A Comparative Investigation Into Press–State Relations: Comparing Source Structures in Three News Agencies' Coverage of the North Korean Missile Crisis

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News media are on the frontline of international conflicts. Media messages play a pivotal role in increasing the diplomatic leverage at the negotiation table, which represents press–state relations. The present study applied indexing theory to examine these press–state relations from a global perspective. Using social network analysis, this research analyzed the development of source structures of news on the North Korean missile crisis by examining news agencies in the United States, China, and South Korea. The study found that these agencies conformed to their respective national interests; thus, their issue framings were an extension of each country's domestic politics. These results add more insight into not only press–state relations, but also the complex system of global politics.

Keywords: international news, indexing theory, network analysis, news sources, framing

International affairs and crises easily capture media's attention for their contentious nature and the limited information about them available to the public. Although media coverage is expected to remain neutral, there is a wide consensus that the news production process is inevitably interfered with by various journalistic and societal factors (Shoemaker & Reese, 1996; Soloski, 1989). Allegations of biased news reporting have generated a grave concern among scholars about whether news media fulfill their duty to keep the public informed in an objective way (Bennett, Lawrence, & Livingston, 2007). Biased news coverage is especially evident in international affairs and foreign policy, which is of great importance not only to the patterns of the global economy and international relations, but also to the specific interests of every country (Berry, 1990).

Political communication scholars argue that news coverage of international affairs results from the struggle between policymakers (usually government officials) and journalists (Archetti, 2010). The relation between the media and the government, to some extent, reflects the cultural lens of journalists, as well as the political and economic interests of the state (Bennett, 1990; Frampton & Boyd-Barrett, 2012; S. T. Kim & Weaver, 2003; Zaller & Chiu, 1996). For example, Moyo (2010) found that neither CNN of the United States nor Xinhua News Agency of China served as an autonomous or independent news

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messenger in their coverage of Tibetan protests against human right violations in 2008. Instead, news coverage of both media was ideologically oriented to their culture and economic interests (Moyo, 2010).

The question remains how policymakers and news media interact with each other, and which of the two is the influencer. One school of thought argues that prominent media outlets, especially global television, become direct or dominant actors that formulate international policies during international crises, (the CNN effect; Gilboa, 2002; Robinson, 1999). From this view, the media coverage influences policymakers as Dayan and Katz (1992) identified media's role of breaking diplomatic deadlocks and further sealing an accord. On the other hand, more scholars in political communication are skeptical of media's role in foreign policy as an independent agent, undermining their influence. The school-of-manufacturing-consent paradigm, in particular, argues that media succumb to the interests of powerful elites and their coverage conforms to the agenda of certain government officials (Herman & Chomsky, 2002; Rachlin, 1988). However, contrary to the hegemonic perspective that media are entirely subservient to the elites' consensus and reproduce dominant hegemonic power in society, *indexing theory* finds a close tie of state–press relations from a habitual practice of news media that relies on elites' debates for their news reporting (Bennett, 1990). In particular, indexing theory has been widely applied to inquiry about press–state relations on foreign policy (Mermin, 1999; Zaller & Chiu, 1996).

Although the indexing effects have been corroborated by a number of studies (Bennett & Manheim, 1993; Ismail, 2008), a limited number of studies have looked into indexing's cross-national applications to international affairs (Archetti, 2008). Even fewer studies have traced the changes of indexing effects along the development of international crises. Yet, indexing dynamics against a cross-national context over time remain unknown. Thus, our attempts to analyze the source structures and issue framing across foreign media over time during an international crisis fill that gap in the literature on the cross-national approach toward indexing effects. To achieve this goal, we examined the press–state relations in China, South Korea, and the United States on the issue the North Korean missile crisis.

Literature Review

Background of the North Korea Missile Crisis

For decades, North Korea has had a hostile relationship with its neighbor to the south, South Korea, and with the United States. The North Korea's recent development of a long-range missile has elevated tension on the Korean Peninsula, as well as in the international community because of North Korea's increasing capability to deliver nuclear warheads. However, the North's attempt has given rise to contentious debates on who decides who can possess what in the international community (Tannenwald, 2013). The United States' unequal treatment allowing the nuclear development in India and Pakistan shows that the issue of North Korea is somewhat ideological and contains a hegemonic conflict between the U.S.-led alliance countries and others.

The complicated nature of the international affairs is manifested through the North Korea missile crisis. This is beyond an issue of two Koreas, which makes it a security issue in the Far East region where Japan, China, and others are involved. Furthermore, the possibility that North Korea can sell its weapons

of mass destruction to so-called "rogue states" elevated the crisis from a local or regional issue to an international issue (Squassoni, 2005). In particular, the speculation that the West Coast of the United States could be within range of the missile attacks sparked a debate in the United States on whether preemptive military action against North Korea was necessary (Binckes, 2010; Pollack, 2010). However, a multilateral approach through the United Nations and the six-party talks, which aims to bring a resolution to the nuclear and missile crisis, have continually failed to discourage North Korea's development of the missile program because of the conflicts of interest among the participants in the talks (Park, 2005).

The Press–State Relations During International Crisis

Whether in a liberal or a highly controlled public discourse, today's media tend to be reluctant to question the premises and consequences of the current political–economic system, or to cede their power to criticize the government by heavily relying on government officials for news information (Bennett, 1990; Soloski, 1989). This is partly because government officials are the only insiders who can act as information subsidizers and serve as predominant sources in the news coverage of international affairs (Hall, Critcher, Jefferson, Clarke, & Roberts, 1978). According to Seo's (2011) survey of journalists who covered the six-party talks on North Korea's nuclear ambitions, journalists strongly agreed that they tend to comply with government sources in their coverage of the nuclear talks mainly because of the limited access to relevant information. This exemplifies how media end up mirroring or indexing the discourse of government officials (Bennett, 1990; Mermin, 1999).

More important, the nature of international affairs or crises, which may profoundly change the advancement of the nation involved and directly affect the status quo, drives the government to actively try to slant media coverage in favor of national and corporate interests (Entman, 2007; Hook & Pu, 2006). From this view, news coverage implicitly serves as a tool for the government to express and propagate its policy preference and to rally public support. Media criticism of government policy only occurs when policy uncertainty exists and elite discord intensifies (Gowing, 1996; Shaw, 1996). However, it is quite possible that media criticism is constrained within the range of institutional debate, as predicted by indexing theory.

Indexing Theory

Bennett's (1990) indexing theory mainly states that media coverage overwhelmingly relies on news cues by prominent officials, and keeps itself within the framework of institutional debate. Marginalizing public views outside the elite debate and highlighting official sources reinforces the mechanism that elite debate influences public discourse on public affairs issues (Bennett & Manheim, 1993). Indexing theory is based on several premises: (a) The theory applies to elite press organizations (i.e., prestigious national newspapers and news-wire services); (b) the theory mainly applies to legitimate and credible sources, excluding societal voices that involve civil disobedience, protests, or lawless acts; and (c) the theory best fits areas such as foreign affairs, military decisions, trade, and macroeconomic policy (Bennett, 1990).

Indexing theory is not, however, without criticism. One major problem is that the congressional opinion analyzed in Bennett's (1990) study is from *The New York Times*' news coverage, and is therefore not free from the media's opinions. It is possible that *The New York Times* distorted the congressional opinion to make it consistent with its own editorial opinion (Zaller & Chiu, 1996). Indexing effects might be influenced by two other confounding factors: the cultural context and the nature of the crisis. First, all members of a certain culture have the same culturally conditioned mind. It is possible that journalists and officials with the same cultural background respond to events similarly (Zaller & Chiu, 1996). Second, whether it is a short-term or long-term crisis, it evolves gradually, showing various characteristics along different stages. Media coverage and government policy therefore change accordingly; so do the press–state relations.

Source Structures in News Coverage

Because indexing theory's core concept is about the news media's reliance on government officials as sources, it can also be understood as source indexing. Sigal (1973) mentioned that "most news is not what has happened, but what someone says has happened" (p. 69). Hence, selecting news sources is an important journalism practice as it directs and shapes the message of a news article. This echoes the argument that characteristics of news sources are related to attributes of news coverage, and therefore is essential to the analysis of news content (Johnson & Kaye, 1998; Sundar, 1998). Several previous studies on news sources have extended their attention to source structures in news coverage (Berkowitz, 1987; Brown, Bybee, Stanley, & Straughan, 1987; Reese, Grant, & Danielian, 1994).

The source structure outlines how sources are used in media coverage and reflects profound political or cultural causes. In general, components of the source structure include types of sources (e.g., government officials, experts), the diversity of sources, and the tone of quotes (e.g., positive, negative; Archetti, 2010; Hallin, Manoff, & Weddle, 1993). In line with indexing theory, previous studies have found that news coverage of both domestic and international events lacks source diversity and disproportionately uses official sources (Archetti, 2010; Brown et al., 1987). The disproportional appearance of official sources in news coverage demonstrates that journalists routinely rely on elite groups. Particularly, it is noteworthy that news elites and security communities are inseparable from a national security issue (Zandberg & Neiger, 2005).

In a global context, heavy reliance on sources from a certain country can mirror international politics among stakeholders on issues. In other words, news media tend to give more prominent and frequent coverage to news sources of countries that share similar interests of their countries. However, country-of-origin sources do not only constrain the national interest, but also expand to a much broader social and political context (Aalberg et al., 2013). For instance, proximity to and relevance of an issue are important forces to news coverage (Galtung & Ruge, 1965). In the same vein, there is a good reason for any news media to postulate the importance of South Korea in its news coverage on the North Korean missile crisis because South and North Korea share a border and other interests. More important, international news coverage seems always to center around the big powers (Östgaard, 1965; Rosengren, 1974; H. D. Wu, 2000). It is not merely because the economically powerful countries such as the United States possess more political, economic, and military leverage than other countries. They also have better

access to media resources (H. D. Wu, 2000) as the majority of the world's largest media corporations are stationed in these countries.

For this research, network analysis provided an efficient way to examine news source structure through network maps, showing the links among various kinds of sources and sources positioned at the center of the structure. Reese and colleagues (1994) used network analysis to study the source structure of U.S. television news shows. They found that the news structure on television is formed around the insider group, which is characterized by a preponderance of government officials, situated at the center of the structure. Thus, following this step, the current study aimed to uncover what source was at the center of the news structure in the media coverage of the North Korean missile crisis across countries. Therefore, we posed the following research question:

RQ1:   *What does the change, over time, in the salience of nationality of news sources represent in the news coverage of the North Korean missile crisis from each selected news agency?*

Issue Framing Within Source Structures

Previous research also has found that the news coverage of international crises is guided by national interest (Archetti, 2010). The national interest is "the set of national priorities regarding relations with the rest of the world" (Nye, 1999, p. 23). Press nationalism is prevalently observed across borders (Cohen, 1963). Security issues and defense strategy usually become national priorities when countries face the threat of a nuclear missile crisis (H. D. Wu, 2000). During peacetime, however, economic interests attract more national and media attention for most countries (Norris, 1995; H. D. Wu, 2000). During crises, media coverage of certain issues depends on what the most important benefits are to the nation (H. D. Wu, 2000). Not only do journalists routinely highlight certain issues in their coverage of the crisis, but policymakers also make decisions that are consistent with their ideological perspectives or policy goals (Mintz & Redd, 2003). Recent efforts of linking framing with indexing effects help establish more knowledge on the press–state relations (Hickerson, Moy, & Dunsmore, 2011; Jones & Sheets, 2009).

Specific to the case of the North Korean missile crisis, the national interests of different countries might vary to a great degree. After all, all of the countries involved possess distinct perspectives based on their political relations with North Korea and the impact of a North Korea missile launch on them. The national interest of each selected country may change upon escalation of the crisis. If news coverage of the North Korean missile crisis in these countries does in fact reflect their national interests, it is quite possible that each country's news coverage will focus on the issues pertinent to its national interests. As far as the source structure is concerned, news sources from certain fields will be more frequently quoted in each country's news coverage than others to discuss the issues of the highest interest to the country. Therefore, we proposed the following research question:

RQ2:   *What does the change, over time, in the salience of issue framing of news sources represent in the news coverage of the North Korean missile crisis from each selected news agency?*

Method

Data

We conducted a network analysis to examine the patterns of source structures in the news coverage of three news agencies: the Associated Press (AP) in the United States, Xinhua News Agency (Xinhua) in China, and Yonhap News Agency (Yonhap) in South Korea. News agencies provide unique locales in the study of international affairs for their function as major sources of international news for individual media outlets in a specific country (Gorman & McLean, 2003). A news agency's coverage reflects, to some degree, the country's foreign policy and political stance. Thus, comparing news coverage of the North Korean missile crisis by a particular news agency will add more insight into the extent to which indexing theory can be applied to news outlets with distinctive business models and their relations to their own state. Although all three agencies in this study adopted a business model of agency–client relations, their relation to the state varied depending on their respective governments' subsidy on news agencies. For instance, Xinhua and Yonhap are subsidized by the government, but the AP runs its operation independently without government assistance (Boyd-Barrett, 1980; Xin, 2006).

Each news agency's news articles about the North Korean missile crisis were collected by searching with the keywords *North Korea* and *missile* from multiple online news databases, including Lexis Nexus, Xinhua's database, and Naver, the major news portal site in South Korea. News articles irrelevant to the North Korean missile issue were excluded from the analysis. Also exempted from the analysis were articles of fewer than 100 words.

Since 2006, North Korea has conducted three long-range missile tests, with each of these followed by a nuclear test as the study unfolded. Accordingly, the study divided the crisis into three stages, with a stage corresponding to one of the three launches. The first stage thus goes from July 5 to October 8, 2006 (from when the first missile was launched to the time the nuclear test was conducted). The second stage goes from April 5 to May 24, 2009, and the third stage goes from December 12, 2012, to February 11, 2013. For each stage, the number of news reports from news agencies is as follows: During the first stage, AP, Xinhua, and Yonhap produced 124, 105, and 285 reports, respectively. During the second stage, the AP and Xinhua produced 7 and 35 articles, respectively, and Yonhap produced 132. During the third stage, AP had only 5 articles, whereas Xinhua and Yonhap had 45 and 130 articles, respectively. In total, we analyzed 136 news articles by the AP, 185 news articles by Xinhua, and 547 news articles by Yonhap.

Coding Scheme

Nationality of news sources. Two aspects of news sources were coded: the nationality of the news sources and the issue framing by the news sources. A prior study on cross-national news coverage of international affairs suggests that the nationality of news sources provides important implications about press–state relations as well as those of state–state (Sreberny-Mohammadi, 1984). Thus, this study investigated the nationality of news sources as follows: the countries involved in the six-party talks (i.e.,

the United States, China, South Korea, Japan, North Korea, Russia), global sources (any source apart from specific nationality, such as the officials of United Nation), and others.

Issue framing across news sources. Second, we examined how news sources framed the issue given that the message is also indicative of press–state relations. In particular, a cross-national approach toward media's framing helps "how macro-leveled values are reflected in news framing" (Kwon & Moon, 2009, p. 271). Thus, analyzing issue framing against an international context can reveal the extent to which the news media correspond with the state and how news media represent their national interests on the global stage (Archetti, 2010; Hook & Pu, 2006; Sreberny-Mohammadi, 1984). To assess press–state relations through issue framing, we constructed seven categories concerning the impact of the missile crisis and conflict resolution: domestic policy, international policy, domestic security, international security, economy, internal situation of North Korea, and others. First, we distinguished the frame of policy from that of security because previous literature has emphasized the conflict between hawks and doves in conflict resolutions of international crises (Hansen, Ramsbotham, & Woodhouse, 2004). The perspective of doves, such as efforts at peace negotiations, can be categorized as the frame of policy, whereas the hawks' perspective, such as military affairs, are categorized as the frame of security. Considering the complicated nature of the issue, we added two dimensions of domestic and international context: a domestic or international agenda depending on the national interest. In addition, economy was added as a category given the interdependence of the world economy and international conflicts (Iyengar & Simon, 1993). Because financial markets of the countries in the six-party talks interacted with each other in a global economic system, the frame of economics was not given any domestic or international dimension.

Meanwhile, the domestic policy of North Korea was included in the coding scheme as North Korea's missile launching is often related to its internal affairs as a way of gaining more control over its society, increasing military tension in the region, and suppressing complaints from its people (U.S. Department of Defense, 2012). Lastly, any frame other than these categories was categorized as "others."

Data were coded by two graduate-student coders fluent in English, Mandarin, and Korean. No financial compensation was provided to either coder. For an accurate analysis, 10% of the total sample was coded to compare the results of coding, satisfying the threshold of intercoder reliability. The final intercoder reliability was above .77 (Scott's pi).

Social Network Analysis

This study employed social network analysis to identify the pattern of source structures as well as framing structure in the news coverage. Owing to theoretical perspective of social network theory, the network analysis helps elucidate meaning associated with actors through identification of their relationship rather than focusing on individual attributes of actors (Wassermann & Faust, 1994). For analytic benefits of identifying to what extent actors are associated with each other, and then construct overarching conceptual ideas, scholars have assessed salience of news sources (Reese, Grant, & Danielian, 1994), salient issues (Guo & McCombs, 2011), salient frames (Schultz, Kleinnijenhuis, Oegema, Utz, & Van

Atteveldt, 2012; Tremayne, 2014) with a graphical representation in which spatial proximity is manifested among actors.

To fulfill the research goal, we applied two-mode network analysis by creating an affiliated network. For the affiliated network, a network matrix was constructed with the nationality of news sources recorded in rows, and the issue framing by news sources was recorded in columns of the matrix. Thus, forming an affiliated relationship were two different sets of entities: the nationality of news sources and issue framing by news sources.   The relationship among nationalities originating from news sources was determined by the affiliated relationship with issue framing of news sources. For instance, when American and Chinese sources talked about international policy, the relationship between those countries was closer than with any other country. Similarly, the relationship of issue framing was inversely determined by the affiliated relationship among the nationality of news sources. This study used UCINET, software for social network analysis, to analyze the source structure of the news coverage. Then, we explicate and justify findings about press–state relations in a qualitative way to examine application of indexing effects on cross-nationals.

Centrality Score

Degree centrality was used to represent the popularity of a certain actor in the network. For instance, when a certain country-of-origin news source becomes more salient in news coverage than others, it tends to gain a higher centrality score than other competing countries. Degree centrality is calculated by the number of ties each actor acquires. An individual actor is then given a centrality score, which is obtained by dividing degree centrality with the sum of all of the actor centralities (Wasserman & Faust, 1994).

Results

Nationality of News Sources

To answer RQ1, we extracted source structures from news reports, and then found the dynamics of multilateral relationships portrayed in the three news agencies. Evidence demonstrated the extent to which each agency's coverage of the North Korean missile crisis resembled one another.

First, we found the hegemonic power of the United States in this international affairs issue. As seen from the centrality score of each nation given in Table 1, the news sources from the United States were found to be the most salient over time, except for Yonhap during the second stage and Xinhua during the third. Although North Korea's neighbors, South Korea and China, had a stake in the North Korea missile crisis, this result indicates that the United States was influential in mobilizing the international community as a consensus was reached to take action against North Korea. For instance, as seen from visualized maps in Figure 1 that illustrate the strength of the relationship among actors using distance between actors, North Korea, during the first missile crisis, was portrayed as being isolated from other countries even in Xinhua despite the country's being the closest ally to North Korea. This comparative analysis suggests that the news media's coverage of international affairs corresponds to its

nation's bargaining power at the negotiation table, as Galtung (1986) has argued through the model of "center periphery" that media tend to rely on sources that originate from countries that play a central role in the world politics.

Second, we found tension between multilateralism and U.S. unilateralism from news coverage across news agencies, as Gill (2004) has emphasized that the increasing multilateralism that China pursued challenges the influence of the United States. Whereas the United States was the most dominant news source for Xinhua, high scores of centrality for Russia, North Korea, and global news sources (see Table 1) were witnessed only in the Chinese news agency. This observation yields numerous implications. First, this shows multilateralism to be, in recent decades, a key tenet of Chinese foreign policy, as argued by G. Wu and Lansdowne (2007). Second, the close relationship between Russia and North Korea was also prominently shown in the AP during the first missile crisis (see Figure 1). At the same time, the alliance of South Korea, Japan, and the United States was closely tied to each other (see Figure 1). This sheds light on the emergence of a new Cold War, as argued by Friedberg (2005), that the United States began to strengthen alliances with South Korea and Japan to temper the regional power of China. Third, the source structure during the first stage in Figure 1 also represents a unique diplomatic stance on China's part as it tried to bridge the gap between North Korea and the U.S.-led alliance. China played a collaborating role with the United States, but at the same time, took sides with its neighboring country, North Korea, by refusing tough measures requested by the United States (Revere, 2013).

On the other hand, the AP was biased in its use of news sources, mainly focusing on the alliance of countries backing the United States, such as Japan and South Korea. Although China was an important strategic partner to the United States in its negotiations with North Korea, Chinese voices were notably less numerous in the AP's coverage. The U.S. news agency's focus on the alliance nations as news sources reflects American unilateralism in global affairs. China's complaint about its unfair portrayal in American media seems justified based on this evidence (Jia, 2001).

Third, the change of centrality score over time suggests an importance of domestic politics in the international affairs. During the first stage, South Korean news sources were the most prominent in the news coverage of Yonhap (see Table 1), although they were less prominent in the last two stages. One noteworthy change in South Korea's domestic politics between the first and the following stages was a power shift in presidency from liberal to conservative. Documents recently released by WikiLeaks revealed that the liberal president complained about how unfairly the United States was treating North Korea, indicating a sour relationship between the United States and South Korea on the issue of North Korea (Hong, 2011). Thus, the salience of Korean news sources in Yonhap during the first stage reflected the country's government policy of raising its own voice on foreign affairs issues. Furthermore, a close relationship between media coverage and domestic politics was also found throughout the second and third stages in the news coverage of Yonhap that highlights more news sources from the United States than those from South Korea. The change in news coverage showed that the U.S-led alliance was restored and strengthened as the conservative gained power in South Korea. Accordingly, South Korean news sources became more salient than those of Japan in the AP during the following stages. This finding is consistent with Lim's (2013) findings on media coverage on Kim Jung Un, a leader in North Korea, that

the United States, Chinese, and Japanese newspapers carried the same political stance on him that their respective government held.

Fourth, as the missile crisis continued to escalate, the voices of those in power in the reclusive country of North Korea were prominently delivered via Xinhua. As seen in Table 1, North Korea was proportionally introduced across news agencies during the first stage, but during subsequent stages, its salience was significantly witnessed only in Xinhua. This represents a strengthened and solidified relationship between China and North Korea as Lee (2014), a former Minister of Unification of the Republic of Korea, argued that both countries came into a new strategic alliance in 2009 when the second nuclear test was conducted and Kim Jong Il became ill. Delivering the voice of North Korea through Chinese media inevitably strengthened the brokerage role China played between North Korea and the other countries (Lam, Qin, & Yang, 2013). In the meantime, given that North Korea's statements function as a propaganda tool, we could not rule out the possibility that South Korea and the U.S. news agencies intentionally ignored the opinion of North Korea. If so, we interpreted this as a functional role of the media to serve their national interest.

Table 1. Centrality Score for Country-of-Origin Sources Across Agencies Over Time.

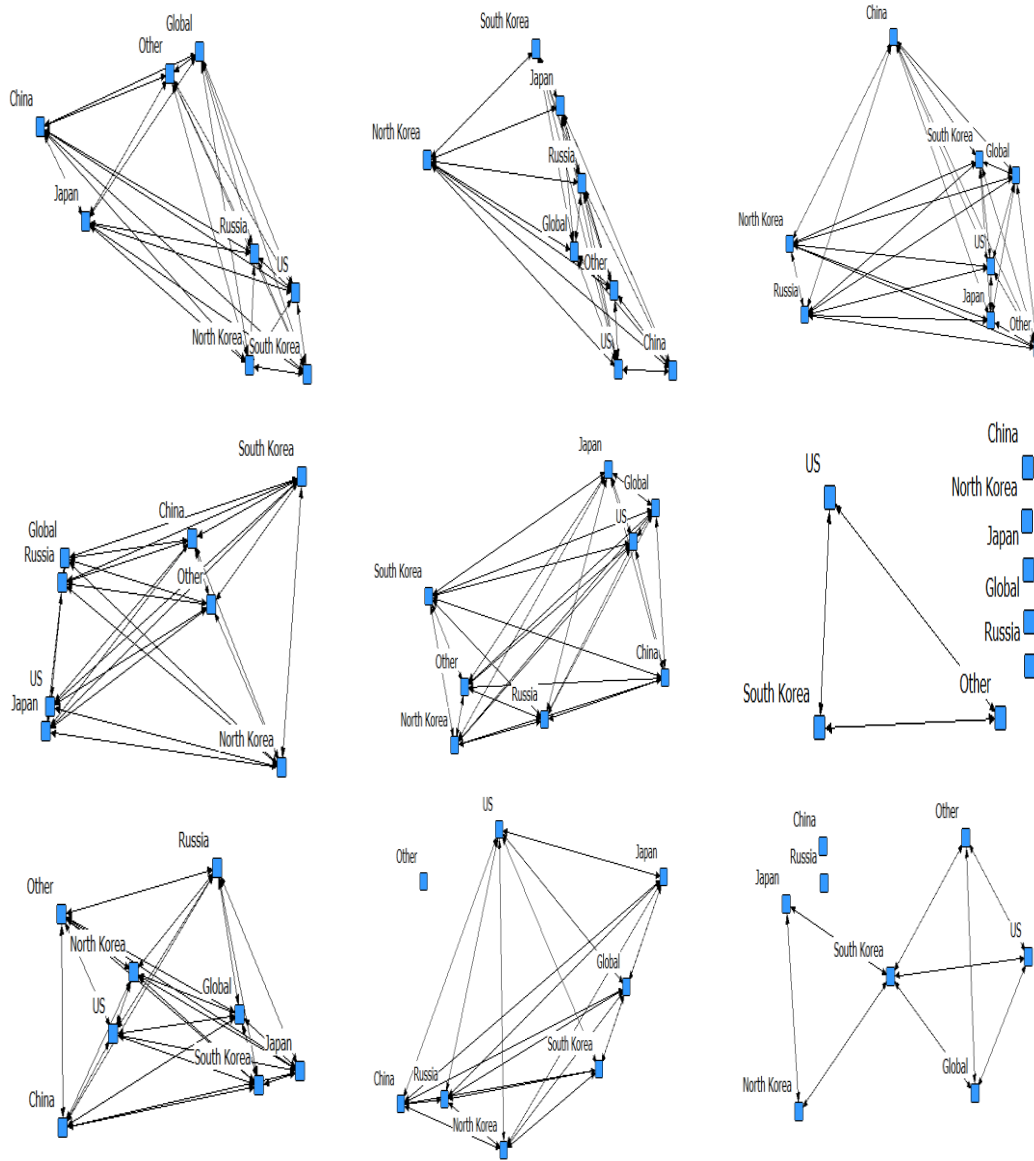| Stage	Agency	Country							
		United States	China	South Korea	Japan	Russia	North Korea	Global	Other
1	Associated Press	27.0	8.2	18.9	20.6	6.1	12.1	3.3	3.8
	Xinhua	21.1	8.6	20.5	16.9	9.9	13.9	4.0	5.2
	Yonhap	26.1	8.6	35.1	22.3	4.9	9.2	0.0	8.0
2	Associated Press	33.3	0.0	33.3	0.0	0.0	0.0	0.0	33.3
	Xinhua	23.0	4.4	12.3	15.2	6.5	18.9	10.8	8.9
	Yonhap	29.8	5.2	29.6	16.9	4.8	6.3	1.0	6.5
3	Associated Press	39.7	0.0	30.5	2.5	0.0	2.5	10.1	14.7
	Xinhua	13.4	9.4	22.7	9.3	9.0	20.8	15.4	0.0
	Yonhap	25.3	7.3	23.5	14.1	8.8	3.5	3.8	13.6

*Figure 1. The source structure by country-of-origin sources: Yonhap (from the left),
Xinhua, and Associated Press from first stages (from the top)   to third stage.*

Issue Framing Across News Agencies

More in-depth analysis of issue framing provided an opportunity to take a close look at the state–press relations. RQ2 was answered by looking at the relationships among issue framing. Evidence in the issue framing suggests that the news media tended to serve their national interests.

Table 2 shows the centrality score for issue framing over time across news agencies, which represents the salience of each issue framing. Taken from issue framing with the highest score of centrality, we extracted the priority of policy agendas for each nation. As for the AP, the most salient issue framings were shifted along the stages from international policy (29.8), international policy (50.0)/international security (50.0), to international security (43.1). On the other hand, Xinhua started the same as the AP during the first stage with a focus on international policy (25.7). Its emphasis shifted, however, during the second stage to domestic issues, such as domestic policy (22.9) and during the third stage to domestic security (25.6). What was similar in both the U.S. and Chinese news agencies was the shift of issue salience from policy to security. This indicates that the escalation of the missile crisis across stages brought a high level of security concerns for both countries as there was speculation arising between the second and third stages that North Korea had reached a sophisticated level of technology in intercontinental ballistic missile and nuclear technology (Bumiller & Sanger, 2011).

Table 2. Centrality Score for Framing Across Agencies Over Time.

Stage	Agency	Framing						
		DP	IP	DS	IS	ECON	NKDP	OT
	Associated Press	22.5	29.8	13.9	12.6	5.5	9.1	6.5
1	Xinhua	19.9	25.7	23.7	9.1	2.5	12.0	7.0
	Yonhap	31.1	24.4	13.0	13.9	6.6	1.8	9.2
	Associated Press	0.0	50.0	0.0	50.0	0.0	0.0	0.0
2	Xinhua	22.9	18.6	21.5	14.0	0.0	15.1	8.1
	Yonhap	31.6	20.8	5.3	20.4	4.9	6.8	10.2
	Associated Press	2.2	1.7	17.0	43.1	0.0	0.0	36.0
3	Xinhua	24.7	20.5	25.6	9.9	0.0	10.4	9.0
	Yonhap	25.4	24.7	7.5	19.5	9.3	2.6	11.0

Note. DP = domestic policy; IP = international policy; DS = domestic security; IS = international security; ECON = economy; NKDP = North Korea domestic policy; OT=other.
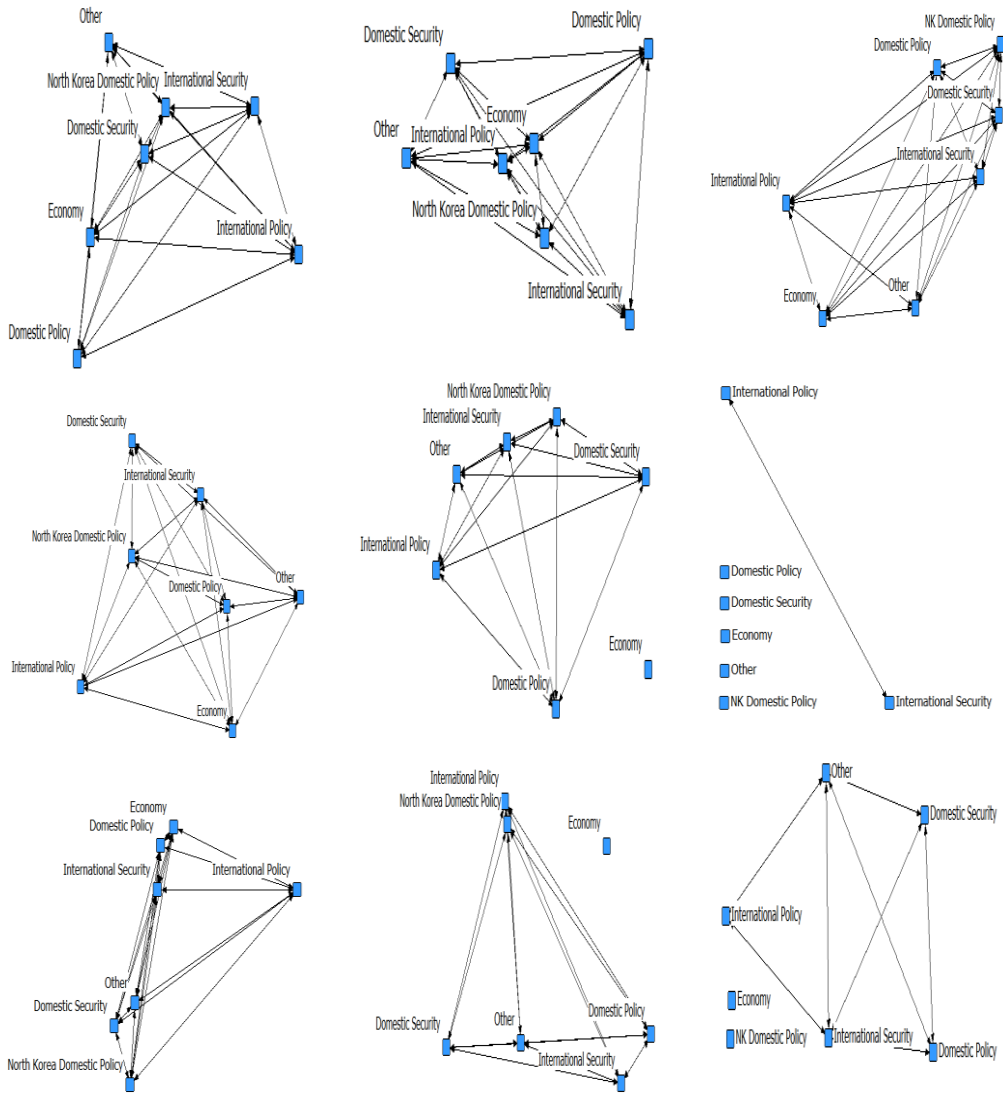
Figure 2. The source structure by issue framing of news sources: Yonhap (from the left), Xinhua, and Associated Press from first stages (from   the top) to third stage.

However, the nature of the security concerns between the two countries was different. International security concerns for the United States were about the growing potential of North Korea in proliferation of weapons of mass destruction, whereas China's concerns were mainly attributed to the risk of instability in the Far East and the prospect of possible intervention by the United States into the region (Lam et al., 2013). In particular, China has shown concerns over the introduction of U.S.-led theater missile defense into South Korea and Japan that can be a military threat to China (Christensen, 1999).

Thus, we consider that the escalation of the crisis upon the development of North Korea's arms technology triggered domestic security concerns from China.

Topping all other issues during all stages in Yonhap were domestic policies. With centrality scores of 31.1, 31.6, and 25.4, respectively, throughout all three stages, this result suggests that South Korea perceived the missile crisis along extended lines of domestic policy. Although the two Koreas had a bilateral relationship in many areas, increasing instability was detrimental to South Korea's bilateral relationship with the North. As seen in Figure 2, economy was found to be closely connected to the salient issues only in Yonhap, whereas it became marginalized for both Xinhua and the AP from the second stage. This demonstrates the extent to which South Korea was concerned about the risk of a North Korean attack on its financial market as others have argued that it is one of major factors that weakens the value of South Korean firms (C. W. Kim, 2011; Nam, 2004). The unique views of South Korea on the missile crisis were also found in the evidence that domestic security was a less salient concern than other issues (see Table 2). Given that South Korea is exposed to the North's threat of conventional weapons in a close proximity, the crisis was not perceived as a direct threat to the South.

Furthermore, reflecting on the dualistic positions of China as an ally of North Korea and a strategic partner of the United States in resolving the North Korea crisis (Lam et al., 2013), diversity on issue framing was found in Xinhua compared with the others. From centrality scores shown in Table 2, we observe that there was no dominant framing portrayed in Xinhua. Rather, the score in Xinhua was well distributed across framings compared with the AP and Yonhap. Whereas the United States stood firm on its policy of nonproliferation of weapons of mass destruction and South Korea's interest skewed toward domestic issues, we interpreted that China's bridging role between North Korea and the other nations inevitably affected its news agency's coverage of the issue. Thus, we concluded that the news agency's coverage of this issue was an outcome of each respective nation's domestic policy and interests as being argued by press nationalism (Billing, 1995; Cohen, 1963).

Discussion

This study analyzed the structure of news sources in major news agencies on the issue of the North Korean missile crisis to examine press–state relations against a cross-national context. In particular, we employed social network analysis with longitudinal data to measure the extent to which the salience of nations and issue framing in this international affair shifted over time across media as policy transitions are frequently observed in the course of international conflicts. Results from our exploratory investigation provide interesting insights into press–state relations in global politics.

First, results in this study suggest that the news agencies served the national interests of their respective country in the interstate dialogue on the North Korean missile crisis. Over the progression of the crisis, striking differences of source structures between the two superpowers, China and the United States, emerged. As discussed in studies of foreign affairs (Gill, 2004; G. Wu & Lansdowne, 2007), the surge of regional powers, such as China, Russia, and Brazil, has recently challenged U.S. unilateralism, which has prevailed since the collapse of the Soviet Union. The present study's analysis of source structures of news reports from China and the United States revealed that collision occurred between the

worldviews on multilateralism and U.S.-led unilateralism. Xinhua delivered more diverse multinational sources and issue framings, whereas the AP was biased toward American allies, such as South Korea and Japan. The consistent emphasis on international policies and security in the AP resonated with the United States' foreign policy of stabilizing the post-Cold War order by suppressing emerging armed nations (Mastanduno, 1997). On the other hand, the source structure of the South Korean news agency was distinctive from that of global leading countries by emphasizing its domestic policy and economy, representing the nation's special tie and unique stance to North Korea. Thus, these findings confirm those of prior studies on press–state relations that suggested that the news coverage is in favor of the policy stance that their government presses ahead with (Archetti, 2010; Hook & Pu, 2006).

Second, we also found that, as Ikenberry (1996) argued, the coverage of international affairs is an extension of domestic politics. Our analysis of longitudinal data allowed us to observe how the change of news coverage on this particular international affair has resonated with that of domestic politics over time. Voices of South Korean news sources were the most saliently delivered in Yonhap during the first stage of the crisis when President Roh called for independent relations of South Korea from the United States. However, when the conservative, U.S.-friendly president came into office, news sources from South Korea became less salient than those from the United States. As for the AP, we found shifts in issue framing from international policy to international security over the three stages. We argue that this change was an outcome of skepticism and criticism of the Obama administration's weak stance on North Korea among conservative think tanks, media, and politicians that raised their voices to impose tougher measures on North Korea. Public opinion on the efficacy of a diplomatic solution to the North Korean problem deteriorated. In 2006, 80% supported a diplomatic solution (Blaton, 2006), but by 2011 the support had dropped to about 65% (Montopoli, 2011). Issue framing changes in the AP across stages represented that the strategic patience that the Obama administration initiated was under mounting pressure from the worsened public opinion on the administration's diplomatic solution.

Third, the application of indexing theory against comparative investigation on multiple countries provides a meaningful framework to understand press–state relations in an interstate dialogue. Comparative analysis of international coverage across nations sheds light on the emerging trend of multipolarization of international politics. In many cases, studies on international coverage were mainly constrained to Western news media (Aalberg et al., 2013; Luther & Zhou, 2005; Natarajan & Xiaoming, 2003). Thus, there was a lack of diverse views from other nations (Cho & Lacy, 2000). Given that China and the United States are on the frontline of the North Korean missile crisis (Medeiros & Fravel, 2003), this comparative analysis on cross-national media coverage helps comprehend hegemonic power in the international community and how the news media correspond to a national policy that their respective countries initiate to retain power. Our efforts to expand the scope of analysis from the nationality of news sources to issue framing by news sources contribute to a rich understanding of the indexing effects in a global context.

Furthermore, the methodological design in the current study can be of interest for future researchers who consider analyzing press–state relations using a cross-national approach. With the application of social network analysis, we found the salience of nationality and issue framing of news sources. Prior studies on the visibility of foreign sources have tended to rely on the frequency of being

quoted by news media and have measured its salience with a count variable (Archetti, 2010; Hallin et al., 1993). However, salience of news sources also can be determined by their association with other sources, as social network theory argues (Wasserman & Faust, 1994). Therefore, our exploratory approach will give more opportunities for future researchers to use diverse methodological tools to achieve the goal of expanding our understanding of indexing dynamics.

Yet, there are some limitations for future researchers to consider. First, our qualitative and cross-national approaches are beyond the conventional method of comparing governments' statements and media coverage using correlation tests to find the indexing effects (Archetti, 2008). Although the analytic benefit of social network analysis that we employed lies on the assessment of interrelated connection among nations and framing, the results are descriptive. Second, a small quantity of news articles from the AP during the second stage of the North Korean missile crisis may have affected the evaluation of press–state relations during this stage. The low volume of news articles may reflect a decreased interest on the part of the U.S. news agency on the issue. Moreover, future researchers need to consider extending the time period to secure ample content data.

Whether the news media are active participants or passive observers in the diplomatic process, media messages play a pivotal role in increasing the diplomatic leverage at the negotiation table and in gaining public support (Iyengar & Simon, 1993; Wanta & Hu, 1993). The complicated nature of international affairs, such as the extension of domestic politics and the involvement of multiple nations, requires the comparative analysis of diverse players from a global perspective. In particular, emerging multilateralism brings the need to investigate foreign press coverage on conflicting issues. Given that few studies have examined the indexing effects against cross-national contexts or corresponding to the escalation of an international crisis (Shehata & Hopmann, 2012), the present study makes a significant contribution to fill these knowledge gaps.

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