threatening propaganda, changes in the volume of threats are meaningful in that they correlate with subsequent provocative actions.

Figure 4



**Table 3** reiterates the finding that not only is it the case that the number of threats made by North Korea in its state media is correlated with whether or not a provocation takes place that week, but also that threats can be used to predict *future* action. In a bivariate regression (Model 1), every additional threatening article that occurs in a week is correlated with an increased likelihood of a missile or nuclear test taking place the following week by about 1.4 percentage points. That means that a week that sees an increase of threatening articles by one standard deviation (9.45 articles) from the mean of 11 articles results in a 13 percentage point increase in the likelihood of a missile or nuclear test occurring the following week. Given the immense significance of actions such as nuclear and missile tests and the substantively large nature of this correlation, this result has important political implications. An improved ability to predict North Korean nuclear activities could help inform U.S. and South Korean responses to high-tension periods and could allow these states to better prepare



for North Korean nuclear actions, thereby lowering the risks of miscalculation and accidents.

The positive correlation between the number of threatening articles in a week and missile or nuclear tests occurring in the following week continues to be significant after controlling for other types of articles (Model 5) and the occurrence of a different major provocation the same week as the threats are released (Model 7). The number of threatening articles in a week is also positively correlated with the occurrence of nuclear and missile tests in that same week and in the previous week. This means that threats occur before, during, and after provocations. However, more threats occur before a provocation than during or after, as might be expected.

These findings hold up when using Newey-West standard errors,<sup>19</sup> which help address the serial correlation that occurs in time-series data. Further robustness tests demonstrate that the number of threatening articles on a given day is also positively correlated with the likelihood of a missile or nuclear test occurring on the following 1, 4, 7, and 10 days.<sup>20</sup> The effect also holds when including linear time trends.

The robust finding that threats are correlated with subsequent provocative actions contradicts existing empirical work on this question (Richey 2019). It also provides evidence against both the theoretical consensus that North Korean threats are irrational or meaningless *and* the view that crisis communications reveal truthful information about capabilities and resolve. Instead, while individual communications reveal little, patterns in the content and frequency of North Korean threats reveal important information about North Korean threat perception. That threats have concrete political implications is important. Better assessments of when and why North Korea might engage in provocations could help improve American and South Korean preparedness and responses to instances of North Korean aggression.

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19. The Newey-West standard errors increase the significance of threats in all models with control variables, so normal standard errors are presented here, since they pose a harder test for my theory.

20. See appendix.

Table 3: Effect of Threats on Missile and Nuclear Provocations

	<i>Week</i>						
	Same (1)	Next (2)	Previous (3)	Same (4)	Next (5)	Previous (6)	Next (7)
Threats	0.010*** (0.003)	0.014*** (0.004)	0.012*** (0.003)	0.008** (0.003)	0.012*** (0.004)	0.012*** (0.003)	0.014** (0.006)
Historical Aggressions				-0.023*** (0.011)	-0.005 (0.011)		0.006 (0.021)
Negotiations				0.001 (0.009)	-0.005 (0.008)		-0.035** (0.014)
Reunification				0.005 (0.006)	-0.0002 (0.008)		0.022 (0.021)
Diplomacy				0.002 (0.005)	0.002 (0.005)		0.016 (0.011)
Culture				0.006 (0.009)	-0.011 (0.009)		0.009 (0.023)
Ideology				0.009 (0.006)	0.012* (0.007)		0.012 (0.010)
Leadership				0.003 (0.003)	0.003 (0.003)		-0.006 (0.006)
South Korean Regime				0.009** (0.005)	0.006 (0.005)		0.007 (0.009)
Provocation (Same Week)							-0.040 (0.120)
Constant	0.510*** (0.067)	0.478*** (0.067)	0.478*** (0.067)	0.174 (0.147)	0.288** (0.130)	0.478*** (0.067)	0.165 (0.375)
Observations	125	126	127	125	126	127	33
R <sup>2</sup>	0.075	0.108	0.099	0.277	0.204	0.099	0.479
Adjusted R <sup>2</sup>	0.068	0.101	0.092	0.221	0.142	0.092	0.243

*Note:* \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

## 5 Threat Credibility and Effects on Audiences

Threats can also have consequences because of how they are perceived by their targets. For those living in high-threat environments, how much does interstate communication about security issues actually matter? For example, threats are consistently present in North Korean propaganda and, as I have shown, the content of these threats is often extreme. Thus it is possible that those on the receiving end of North Korea’s threats—namely, South Koreans, as the population most susceptible to North Korean aggression—view the threats as erratic or irrational and are therefore no longer attuned to them. However, the irrationality theory does not actually appear to accurately describe how South Korean citizens perceive and respond to North Korean rhetoric. Instead, North Korean rhetoric is taken seriously and can affect South Koreans’ perceptions of their security environment and even alter their policy preferences. This demonstrates the *mechanism* through which the frequent use of threats by North Korea may have meaningful political effects.

I investigate the effect of North Korean rhetoric on South Korean public opinion using a survey run in South Korea from February 23rd to March 23rd, 2018. The survey had 2,242 respondents and was balanced through the use of quotas. It was nationally representative on gender, income, and ages 18-48.<sup>21</sup>

Respondents were given a Korean-language survey and assigned one of three scenarios about a generic U.S.-South Korea joint military exercise. All respondents were told that, “The United States and South Korea have an upcoming joint military exercise.” Approximately one-third of respondents were assigned to the control condition of the experiment. In the control condition, respondents were then told, “In the past, North Korea has called for such exercises to be cancelled,” and they were asked, “Should the exercise be cancelled?”

The same question was asked of respondents in the two treatment conditions, which each received approximately one-third of the total respondents. The first treatment condition was

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21. There were 339 individuals 49 and older, which limits inference about this age group. The lack of older respondents is due to the online nature of the survey. Note that all effects hold when controlling for age.

the ‘promise’ condition, in which respondents were told that, ‘North Korea has promised to cease nuclear and missile testing if the exercise is cancelled.’ The second treatment condition was the ‘threat’ condition. In this condition, respondents were told that ‘North Korea has threatened to resume nuclear and missile testing if the exercise is not cancelled.’

This experiment allows a gauge of how South Koreans respond to different types of North Korean rhetoric. In particular, the experiment compares how South Koreans respond to positive messages (the promise condition) versus neutral (control condition) or negative (threat condition) messages.

The irrationality and cheap talk approaches would suggest that none of these messages would have an effect on South Koreans’ attitudes, since audiences would either not perceive the messages as being directed at them or would not view the messages as credible signals of intent. However, I anticipate that North Korean messaging is seen as communicating valuable and true information about North Korea’s intentions and therefore has the ability to change political preferences in its audience.

While the treatment does not provide South Koreans with actual KCNA articles, it does speak to these articles’ effects by demonstrating how different types of messages affect public attitudes. As KCNA and other North Korean propaganda generally cannot be read by South Koreans, they are often informed of North Korean threats and other rhetoric through third-party sources summarizing communications from the North Korean regime. The survey experiment therefore approximates messages from North Korea in a simplified form and demonstrates their effects. It is especially plausible that North Korea would make statements about military exercises, as this is a common subject of KCNA’s threats.

I find that the proportion of respondents that favor cancelling the joint military exercise increases from the baseline of 13.83 percent in the control condition to 37.47 percent in the threat condition and 25.97 percent in the promise condition. Two-sided t-tests demonstrate that the distribution of preferences varies significantly between each condition. Because treatment is randomized—meaning the distribution of individuals with various demographic

characteristics, political views, and attitudes towards North Korea is similar in all treatment groups—the treatment itself should be the factor driving the differences displayed in **Table 4**.<sup>22</sup> These findings indicate that South Koreans systematically respond to—and appear to view as credible—messages from North Korea. In fact, messages from North Korea, in this experiment, appear to actively change respondents’ attitudes about an important security policy issue.

Table 4: Effects of Treatment Condition on Exercise Preferences

	Continue Exercise (%)	Cancel Exercise (%)
Control	86.17	13.83
Promise	62.53	37.47
Threat	74.03	25.97

There are two key findings from these survey results. First, in all conditions, the majority of South Koreans prefer to continue the joint military exercise. Respondents who chose to continue joint military exercises tended to explain their reasoning as wanting to maintain military preparedness and to deter North Korea.<sup>23</sup> Many such respondents indicated concern about maintaining non-military aspects of the relationship with the United States, such as diplomatic and economic ties. This highlights an important trade-off for U.S. policymakers—although, as established, North Korea is quite concerned about joint military exercises, cancelling them is not a straightforward option because of their significant importance to U.S.-South Korean military interoperability and to the U.S.-South Korean alliance.

The second major finding of this survey is that—although a minority of respondents prefer to cancel the joint military exercise in each experimental condition—both the threat of resuming missile and nuclear tests if the exercise is not cancelled and the promise to refrain from testing if the exercise is cancelled were correlated with increases in support for

22. However, I also provide regression models explicitly testing the effect of the treatments after accounting for various control variables (see **Table 6**).

23. The least common reasons to continue military exercises were to deter countries other than North Korea. Approximately 12.5 percent of respondents expressed an interest in continuing exercises in order to deter China, while 9.7 percent were interested in deterring Japan, and 4.6 percent chose deterring Russia as one of the top two reasons to continue military exercises.

Table 5: Top 2 Reasons to Continue

	Control	Promise	Threat
Maintain Economic Relationship with U.S.	0.20	0.17	0.17
Maintain Diplomatic Relationship with U.S.	0.39	0.34	0.37
Maintain Military Preparedness	0.65	0.64	0.62
Deter North Korea	0.52	0.55	0.57
Deter Japan	0.09	0.11	0.10
Deter Russia	0.04	0.05	0.05
Deter China	0.12	0.14	0.12

exercise cancellation. One explanation for this finding is that South Korean respondents view North Korea’s threats and promises as sufficiently credible that they are willing to alter their preference on important military strategy issues in response. This aligns with the findings of other survey work showing that North Korea can credibly signal its intentions; for example, South Koreans and Americans are responsive to North Korean threats to use or promises not to use nuclear weapons during a conventional conflict (Sukin 2019b).

The effect of the threat and promise treatment conditions is demonstrated in **Table 6** and is robust to the inclusion of a number of controls such as respondents’ political ideology, their interest in foreign policy news, their estimate of the likelihood of war with North Korea within the next 10 years, and a number of demographic characteristics.<sup>24</sup> Although political attitudes (such as progressive political ideology) may have important effects on respondents’ attitudes about joint military exercises, messaging from North Korea has its own effect, even when controlling for these other factors. Moreover, the effect of North Korean messaging is substantively large; threats, for example, were associated with an increase in support for exercise cancellation by about 23.5 percentage points. In comparison, progressive ideology was associated with an increase in respondents’ support for exercise cancellation by only 1.3 percentage points.

Respondents in both the promise and threat condition are more likely to support exercise

24. Women are more likely to support exercise cancellation than men, and progressive ideology is associated with an increase in support for exercise cancellation. Increases in an individual’s education level are negatively correlated with support for exercise cancellation.

Table 6: Effects of Treatment on Support for Exercise Cancellation from Linear Probability Models

	Cancel Exercise (1)	Cancel Exercise (2)
Promise	0.236*** (0.022)	0.235*** (0.023)
Threat	0.121*** (0.022)	0.114*** (0.024)
Progressive		0.013* (0.007)
Interest in Foreign Policy		-0.005 (0.005)
War with DPRK Likely within 10 Years		-0.007 (0.006)
Female		0.090*** (0.020)
Salary		0.002 (0.006)
Education		-0.025*** (0.009)
Age		-0.001 (0.007)
Constant	0.138*** (0.016)	0.077 (0.065)
Observations	2,242	1,947
Adjusted R <sup>2</sup>	0.048	0.063

*Note:* \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

cancellation specifically to avoid nuclear or missile testing. While 25 percent of respondents in the control condition choose to cancel the exercise to avoid missile testing and 39 percent chose to cancel to avoid nuclear testing, these numbers increase to 31 and 44 percent in the promise condition and 29 and 43 percent in the threat condition. Since nuclear and missile testing was the subject of the threat or promise that North Korea made in the experiment, we would expect this result to occur if respondents were taking the messages in the experimental treatments seriously.

Table 7: Top 2 Reasons to Cancel

	Control	Promise	Threat
Avoid Missile Testing	0.25	0.31	0.29
Avoid Nuclear Testing	0.39	0.44	0.43
Avoid DPRK Threats	0.23	0.21	0.20
Improve Relations With DPRK	0.36	0.32	0.33
Avoid War With DPRK	0.39	0.40	0.42
Reduce Reliance on US	0.38	0.32	0.33

The mechanism this survey experiment demonstrates implies that both the threats and

the promises that are present in North Korean propaganda could be capable of changing the opinions of South Koreans about their security environment and about what actions should be taken in response to ongoing tensions with North Korea. Public pressure, in turn, can sometimes encourage states to take certain actions or can restrain their policy choices (Schultz 2001; Weeks 2008). That rhetoric has tangible implications for the regional security environment and can alter the costs and benefits of certain policy options for governments implies it is not an inexpensive or inconsequential tool for governments to use. Moreover, this logic provides a rationale for why North Korea might be interested in making threats—doing so can provide crucial leverage by swaying foreign audiences.

## 6 Conclusion

This paper has found that North Korean propaganda—and specifically, the threats made by the North Korean regime—can be used to illuminate North Korea’s strategic thinking about its security environment. Although specific, individual threats are unlikely to be carried out, analysis of broad patterns that occur in the content and frequency of North Korean threats can help identify the logic of North Korean threat perception and point to the factors that are North Korea’s most significant security concerns.

The analysis presented in this paper reveals that North Korea is primarily concerned about two types of threats: the first is the threat of attack that is inherent to military exercises; the second is the threat posed to North Korea’s strategic interests expanding foreign influence abroad, technological developments by its adversaries, and challenges to its nuclear program. The systematic use of threats to respond to these high-priority security concerns suggests that North Korean threats are, contrary to the existing consensus, rational and, moreover, that they provides clues as to what issues North Korean leadership finds most critical.

This paper finds that patterns in the content and issuance of North Korean threats



has real implications for the regional security environment. First, threats are associated with subsequent actions. This paper finds that increases in the number of threats made by North Korea are correlated with increases in the likelihood that North Korea subsequently undertakes major provocative actions such as missile or nuclear testing. This contradicts the expectations and findings of the ‘cheap talk’ approach, which argues that because rhetoric is not costly, it does not provide real information about preferences, capabilities, or intent. It also contradicts the opposing view that individual crisis communications provide accurate information about capabilities and resolve.

Second, I find that threats can have consequences on their target audiences. Citizens of South Korea are attuned to North Korean messaging and even change their preferred policies in response to North Korean threats or North Korean promises of concessions. This finding suggests North Korea’s rhetoric is strategically important in its own right and can change the security environment. This provides another reason why further study of North Korean propaganda could shed light on the tensions and dynamics on the Korean Peninsula.

These findings weigh in on the debate over whether North Korean behavior and rhetoric is rational. This debate has important political implications and has occurred at the highest levels of U.S. policy. For example, recent U.S. presidents’ positions on the nature of North Korea have fallen on different sides of this ongoing debate. Jihwan Hwang (2004) writes that the Bush Administration viewed “North Korea as an irrational revisionist state,” due to its “rogue behavior,” while the Clinton Administration “felt that North Korea could be understood through the security dilemma,” and that diplomacy was thus the best way forward (Hwang 2004). At the time, the Clinton Administration’s view was the exception, not the rule. A 1994 *Security Dialogue* article by Denny Roy calls the characterization of North Korea as irrational an “unquestioned assumption among Pyongyang’s adversaries” (Roy 1994).

The Obama Administration’s stance on the value of negotiations with North Korea has been described as similar to that of the Clinton Administration; the Obama-era ‘strategic

patience’ policy was oriented towards a combination of negotiations and economic sanctions (Olsen 2010). This perspective suggests an underlying view about the rationality of the North Korean regime, as well as a belief that economic instability would crucially threaten North Korean elites. However, some have questioned whether strategic patience was truly a negotiations-forward policy, saying that it more closely matches so-called ‘take-it-or-leave-it’ diplomacy (Choi 2015). Stephen Walt describes this tactic as “a regrettable tendency to issue demands and make threats but not to engage in genuine diplomacy” (Walt 2014). In this perspective, the Obama Administration did not sufficiently understand North Korean strategic thinking, despite recognizing—on some level—the rationality of its behavior.

The Trump Administration’s wavering approach to North Korea reflects the wide variety of arguments that have been made about the nature of the North Korean regime. President Trump has alternated between calling North Korea “mad” and, at other times, describing Kim Jong Un as a strong and rational leader who is interested in economic growth and reintegration with the international order (Dombrowski and Reich 2017). Yet the Trump Administration’s negotiations with North Korean leadership have floundered, and North Korea has continued to develop its missile and nuclear programs. This suggests that the U.S. continues to lack a sufficient understanding of North Korean policies and strategic priorities.

This research suggests that U.S. policy towards North Korea should keep in mind the rationality of North Korean behavior. In particular, North Korean rhetoric may help analysts predict and understand North Korea’s provocative behaviors. This may, in turn, allow policymakers to be better able to prepare for and respond to North Korean provocations as well as to consider what policies might strategically alleviate North Korean concerns about its security environment.

Policymakers may be able to more deeply understand North Korea’s strategic priorities and resolve by looking to previously under-utilized sources of information about North Korea, such as state news. North Korea’s rhetoric—in particular, its threats—contain valuable

information when and why North Korea feels threatened. For example, this paper presents a number of events and policies—including large military exercises like Foal Eagle and Ulji Freedom Guardian/Ulji Focus Lens, the development of missile defense technology, and challenges to the North Korean nuclear program—that cause North Korean threats to emerge. These may be fruitful areas to focus on for diplomatic strategies with North Korea, as these areas may provide the United States and its allies with useful bargaining chips due to their strategic importance in the North Korean conception of its security environment. Furthermore, this paper suggests that not only is North Korea acting rationally in its threat-making, but also that it recognizes the interaction between diplomacy and security. In several cases, North Korea discusses diplomatic options as or in response to security concerns and, overall, its proposals for diplomacy increase when the presence of external threats is low. This suggests that bargaining over activities that North Korea finds threatening may create space for diplomatic engagement.

There are several questions about North Korean threats that remain unanswered which further work ought to more deeply investigate. For example, future studies could examine how patterns in North Korean threats have changed across different North Korean, South Korean, and American administrations. Researchers could also further examine responses to specific events such as developments in missile defense, U.N. Security Council Resolutions condemning North Korean actions, or cross-border incidents of violence, in order to understand in more depth North Korean thinking about these particular issue areas. Future research could also utilize the Korean-language KCNA publications to understand the differences between messaging targeted to domestic versus international audiences.

This research suggests that the analysis of threats is useful for policy-making because these threats signal intent and resolve, even when they come from states or leaders that are sometimes considered irrational. This suggests that there may be benefits to renewed study of the frequently aggressive rhetoric between Israel and its Arab neighbors, from Iran to Israel and the the United States, from Russian state-owned news sources, or from President

Trump's Twitter account. The threatening rhetoric contained in these sources may reveal important strategic information about the priorities and intentions of these actors.

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## 8 Online Appendix

### 8.1 Frequency of Threat-Making

**Figure 5** demonstrates the distribution of articles on certain topics over time.<sup>25</sup> In most years, the topic making up the highest proportion of articles on international issues is the threat topic, followed by negotiations, reunification, and then historical aggression. This suggests that the highest priority for the North Korean government—at least in terms of its foreign policy—is its physical security. Moreover, it is clear that this concern has fluctuated over time but returned to prominence in recent years; since 2011, the proportion of articles in the threat category has greatly exceeded the presence of articles in other categories. By 2017, more than 16 percent of all articles in KCNA contained threats against North Korea’s adversaries.

The articles in the reunification topic are the most peaceful and positive of the articles related to international affairs. Frequently mentioned words in these articles include: peace, peaceful, solidarity, achieve, support, and cooperation (see **Table 1**). When KCNA is focused on making threats, references to reunification dip quite low. When the frequency of threats is high, however, talk of reunification declines. The presence of the reunification topic is important because it indicates that despite the aggression of the North Korean regime, there is at least some degree of interest in reconciliation with the international community (or at least South Korea). A total absence of this topic would suggest an extremeness to North Korean policy that would not bode well for policies prioritizing engagement or diplomacy. Yet it is important to note that the the proportion of KCNA articles about reunification has experienced a downward trend over time, reaching a low point in 2017 at less than 2 percent of all articles.

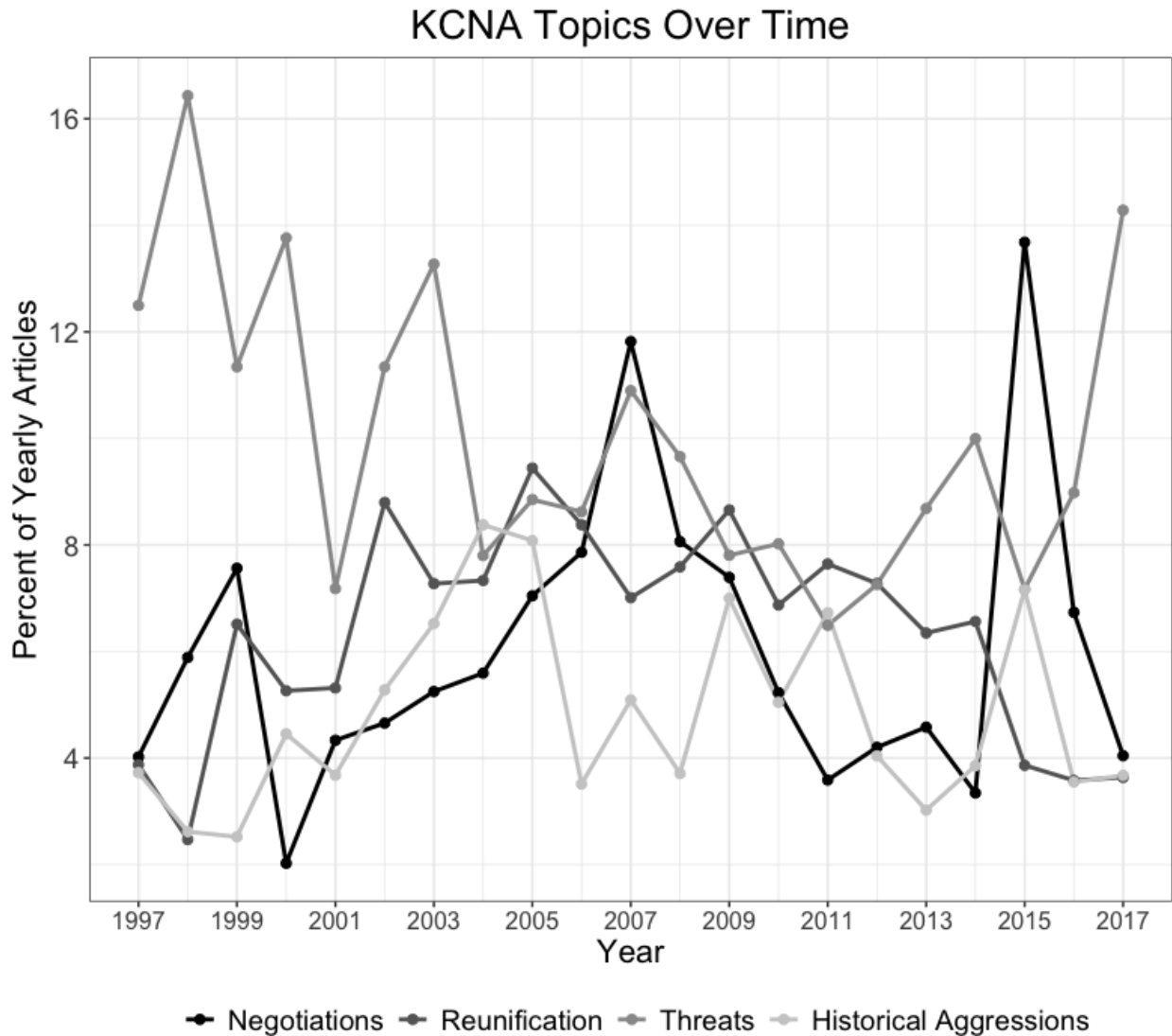
**Figure 5** demonstrates that the frequency with which North Korea makes threats related

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25. Note that for this analysis each article is classified in only one topic based on the highest gamma value assigned to the article (from the LDA depicted in **Table 1**) and the topic associated with that value. The included topics are threats, reunification, and historical aggression. The excluded topics are diplomacy, culture, economy, ideology, leadership, negotiations, reunification, and the South Korean regime.

to its security is quite high and, moreover, that it has been on an upward trajectory in recent years, reflecting the fact that tensions on the Korean Peninsula are high and rising.

Figure 5



## 8.2 Validation of Analysis of the Content of North Korean Threats

To further validate the inferences presented **Table 2**, I apply an LDA topic model to the articles sorted into the threat topic in order to determine if the model will pick up on similar insights as my qualitative coding process. To do this, I take the articles coded as containing

threats and then apply a topic model to this subgroup of all propaganda in order to identify distinct topics within the articles that contain threats.

This secondary topic model identifies the same two distinct trigger types as were shown in **Table 2**: military exercises and strategic threats. **Figure 6** presents top words in each of the two subtopics that are unique top words for that subtopic. That means words like ‘war’ and ‘nuclear,’ which are common in articles responding to both trigger types, are excluded from **Figure 6**. The figure shows that the exercises trigger is associated with words like, ‘weapons,’ ‘attack,’ ‘drills,’ ‘preemptive,’ ‘staged,’ and ‘exercise.’<sup>26</sup> Language about strategic triggers frequently contains references to ‘imperialists,’ ‘missile,’ and ‘defense,’ as well as geographic indicators like ‘pacific’ and ‘region.’<sup>27</sup>

The two subtopics found by the secondary LDA point to two types of triggers that North Korea finds especially important and responds to by making threats. These triggers encompass many of the terms previously identified in **Table 2**. Moreover, the presence of these categories empirically reiterates the findings from more theoretical research on the North Korea regime that suggests its behavior is composed of rational attempts to guarantee and legitimize both its sovereignty and its physical security (Hong 2011; Ikenberry and Moon 2007; Kang 1995; Kim 2013).

### **8.3 Themes within Threats: Content Analysis of Sampled Articles from Threat Topic**

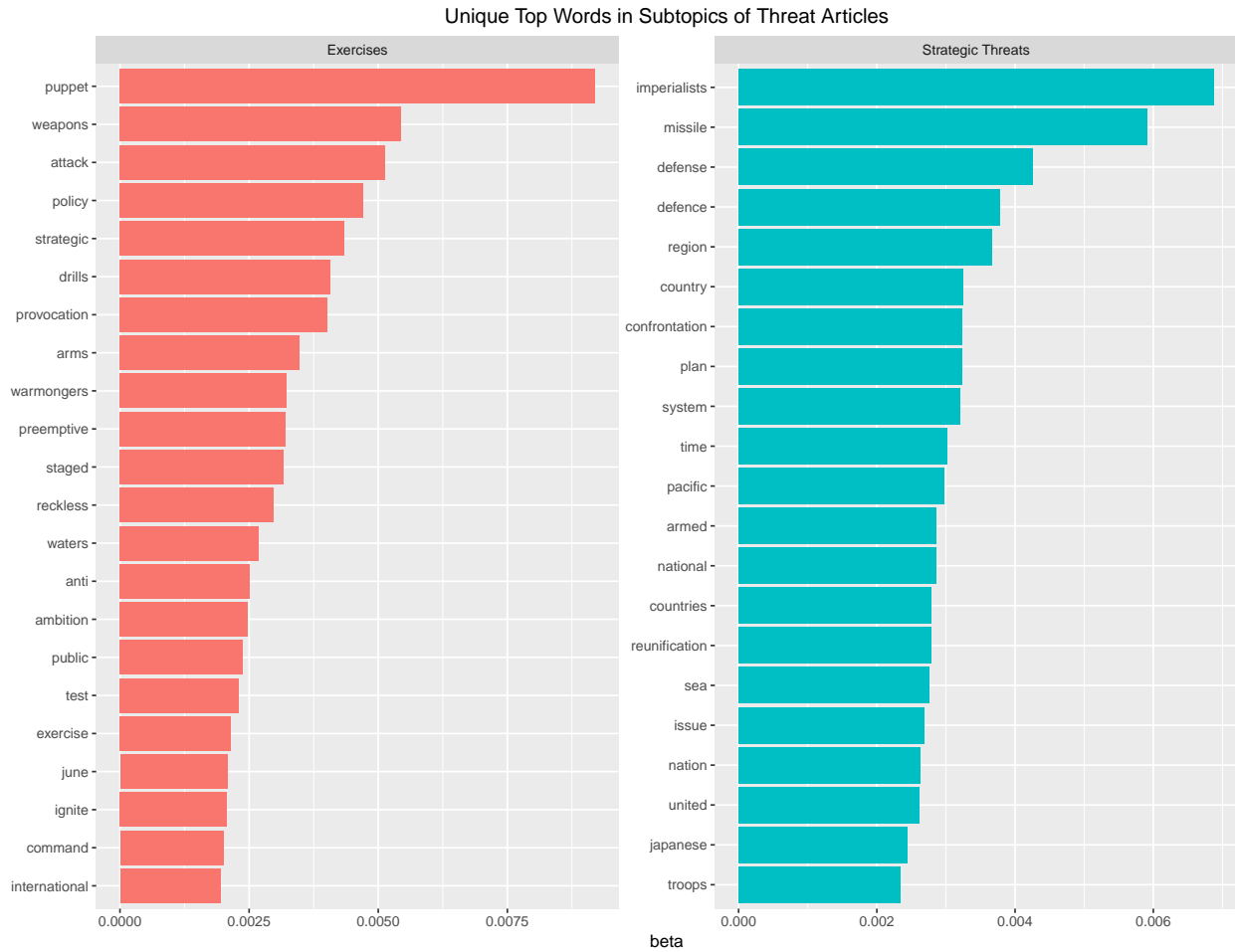
To verify the fact that the articles identified by the LDA as threats do contain threats, I randomly sample 67 KCNA news articles that were sorted into the ‘threat’ topic by the LDA and then qualitative code these articles for the presence of at least one of two types of threats:

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26. The term ‘puppet’ is often used to refer to the South Korean military’s reliance on and responsiveness to the United States. The term ‘strategic’ does appear in the top words for the Exercises topic; this is because it is frequently used in discussions of military activities, such as in the phrases ‘Strategic Command’ and ‘strategic bombers’ as well as the ‘Strategic Deterrence Options’ series of military exercises.

27. The LDA provides the the words within each topic and their frequency, but the labels for each topic are provided by the author.

Figure 6



explicit and implicit threats. While implicit threats identify problematic triggers and use negative or threatening language to describe the trigger, they do not react to these triggers with specific responses promising action. Explicit threats, on the other hand, portend a particular response to a trigger. They therefore provide greater context for how important North Korea perceives a certain trigger to be.

Of the 67 randomly sampled articles, 50 contain explicit threats. In these articles, I identify the explicit threats then delineate the triggers and responses invoked in each threat. After doing so, I use an iterative open coding scheme to analyze themes present in the explicit threats. **Table 8** describes the codes applied to the triggers and **Table 9** describes the codes applied to the responses.

**Table 8** shows that the most frequently referenced trigger is military exercises, followed by risks of war, and then preemptive strikes. The open-coding scheme also identifies several strategic threats. Some themes associated with strategic threats have to do with the close relationship of South Korea and the United States, nuclear weapons, violations of territory or sovereignty, and threats to regional security. That the themes identified here align with those discovered and discussed in the automated text analyses presented in this paper validates and reiterates the importance of those findings.



Table 8: Codes for Triggers from Explicit Threats

<b>Code</b>	<b>N</b>	<b>Example of Trigger</b>
Alliance	10	‘if it [South Korea] thinks it can threaten the DPRK through the tightened alliance with its American master and bring down the DPRK’ (articleID=54063, date=6/16/09)
Nuclear War	5	‘The green light to implement the plan for a nuclear attack on the DPRK already worked out and announced by the U.S.’ (articleID=21965, date=4/22/02)
Territory	4	‘The Northern Limit Line is an illegal line that the U.S. forces side unilaterally set deep inside the DPRK territorial waters disregarding the KAA and the international law. The U.S. forces sides insistence on the line was an grave encroachment upon the DPRKs sovereignty.’ (articleID=11283, date=9/3/99)
Defense	1	‘If the South Korean puppet regime persists in its puppy-like behavior calculating that it can stifle the compatriots in the North and attain all other ill advised purposes with the backing of outsiders’ (articleID=109824, date=2/19/16)
Justice/Sovereignty	6	‘To the aggressors who dare hurt its dignity and sovereignty even a bit’ (articleID=118110, date=3/4/17)
Tensions/Crisis	5	‘The U.S. is deliberately escalating the tension it is to block the DPRK’s drive for economic prosperity and realize its wild ambition for aggression at any cost.’ (articleID=91679, date=11/2/13)
Missile Defense	5	‘in case THAAD is deployed in South Korea’ (articleID=109824, 2/19/16)
Preemptive Strikes	10	‘The U.S. and South Korea adopted the tailored deterrence strategy aimed to mount a preemptive strike at the DPRK even with nuclear armed forces in the U.S. mainland involved.’ (articleID=91610, date=10/31/13)
Military Forces/Exercises	28	‘The recent U.S. war drills and muscle flexing targeting our strategic bases have gone beyond our patience.’ (articleID=121162, date=8/11/17)
War	13	‘If the U.S. ignites a war against the North’ (articleID=113094, 6/30/16)
Japan	5	‘Japan is restoring its past policy of aggression. It is now putting spurs on its conversion into a military power. This is illustrated by the ever-increasing military expenditures: the development of war equipment of new types and frantic nuclear arming. The operational theatre of the Japanese Self Defence forces expands into a broader area with emphasis laid on increasing long distance attack capacities.’ (articleID=830, date=2/18/97)
Arms Race	9	‘The U.S. had better behave itself mindful of the consequences to be entailed by its arms buildup in South Korea and maneuvers to invade the North and immediately withdraw its aggressor forces from South Korea.’ (articleID=48106, date=4/29/08)
Regional Security	5	‘If the Japanese reactionaries dare ignite a war against Asian countries’ (articleID=15363, date=7/13/00)

**Table 9** demonstrates that the most common explicit actions that North Korea threatens against its adversaries involve: total victory over adversaries, nuclear war, non-nuclear war, and increased tensions. Furthermore, I find that threats made by North Korea can involve not just the possibility of a direct attack against an adversary, but also warnings of broader spillover consequences, such as arms races or regional or global conflicts. This wide range of threat types suggests that North Korea is not always jumping to the utmost extremes—as the irrationality framework might suggest—but that it is instead proportionally pairing responses with triggers. Certain triggers appear to be more serious for North Korea than others; those that result in the invocation of nuclear war, for example, are likely more central concerns for North Korean leadership than those leading to threats about increased tensions.

Often, the response portion of explicit threats includes a justification for the threatened action. For example, threats might be couched in language about justice, self-defense, or the rights to territory and sovereignty. This pattern again reaffirms the findings from the automated text analysis portion of this paper regarding the importance of legitimizing North Korean sovereignty and of presenting threats as rational and proportionate responses to external security concerns.

Table 9: Codes for Responses from Explicit Threats

<b>Code</b>	<b>N</b>	<b>Example of Trigger</b>
Nuclear War	16	‘We will immediately reduce its [the United States] mainland into a field of nuclear war with strategic nuclear attack means.’ (articleID=121162, date=8/11/17)
Victory/Defeat	20	‘will only invite bitter defeat and shameful destruction.’ (articleID=20805, date=1/13/02)
Territory	5	‘The entire army and people of Korea who had won the victory in the fatherland liberation war under the leadership of President Kim Il Sung will display to the full the might of the powerful revolutionary army of Mt. Paektu rallied single mindedly around Kim Jong Il.’ (articleID=52649, date=3/17/09)
Defense	7	‘How can the DPRK remain a mere onlooker to this? The DPRK is compelled to maintain a high degree of vigilance and strongly react to the U.S. moves the United States is well advised to behave with decorum, properly understanding the firm will of the peoples army and people of Korea to react to the use of force with force.’ (articleID=21965, date=4/22/02)
Justice/Sovereignty	14	‘It will only precipitate their ruin when a merciless war of justice is launched by the service personnel and people of the DPRK against the U.S.’ (articleID=109824, date=2/19/16)
Tensions/Crisis	15	‘will hurt the atmosphere of dialogue and aggravate the situation of the region.’ (articleID=69064, date=8/11/11)
Preemptive Strikes	1	‘They cried out for punishment and preemptive strike.’ (articleID=122110, date=9/26/17)
War	19	‘is an intentional provocation to escalate tension between the North and the South and a revelation of the design to ignite a war against the North can lead to a military conflict.’ (articleID=99164, date=10/2/14)
Japan	1	‘Peace is the only way for Japan to survive.’ (articleID=15363, date=7/13/00)
Arms Race	6	‘The DPRK will further bolster up its nuclear deterrent for self defense to preserve its sovereignty and security and resolutely meet their challenges for aggression.’ (articleID=118110, date=3/4/17)
Regional Security	4	‘defend the sovereignty and dignity of the nation and protect peace and security on the Korean peninsula and in the rest of the world.’ (articleID=106633, date=9/15/15)

## 8.4 Content Analysis of North Korean Threats Responding to Military Exercises

**Figure 7** shows how North Korea reacts to military exercises and provides contextual information that helps explain *why* these exercises so often trigger North Korean threats. The figure displays clusters of words that are highly associated with the word ‘exercise’ in the set of articles in which North Korea makes threats. To create the clusters in **Figure 7**, I look within the set of threatening articles then find the correlations between all words and the word ‘exercise.’ I then subset to just include words with a 3rd quartile or higher correlation with the word ‘exercise,’ meaning I identify words that frequently co-occur with the word ‘exercise’ in articles that make threats against North Korean adversaries.

I then use the `ggraph` function in R to create a spatial map of the word clusters. In these maps, nodes (depicted as light-colored circles) are the words that are highly correlated with ‘exercise,’ and the edges (the lines connecting nodes) show the pairwise correlations between nodes. That is, edges indicate when two nodes frequently appear near each other in an article. For each cluster graph, I set the pairwise correlation that two nodes need to have in order to be connected by an edge so as to maximize the amount of relevant information while minimizing the amount of visual clutter.<sup>28</sup> The minimum pairwise correlation needed for an edge to appear is marked in the bottom right of the cluster maps. Note that, as a result of the method I use, it is not the case that all words highly correlated with ‘exercise’ will appear in the image; instead, nodes only appear if they are highly correlated with at least one other word in the larger set of words that were highly correlated with ‘exercise.’ Clusters are separated by white space. By default, the clusters appear in such a way as to be spread out evenly on the X and Y axes while forming an ellipsis.

Many of the clusters indicate areas of particular focus or concern for North Korea with regards to military exercises. They suggest when and why certain actions were perceived as highly threatening. For example, on the left of **Figure 7** is a cluster of words related

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28. Several variations of each cluster map were created to determine the appropriate parameter.



team-spirit, and the cluster on the bottom left containing foal-eagle. These are large, coordinated exercises involving the United States and South Korea. They increase military interoperability, provide valuable opportunities for planning, and could even raise the possibility of cross-border violence or a surprise attack. Thus, while all exercises appear to be threatening to North Korea, some exercises—evidently, those that are large, occur on the Korean peninsula, and involve coordinate between more than one North Korean adversary—raise particular concern among North Korea’s elite.

There are also clusters that directly call out threatening actors; puppets-sam and coattails-clinging, for example, criticize South Korean dependence on the United States, while the cluster containing ‘japanese’ and ‘japan’ criticizes the Japanese government as ‘militarists’ and ‘reactionaries,’ interested in the ‘reinvansion’ of Korea. These themes are deeply connected with North Korean historical memories of aggression, as South Korean reliance on the United States during the Korean War and Japanese militarism prior to and during WWII are common themes of North Korean commentary about historical aggressions. These clusters help identify both the actors that North Korea finds threatening and, in consequence, that it threatens.

Several clusters pass judgment on foreign activities (e.g. rushing-headlong, smoke-screen, aggressive-nature, crying-thief, saber-rattling, window-dressing, height-shamelessness, ponder-entailed-consequences-ensuing, linked-directly, and ulterior-motive.) These phrases often highlight concerns that exercises could be a pretext for preemptive attacks, a theme that has appeared in previous analyses as well and makes sense given North Korea’s evident concern about surprise attacks. Moreover, this justifying language highlights the dangerous aspects of military exercises and thereby legitimizes North Korea’s responses. This language, as previously discussed, could also serve a domestic purpose to mobilize support. Another set of justifying terms focuses not on disparaging adversaries’ actions but explaining North Korea’s own; these terms include vital-rights, defend-dignity-sovereignty, and evacuating-evacuation-families. This language suggests that any violent reactions by North Korea to

military exercises are justified in order to maintain North Korea's sovereignty and protect its citizens. This reiterates the insight that preservation of a legitimate claim to sovereignty is a core interest for the North Korean regime.

**Figure 7** also reveals some information about the content of the actions that North Korea is threatening. Clusters like firing-shells-bullets and explosion-warhead provide information about specific types of attacks North Korea has threatened, while clusters like fait-accompli, remain-looker, and pursuit-assault suggest the inevitability of North Korean military responses to those activities it has condemned.

Interestingly, some non-military terms do appear in the figure, such as references to U.N. resolutions (unsc-resolutions-council and legal-institutional) and language about possible resolutions of threats, such as agreed-framework, solution-issue-settlement-negotiated, and partner-dialogue. This may suggest the interconnected nature of security and diplomacy for the North Korean regime and may indicate that threats are sometimes accompanied by the extensions of carrots, should North Korea's adversaries comply with its demands.

## 8.5 Robustness Tests for Effect of North Korean Threats on North Korean Actions

Table 10: Effect of Number of Each Article Type Per Day

	<i>Probability of Nuclear/Missile Test Occurring Within Next:</i>			
	1 Day (1)	4 Days (2)	7 Days (3)	10 Days (4)
Threats	0.002*** (0.001)	0.004*** (0.001)	0.005*** (0.001)	0.005*** (0.001)
Historical Aggressions	-0.001 (0.001)	-0.003** (0.001)	-0.003** (0.002)	-0.003** (0.002)
Negotiations	-0.0003 (0.001)	-0.001 (0.001)	-0.002 (0.001)	-0.002 (0.001)
Reunification	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
Diplomacy	-0.0002 (0.0004)	-0.0003 (0.001)	-0.0003 (0.001)	-0.0002 (0.001)
Culture	-0.001 (0.001)	-0.001 (0.001)	-0.002 (0.001)	-0.002 (0.001)
Ideology	0.002** (0.001)	0.002** (0.001)	0.001 (0.001)	0.001 (0.001)
Leadership	-0.0002 (0.0004)	0.001 (0.001)	0.001* (0.001)	0.001* (0.001)
South Korean Regime	0.001* (0.001)	0.002*** (0.001)	0.002*** (0.001)	0.002*** (0.001)
Constant	0.005* (0.003)	0.007* (0.004)	0.008** (0.004)	0.009** (0.004)
Observations	7,267	7,264	7,261	7,258
Adjusted R <sup>2</sup>	0.003	0.006	0.007	0.006

*Note:*

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01



## 8.6 Survey Methodology

The survey was run using Lucid’s Fulcrum technology from 03/01/19–03/11/19. The population under study was adults aged 18 and over in South Korea. The sampling strategy used quotas and was nationally representative on age (18-48, with lower numbers of older respondents), gender, and income. The incidence rate was 86 percent; the conversion rate from pre-screening to completed surveys was 64 percent. The full texts of all survey questions referenced in this article are included below, as are the names of the variables associated with each question. Korean-language versions of the questions are available upon request—the survey was fielded only in Korean.

(Progressive) How would you describe your general political stance?

- Strongly Conservative
- Somewhat Conservative
- Slightly Conservative
- Neither Conservative Nor Progressive
- Slightly Progressive
- Somewhat Progressive
- Strongly Progressive

(Interest in Foreign Policy) Please rate your level of interest in news about national security.

- Strongly Interested
- Somewhat Interested
- Slightly Interested

- Neither Interested Nor Disinterested
- Slightly Disinterested
- Somewhat Disinterested
- Strongly Disinterested

(War with DPRK Likely within 10 Years) How likely is it that war will occur between South Korea and North Korea within the next 10 years?

- Very Likely
- Somewhat Likely
- Slightly Likely
- Neither Likely Nor Unlikely
- Slightly Unlikely
- Somewhat Unlikely
- Strongly Unlikely

(Female) What is your gender?

- Male
- Female

(Salary) What is the average total monthly income of your household? Please include wages/salaries, bonuses, interest income, rental income, etc.

- 1-2 million won
- 2-3 million won

- 3-4 million won
- 4-5 million won
- 5-6 million won
- 6-7 million won
- >7 million won
- I prefer not to answer.

(Education) What is your education level?

- Lower than high school diploma
- High school diploma
- Technical college graduate
- 4-year college graduate
- Graduate school graduate

(Age) How old are you?

- 18-24
- 25-32
- 33-40
- 41-48
- 49-56
- 57-64
- 65+

(Promise) The United States and South Korea have an upcoming joint military exercise. North Korea has promised to cease nuclear and missile testing if the exercise is cancelled. Should the exercise be cancelled?

- The exercise should be cancelled.
- The exercise should not be cancelled.

(Threat) The United States and South Korea have an upcoming joint military exercise. North Korea has threatened to resume nuclear and missile testing if the exercise is not cancelled. Should the exercise be cancelled?

- The exercise should be cancelled.
- The exercise should not be cancelled.

(Control) The United States and South Korea have an upcoming joint military exercise. In the past, North Korea has called for such exercises to be cancelled. Should the exercise be cancelled?

- The exercise should be cancelled.
- The exercise should not be cancelled.

(Strength of Opinion) How strongly do you feel that the exercise [should be / should not be] cancelled?

- Very Strongly
- Somewhat Strongly
- Neither Strongly Nor Weakly
- Somewhat Strongly
- Strongly Weakly