

## Media Framing of the Unified Korean Olympic Women's Ice Hockey Team

Oh, Taeyeon; Kim, Seungmo; Love, Adam; Seo, Won Jae

*Published in:*  
Communication and Sport

*DOI:*  
[10.1177/2167479520925765](https://doi.org/10.1177/2167479520925765)

Published: 01/12/2021

*Document Version:*  
Peer reviewed version

[Link to publication](#)

*Citation for published version (APA):*  
Oh, T., Kim, S., Love, A., & Seo, W. J. (2021). Media Framing of the Unified Korean Olympic Women's Ice Hockey Team. *Communication and Sport*, 9(6), 888-910. <https://doi.org/10.1177/2167479520925765>

### General rights

Copyright and intellectual property rights for the publications made accessible in HKBU Scholars are retained by the authors and/or other copyright owners. In addition to the restrictions prescribed by the Copyright Ordinance of Hong Kong, all users and readers must also observe the following terms of use:

- Users may download and print one copy of any publication from HKBU Scholars for the purpose of private study or research
- Users cannot further distribute the material or use it for any profit-making activity or commercial gain
- To share publications in HKBU Scholars with others, users are welcome to freely distribute the permanent publication URLs

## MEDIA FRAMING

### **Abstract**

North and South Korea competed with a unified women's ice hockey team at the 2018 Winter Olympic Games in PyeongChang, South Korea. Although the two nations had fielded unified teams at previous international sporting events, the decision to form a unified women's ice hockey team in 2018 became a contentious political issue. To investigate the relationship between traditional media and social media when covering a controversial political issue in sport, the researchers in the current study examined newspaper coverage and Twitter commentary focused on the unified Korean women's ice hockey team. Results indicated that newspapers played an important agenda setting role; progressive newspapers were active in framing the team positively throughout the Olympic Games period, while conservative papers covered the team less frequently and framed it negatively. Discussion about the unified team on Twitter was initially positive but turned primarily negative when controversial statements from politicians and issues of unfairness in team selection arose. Ultimately, the results highlight elements of the symbiotic relationship between traditional media and social media.

Key words: Media Framing, Agenda Setting, Social Media, Text Mining, and Sentiment

Analysis

## MEDIA FRAMING

Title: Media Framing of the Unified Korean Olympic Women's Ice Hockey Team

### **Introduction**

Sports have often been used as a vehicle to achieve political goals (Bairner, Kelly, & Lee, 2017; Darnell, 2010; Kaufman & Wolff, 2010). For instance, a group of table tennis players from the United States (U.S.) served as the nation's initial delegation to communist China in 1971 (Andrews, 2016). The "Ping Pong Diplomacy" tour served as a trigger for President Richard Nixon's subsequent visit to China, marking a turning point in the diplomatic relationship between the U.S. and China during the Cold War (Andrews, 2016).

The political nature of sport creates a complex situation for sport media members, as some readers expect "apolitical" coverage in newspapers' sports sections (King, 2008). Recognizing the inherent links between sports and politics (Kaufman & Wolff, 2010), some sports journalists have begun to cover more expressly political issues following the development of online journalism (Kroon & Eriksson, 2019; Laucella, 2014). Further, with the growth of social network platforms and other new media, journalists and sports media personalities can more readily express their points of view on a variety of topics, while followers and subscribers can readily interact with sports journals via new media platforms (Harrison, 2017; Nölleke, Grimmer, & Horky, 2017).

As an example of a political issue covered prominently in the sports media, the current study examined the case of the South and North Korean unified women's ice hockey team in the 2018 Winter Olympic Games, held in PyeongChang, South Korea. This particular event was notable because it was the first unified team between the two nations in Olympic history; however, the unified team became a contentious issue, as decisions and actions leading up to the team's formation fostered substantial controversy among the South Korean public (Jung, 2018).

## MEDIA FRAMING

To better understand the evolution of sentiment about the unified team, the current study investigated the ways in which traditional media covered the issue in newspapers and how sports fans reacted to the issue via social media (i.e., Twitter). In doing so, we explicitly draw upon the concepts of agenda-setting (McCombs, 2005) and framing theory (Entman, 1993; Gamson & Modigliani, 1987) to reveal some of the complexities that exist with respect to the level of symbiosis between traditional media and social media in the current media landscape.

### **Formation of a Unified North/South Korean Team**

The governments of North and South Korea have formed unified Korean teams numerous times at major sporting events (e.g., 1991 FIFA Youth World Championship, 2018 Asian Games, 2018 World Team Table Tennis Championships) as a symbol of reconciliation and harmony between the two countries (Tak, 2018). However, the sudden formation of a unified women's ice hockey team at the 2018 Olympic Games sparked controversy, largely related to the issue of South Korean athletes being excluded from the national team or losing playing time in order to accommodate North Korean players. On Jan. 1, 2018, Jung-un Kim, the supreme leader of North Korea, announced his nation's participation in the 2018 Olympic Games. After his remarks, progressive newspapers in South Korea, which tend to present North Korea in a somewhat favorable light, cautiously reported on the possibility of forming a unified Korean team. On Jan. 9, a high-level inter-Korean meeting took place at the border between the two countries, at which officials discussed the prospect of both nations marching together at the Olympic opening and closing ceremonies. On Jan. 12, the South Korean government and Korea Olympic Committee (KOC) recognized the possibility of having a unified women's ice hockey team, later announcing that they were in official talks with the International Olympic Committee (IOC) about the matter.

## MEDIA FRAMING

However, according to a poll released by Seoul Broadcasting System (SBS) and the National Assembly of South Korea, negative opinions toward the unified team were widespread (SBS, 2018), setting the stage for substantial controversy.

The head coach of the South Korean women's ice hockey team, Sarah Murray, initially declined to accept North Korean players on her team, suggesting it was too late to build a new team for the Olympic Games, which were less than a month away (Hwang, 2018). However, Nak-yeon Lee, Prime Minister of South Korea, officially confirmed the intent to form a unified team, remarking that "since there is no possibility of winning an Olympic medal, it may be possible to select players who are not qualified" (Song, 2018). On Jan. 18, South Korean President Jae-in Moon met with players on the South Korean team, some of whom complained about the legitimacy of adding North Korean players solely for the purposes of forming a unified team, as this would result in the exclusion of some current team members (Jung, 2018). After the government's intent to move ahead with a unified team had been confirmed, many South Korean players who were excluded from the team conducted interviews with media members about issues of unfairness in the team selection (Kim, 2018). On Jan. 20, the IOC officially accepted the special request to admit a unified North/South Korean team, which resulted in the addition of 12 players from North Korea to the final Olympic roster with the stipulation that at least three North Korean players must play in each game. Murray, meanwhile, would serve as head coach of the unified team.

The North Korean Olympic team, including women's ice hockey players, entered the Olympic Village on Jan. 25 and commenced official training on Jan. 26 (Lee, 2018). On Feb. 9, the Olympic Games began with the opening ceremony in which athletes from North and South Korea marched jointly under the Korean Peninsula Flag, the official flag for the unified team.

## MEDIA FRAMING

During the Olympics, the Korean unified team played a total of five matches, losing all of them. On Feb. 25, the Olympic Games ended with the closing ceremony, in which North and South Korean athletes held a final display of unity by marching jointly once again. A complete timeline of events leading up to the 2018 Olympics and formation of the unified women's ice hockey team is provided in Table 1.

<Insert Table 1 near here>

Although many people saw the unified team as a symbol of peace between the two nations, others expressed concern that some South Korean players would be excluded to accommodate North Korean players on the team. Such divided reactions among South Korean citizens emerged from a context in which many Koreans felt that sport should be “apolitical,” rejecting the use of the team (and players) as tools for achieving political goals (Tae, 2018). The South Korean government, meanwhile, tried to justify the decision as a necessary sacrifice for the greater cause of diplomacy with North Korea (Tae, 2018). SBS, one of the biggest broadcasting networks in South Korea, reported that 72% of respondents to a national survey reacted negatively to the unified women's ice hockey team. In particular, negative perceptions were high at 82% in the age range of 20-39. Such negative reactions from the public came as somewhat of a surprise to government officials because unified teams from previous sporting events had been more widely supported as a sign of peaceful unification. In fact, the unified table tennis team in the 1991 ITTF World Table Tennis Championships, which was the first unified Korean team at an international sporting event, received widespread support and praise in South Korea. In fact, the story of the unified table tennis team was later made into a movie (Tak, 2018).

Many columnists pointed out that public reactions to the unified women's ice hockey team were indicative of the current South Korean political context, as polarization has increased

## MEDIA FRAMING

between right and left wing political factions following the 2017 impeachment of President Geun-hye Park, a member of the right-wing Liberty Korea Party. Since the impeachment, many conservative supporters have grown increasingly resolute in opposing the current government, which is led by the left-leaning Democratic Party. In fact, three major conservative newspapers in South Korea viewed opposition to the unified team as a means of criticizing the Democratic-led government, which was seen as inappropriately pro-North Korea.

In addition to traditional media, social media platforms, such as Twitter, can play a crucial role in organizing and spreading public opinion, as users are able to easily and quickly express their opinions. During the lead up to the 2018 Olympics, many South Koreans with anti-North Korea views aggressively expressed their opinions through social media. Dissemination of information is extremely fast on social media, and any mistakes by governmental figures can have an immediate impact on the public. For example, when Prime Minister Nak-yeon Lee suggested that excluding some South Korean players from the unified team was appropriate because the team was unlikely to win a medal, the remark instantly triggered negative responses, as public support for the unified team dropped to its lowest level (Park & Son, 2018).

Social media platforms, such as Twitter, also have the ability to bypass media gatekeepers and provide a new source of journalistic content (Conway, Kenski, & Wang, 2015). However, with respect to questions of agenda-setting and framing, the relationship between traditional newspapers and new media is still in dispute (Benbett & Uyengar, 2009; Groshek & Groshek, 2013). In particular, there is a lack of research investigating the relationship between traditional and new media on political issues in the context of mega sporting events. As such, the current study focuses on the relationship between traditional media framings and Twitter reactions on a political issue in sports. In particular, the current study investigated the

## MEDIA FRAMING

controversy surrounding the unified Korean women's ice hockey team in the 2018 Olympics.

The study utilized insights from framing theory and agenda-setting theory to consider the ways in which people presented and discussed certain aspects of the issue in South Korea.

### **Literature Review**

#### **Traditional Newspapers as Agenda-Setters**

Agenda-setting theory relates to the ability of the media to influence the importance placed on topics and issues in the public agenda (McCombs, 2004). In other words, if a particular topic is frequently mentioned and discussed in the media, people will regard the issue as being significant and worthy of attention (McCombs & Shaw, 1972). Agenda-setting theory has been spotlighted by researchers in political communication since the concept was introduced in the early 1970s (Scheufele & Tewksbury, 2006; Weaver, 2007). Following agenda-setting theory, the media not only provide information about issues and make them noticeable to audiences, but also affect judgements about issues in the audience's mind (Scheufele & Tewksbury, 2006). A massive volume of studies have revealed evidence that mass media play an agenda-setting role in society (McCombs, 2004). Members of the public are influenced by the topics covered by well-known journalists and news providers, such as television networks and newspapers (Wanta & Hu, 1994). When an issue receives attention in the mass media, members of the public begin to focus on and discuss that issue (McCombs, 2004). Overall, the media's role in setting the agenda has been widely recognized in media communication research.

In the social network space, meanwhile, traditional news providers continue to serve a role as agenda-setters (Bergström & Belfrage, 2018). While social network platforms may act as the primary means of consuming news for many users, much of this news still originates from the traditional media outlets. On Twitter and Facebook, for example, users may commonly share



## MEDIA FRAMING

news stories published by newspapers and broadcasting outlets. In this way, articles published by prominent journalists who work for traditional media outlets may continue to influence the agenda in the social networking sphere.

### **Framing**

Framing is a term used in political and communication studies that refers to media members' ability to influence audiences' understanding of an issue (Scheufele, & Tewksbury, 2007). Compared to agenda-setting theory, which focuses on the salience of an issue for the public, framing theory explains how an issue is characterized or portrayed by the media. When covering a topic, journalists organize and structure the delivery of news in a way that may influence the perceptions of readers (D'Angelo & Kuypers, 2010, Devitt, 2002; Lind & Salo, 2002).

While framing theory has important connections to agenda-setting theory, a key distinction between the two theories is that agenda-setting involves outlining for the public *what* to consider, while framing analyzes the media's influence regarding *how* members of the public understand a given issue (Goffman, 1974; Scheufele, 1999). Through framing, writers may attempt to persuade readers to accept certain values through topic selection, word choice, and presentation of issues (Scheufele & Tewksbury, 2006). For example, regarding the Korean unified women's hockey team, *Dong-A Ilbo*, a conservative and anti-North Korean newspaper, released an interview with Congressman Seong-min Yoo, chair of a South Korean conservative party, arguing that unifying the North and South Korean teams was a totalitarian idea that forced sacrifice by South Koreans (Kim, 2018). On the other hand, *Hankyoreh*, a progressive newspaper that tends to be favorable toward North Korea, reported that the unified team represented the Olympic Movement's emphasis on world peace (Lee, 2018). In these examples, the media

## MEDIA FRAMING

framed their coverage of a given issue according to their political orientation (i.e, conservative or progressive), seeking to influence the audience's perceptions of a prominent political issue. In this way, framing involves conscious, intentional choices by members of the press in a mediated society, affecting the direction of public opinion on social and political decisions and important agendas (Goffman, 1974; Scheufele, 1999).

### **Symbiotic Relationship between Traditional Newspapers and New Media**

The traditional relationship between news providers and consumers has changed as social media have come to function as an important pillar of public opinion. While traditional media remain in the roles of content creators and primary distributors of information, social media platforms serve to reduce transaction costs and create a bottom-up means of communication among public users (Benkler, 2006). As agenda-setting theory explains, the agenda building process of traditional journalism is focused on macro-level narratives that impact the public (Denham, 2010). Similarly, intermediate-level agenda-setting can take place in internet-based media, such as websites (Denham, 2010). For example, blogs have been identified as playing an intermediated agenda-setting role for news stories and political issues (Woodly, 2008).

As social media platforms, such as Twitter, have proliferated, they have also served as an intermediate agenda-setter with respect to social and political issues (Conway, Kenski & Wang, 2015). Research has revealed that many issues gaining prominence in the Twittersphere seem to follow the traditional media's agenda-setting strategies (Groshek and Groshek, 2013; Neuman. et al., 2014). On the other hand, Jiang (2014) examined the Chinese social media site Weibo and reported that it functioned as a primary agenda-setter rather than traditional media in China. Conway et al. (2015) investigated the 2012 U.S. presidential primary, reporting that traditional media and new media had a reciprocal relationship and that tweets on Twitter and news in

## MEDIA FRAMING

newspapers existed in the same source cycle. Ceron, Curini, and Iacus (2016), meanwhile, reported that traditional newspapers served as the agenda-setter, but social media developed the agenda mixed with users' opinions, contributing as a second-level agenda-setter by allowing users to examine online news related to Italian political issues.

Considered as a whole, the existing literature reveals that there is a symbiotic relationship between traditional and new media in the agenda-setting process. Weaver (2007) explained that the news media place an issue on the public agenda, priming that issue as salient and framing it to influence people's judgement. Following this idea, we expect a similar relationship between agenda-setting and framing to exist among traditional media and social media in the current study. Prior research has suggested that social media users post materials on their accounts with underlying intentions to appeal to other users and frame information in a particular way (Johnson & Romney, 2018; Wagner, Baccarella, & Voigt, 2017). Moreover, Bergström and Belfrage (2018) identified the existence of opinion leaders in social network spaces; responses by opinion leaders to information from traditional news media are often widely and rapidly spread in social media by their followers. With a controversial issue, such as the unified Korean women's ice hockey team, newspapers may frame the issue in a particular way corresponding with their political orientation. In turn, Twitter users may react to and interact with newspaper articles according to their individual political tendencies, then (re)produce those issues in the Twittersphere to further influence others' perceptions.

### **Twitter and Sport Communication Studies**

Twitter is a "microblogging" social media platform that allows users to post brief messages (called "tweets") limited 280 characters, which may include attached pictures or video clips (Java, Song, Finin, & Tseng, 2007; Rosen & Ihara, 2017). Once a user posts a tweet, it

## MEDIA FRAMING

becomes publicly viewable unless a user has their account set to “private.” Twitter users can amplify other users’ messages by using the “retweet” function, which posts their original users’ tweet on their timeline. People on Twitter can also engage with other users by commenting or replying to others’ tweets. Twitter boasts 330 million monthly active users (as of 2019 Q1). Of these, more than 40 percent (145 million) use the service on a daily basis (Clement, 2019). In South Korea, meanwhile, approximately 15% of the population uses Twitter on a daily basis (Kim, 2019).” Because of the public availability of its contents, Twitter allows for the circulation of real-time information among its large group of users, consequently serving as a strong channel for disseminating public opinions and discussions (Kwak, Lee, Park, & Moon, 2010; Shirky, 2011; Zhao & Rosson, 2009). Numerous researchers in sport studies have used Twitter data as a way to analyze and understand the opinions and viewpoints of people. For example, Yan, Pegoraro and Watanabe (2018) investigated the Twitter activities of collegiate athletes in the U.S. to analyze their engagement in social activism. Chang (2019), meanwhile, analyzed emotions of tweets during the Super Bowl to assess spectators’ emotional reactions.

### **Research Purpose**

With the theoretical background outlined above, the current study examined how the controversial issue of the unified women’s ice hockey team was covered by traditional news outlets (i.e., newspapers) and discussed by social media users (i.e., Twitter) in South Korea. Furthermore, the study provides insight about the potentially symbiotic relationship between traditional media and social media in the framing of a contentious political issue.

### **Method**

#### **Data Collection**

## MEDIA FRAMING

The current study involved collecting data from newspapers and Twitter. To understand framing of the women's unified ice hockey team by traditional newspapers, investigators included six national daily newspapers with the highest circulation in South Korea (Audit Bureau of Certification in Korea, 2018; Korean Ministry of Culture, Sports and Tourism, 2001). According to previous research regarding South Korean newspapers (Choi, 2010; KMCST, 2001), the *Chosun Ilbo*, *Dong-A Ilbo* and *JoongAng Ilbo* are general daily newspapers representing the conservative perspective in South Korea, while the *Hankyoreh* and *Kyunghyang Shinmun* tend to represent progressive perspectives. The *Korean Times (Hankook Ilbo)*, meanwhile, is a leading newspaper that takes a more centrist stance. Articles from each newspaper were collected by the web-based newspaper scraper in R software, which scraped all news articles with the keyword "unified team" in Korean (단일팀). Articles were collected for a total of 59 days from Jan. 1 through Feb. 28, 2018, which includes the period in which the Olympic Games were held.

To analyze reactions of social media users, the authors collected data from Twitter. Specifically, tweets were gathered with the "Simple Twitter Scraper" application developed by Lee (2017) in GitHub. While Twitter provides its official API to collect data from the Twitter servers, it limits the number of data to 5,000 tweets. To overcome this limitation, Henrique (2016) developed the application "GetOldTweets-Python," which allows users to scrape tweets based on a web search (Hidayatulla, et al, 2018; Von Nordheim et al, 2018). In other words, this application searches a key word on Twitter and gathers all results that exist (without a limit of 5,000 tweets). The "Simple Twitter Scraper" (Lee, 2017) is a modified version of Henrique's application that guarantees higher accuracy in searching for keywords in the Korean language. The current study used "unified team" in Korean (단일팀) as a keyword during the period of

## MEDIA FRAMING

Jan. 1 through Feb. 28, 2018, which encompasses the time leading up to and including the Winter Olympic Games. We also limited the research to the first two months of 2018 because while approximately 35,000 tweets on the unified team were collected during this period, only 859 appeared during the month of March. Therefore, that interest in the issue among Twitter users has diminished after the Olympic Games ended. Only tweets written in Korean were collected due to the research focus on the context of South Korea and for consistency with the analysis of Korean-language newspapers. The investigators used Python version 3.5 to collect tweets.

### **Data Analysis**

The current study employed a qualitative research approach combined with data analytics. First, newspaper articles were qualitatively analyzed to classify whether the article involved a positive, negative, or neutral framing of the unified women's ice hockey team. After reading the articles independently, two authors cross-checked each other's results to help ensure consistency. To assess the difference in framing between newspapers with different political orientations, a chi-square test was conducted using R software version 3.5.3.

The second step of data analysis included textual analyses of tweets by applying text sentiment analysis and topic analysis. Sentiment analysis is a basic technique of textual analysis, in which the polarity of the text is classified (Saif, He, & Alani, 2012). Polarity refers the sentiment expressed in a text and is classified as either "positive", "negative," or "neutral." The sentiments in the text were analyzed by adopting an approach used in the examination of psychological state according to verbal behavior (Thelwall et al, 2010). The polarity reflects the reactions or opinions expressed in certain key words or terms. For example, positive sentiments include supportive, agreeable, or trustful attitudes in verbal expression, whereas negative

## MEDIA FRAMING

sentiments involved presenting opposing or denying language (Kiritchenko, Zhu & Mohammad, 2014). In particular, the current study adopted the Korean Sentiment Analysis Corpus (KOSAC) tool which was built for capturing sentiment expressions and their patterns in the Korean language (Shin, Kim, Jo, Jang & Cattle, 2013). The KOSAC was used to assess the intensity, expressive types, and polarity of text. In the current study, the authors used the polarity of words to assess reactions of sports fans on Twitter. The KOSAC tool identifies seed terms of a sentence that express the basic polarity and analyses other terms to classify the verbal patterns of the sentence as a whole (Shin et al, 2013). By comparing derived patterns with pre-examined text structures, the application identifies polarity scores positive, negative, and neutral for each body of text. These scores represent the extent of similarity to existing patterns, with a value of 1 as perfectly matched and 0 as not matched at all (i.e., the maximum polarity score is 1, while the minimum is 0). For example, if a sentence has positive, negative, and neutral scores of 0.5, 0.1, and 0.05, respectively, then this sentence would be classified as expressing “positive” sentiment.

Finally, the investigators examined the correlation between the framing of articles in traditional newspapers and tweets from Twitter on a day-by-day basis using the Pearson correlation coefficient to assess the relationship between traditional and new media. Specifically, the daily number of positive, negative, and neutral newspaper articles and Tweets were compared to examine correlations. Tweets posted on holidays and days when traditional newspapers were not published were excluded from the test. In our analysis, tweets were refined by applying text-mining techniques provided by the “tm” package in R software. Emojis were not included in the analysis because emoji usage patterns may differ based on language, and the Korean-based emoji lexicon has not yet been established for analysis. Similarly, when a typo made it impossible to decipher the meaning of a tweet, it was excluded from analysis.

## Results

### Agenda-setting and Framing of Traditional Media

In the context of the current study, the media in South Korea played an agenda-setting role in portraying the unified women's ice hockey team as a crucial political issue before and during the 2018 Olympics. By comparing the timeline of events (see Table 1) with the number of articles from major daily newspapers in South Korea (see Table 2), it appears that news publishers began to produce articles about the unified team after the North Korean leader expressed his intention to participate in the Olympic Games. Subsequently, after Jong-hwan Do, South Korean Minister of Culture, Sports and Tourism, mentioned the possibility of a unified team on Jan. 12, the number of articles increased from 0 to 3 on Jan. 13, then to 5 on Jan. 15. In addition, the number of articles increased as various controversies arose regarding the team, such as issues of justice or legitimacy in selecting players, or the aforementioned controversial remarks by the South Korean Prime Minister. Specifically, during the 10 days following Jan. 18, when President Moon met with members of the South Korean team, a total 25 articles about the topic appeared in newspapers, representing 28.1% of the 89 total articles covering the issue. After a slight lull in the two weeks prior to the Olympic Games, the number of articles about the unified team also increased as the opening ceremonies drew near.

<insert Table 2 near here>

Table 2 provides a listing of the number of articles related to the unified team on a day-by-day basis. A total of 46 articles from conservative newspapers and 59 from progressive newspapers were published on the topic during the first two months of 2018. A day after the North Korean leader announced the nation's intent to participate in the Olympic Games, newspapers began reporting frequently about the possibilities of a unified team (Jan. 2). Through



## MEDIA FRAMING

Jan. 13, only progressive newspapers had published articles about the unified team. However, after Jong-hwan Do, Minister of Culture, Sports and Tourism in South Korea, claimed that both governments were discussing the possibility of a unified team, which was later confirmed by Kee-heung Lee, chair of the Korean National Olympic Committee, newspapers of all political orientations published articles. The frequency of articles was high during periods of new controversy about the unified team. The newspapers also frequently reported about the unified team after the Olympic Games began. By considering the number of articles published on a day-by-day basis corresponding with the event timeline, it appears that conservative newspapers largely avoided addressing the unified team issue until the Olympic Games were finished. For example, *Chosun Ilbo*, which was the biggest and most conservative newspaper in South Korea, never reported about the unified team during first two months in 2018. *JoongAng Ilbo*, meanwhile, only published articles about the unified team after the Olympic Games, and only *Dong-A Ilbo* mentioned the unified team when there was a controversial event. Of the 85 total articles about the unified team identified in the current study, only 19 were from the three conservative newspapers. On the other hand, the progressive newspapers published a much higher volume of news about the unified team.

The articles were classified into positive, negative, and neutral framings. For example, a news article with the headline, “South and North Korean Governments Agreed with a Unification Team for the PyeonChang Winter Olympic Games 2018” (Kim, Jung & Song, 2018) was categorized as a neutral article. News articles with titles such as, “What is Sweat and Tears of Women’s Ice Hockey Team, South Korean players’ Deprivation.” (Sung, 2018) or “Unified Team Is a Totalitarian Idea That Forced Personal Sacrifice.” (Kim, 2018) were classified as negative framings. Finally, articles with titles including, “The Unified Team Is a Turning Point

## MEDIA FRAMING

of History in Korean Peninsula.” (Son, 2018) or “The Unified Team is the symbol of Olympic Movement” (Lee, 2018) were classified as positive articles. Among 85 total articles, 39 (45.8%) involved neutral framing, 33 (38.8%) involved positive framing, and 13 (15.3%) involved negative framing. Positive articles were published most commonly by progressive newspapers (31 of 33 positive articles), while negative articles came primarily from other sources (10 of 13 negative articles). The difference in framing among types of newspapers (i.e., conservative, centrist, and progressive) were examined with a chi-square test, which indicated the existence of significant differences in framings ( $\chi^2 = 26.640, p < .001$ ) (See Table 3). In other words, the progressive newspapers were more likely to publish positive articles, while conservative and centrist newspapers more frequently portrayed the issue in a negative light.

<insert Table 3 near here>

### **Agenda-setting and Framing of Social Media**

Through sentiment analyses, the investigators classified the polarity of Tweets. As noted in the method section, the KOSAC analysis tool identifies scores for positivity, negativity, and neutrality for tweet, allowing researchers to classify the tweet’s overall sentiment. For example, the following tweet provides an illustrative example: “I would like to start with sports and cultural exchange and go one step further by unification. I would like to dispatch to the Winter Olympics, but I hope that there will not be any damage to our players who have prepared hard due to the sudden formation of a single team.” The tweet received values of 0.517, 0.365, and 0.067 for positive, negative, and neutral, respectively, and thus was classified as expressing positive sentiment overall. Similarly, the tweet, “Even if North Korea participates in the Olympics, I oppose a unified team. Be alert.” received values of 0.355, 0.460, and 0.081, and was classified as expressing negative sentiment overall. It is important to note that these

## MEDIA FRAMING

examples are English translations of the tweets, and all tweets were analyzed in the original Korean language using the KOSAC tool.

Overall, the results from Twitter analysis showed a pattern different from that of the traditional newspaper articles. Less than 200 tweets about this topic had appeared before the unified women's ice hockey team was officially confirmed on Jan. 17. The number of tweets then increased to 2,389 on the day of the announcement, as media in South Korea began to frame the issue with discussions of injustice and concerns related to player selection. The sentiment analysis showed that the average overall sentiment of Twitter users toward the team was slightly positive with an index score of .0093, and the number of tweets expressing positive emotions outnumbered those expressing negative reactions (See Table 4 and 5). However, when examining day-by-day trends, an increased level of negative tweets was observed between Jan. 17-20, when concerns of injustice about player selection were prominent in the newspapers and the team was defeated in warm up games prior to the Olympics. In particular, the number of negative tweets outnumbered positive tweets on Jan. 19 and 20. The interest in a unified team began to subside after Jan. 25 but increased again as the Olympics began, drawing much attention during the duration of the unified team's games. After the unified team was eliminated from the group qualifying round, attention to the issue by Twitter users decreased substantially, with slight resurgence during the Olympic closing ceremony (See Figures 1, 2 and 3).

<insert Table 4 and 5, Figure 1, 2 and 3 near here>

### **Relationship between Framing of Traditional News and Twitter**

The researchers used a correlation analysis to investigate the potentially symbiotic relationship between framing in traditional media and social media. Table 5 displays the correlation between the daily number of newspaper articles and tweets about the unified team.

## MEDIA FRAMING

Overall, a significant positive relationship existed between the total number of newspaper articles and number of tweets,  $r = .541, p < .05$ . In other words, on days in which more newspaper articles were published about the unified team, more people also tweeted about the team. There were also significant positive relationships between the quantity of positive newspaper articles and positive tweets ( $r = .334, p < .05$ ) and quantity of negative newspaper articles and negative tweets ( $r = .444, p < .05$ ). Further, for progressive newspapers, a significant positive relationship existed between the quantity of positive articles and both positive and negative tweets,  $r = .348, p < .05$  and  $r = .348, p < .05$ , respectively. For conservative newspapers, meanwhile, a significant positive relationship existed between the quantity of negative articles and both positive and negative tweets,  $r = .325, p < .05$  and  $r = .349, p < .05$ , respectively. In other words, during days in which progressive newspapers published a greater number of articles that framed the unified team positively, Twitter users posted a greater number of both positive and negative tweets about the team. Conversely, as conservative newspapers published more articles with a negative framing, Twitter users also posted a greater number of positive and negative tweets regarding the unified team.

### **Discussion**

The current study examined traditional media coverage (i.e., newspapers) and social media reactions (i.e., Twitter) with respect to a contentious political issue in South Korean sport. Consistent with the theoretical basis of agenda-setting and framing, the traditional newspaper media (Groshek and Groshek, 2013; Neuman. et al., 2014) appear to maintain a role in public agenda setting. However, the direction of public opinion on Twitter also suggests a two-way relationship with newspapers as indicated in some prior research (Jiang, 2014). The traditional media appear to have a meaningful role in making particular issues salient to the public.

## MEDIA FRAMING

However, once information about an issue begins to spread on social media, public opinion appears to form to a somewhat independent extent, as supported by existing findings (Bergström & Belfrage, 2018). Parmelee (2013), for instance, maintained that social media changes the reporting practices of traditional journalists, but the framings used by journalists were not shifted by social media. Negative public opinion about the Korean women's unified hockey team on Twitter was sparked by comments from government figures and complaints from players and coaches, leading the team to become the subject of social debates on injustice. Against this backdrop, conservative media outlets opposed to cooperation with North Korea sought to frame the issue as a case of injustice toward South Korean players. On the other hand, progressive media outlets that favor cooperation with North Korea sought to frame the issue by disseminating consistently positive articles.

With respect to the timeframe in which articles were published, conservative newspapers largely avoided reporting on the unified team during the Olympic Games, while progressive outlets more frequently published articles related to the issue. For instance, after the controversial remarks of Prime Minister Lee (Jan. 17) and complaints of unfairness regarding the exclusion of South Korean players (Jan. 19), progressive newspapers largely focused their coverage on positive outcomes that may result from the existence of a unified team. This situation also highlights the two-way role of social media as agenda-setters and framers (Johnson & Romney, 2018; Wagner, Baccarella, & Voigt, 2017). Despite the relative silence of conservative newspapers, many sports fans logged onto Twitter to voice both negative and positive views about the team. When issues of controversy arose with respect to the unified team, the number of both negative and positive tweets reached maximum frequency. Negative tweets about the team outnumbered positive tweets when the issue was most highly debated. Despite the

## MEDIA FRAMING

scant attention given to the issue in the conservative press, a substantial amount negative sentiment about the decision to form a unified women's ice hockey team prevailed in the social media sphere. In turn, progressive newspapers covered the team heavily with a positive framing during periods in which negative reactions prevailed in the social media sphere (e.g., when issues of unfairness in player selection were prominent in the public agenda).

The results of the current study are also worth considering with respect to the relationship between sports journalism and political issues. Sports journalists have often tried to avoid serious political controversies or contentious social issues (Harrison, 2017). Such a posture may facilitate cases of a government using sport for political ends, such as with the South Korean government and the unified women's hockey team in this case. In fact, the two Koreas have formed unified teams in some World Championships and Asian Games in an effort to ease tensions between the countries (Tak, 2018). In many years, citizens in both countries welcomed the unified team with relatively little resistance. However, with the growth of social media platforms, audience members have a new means of speaking publicly about political issues in sports (Laucella, 2014). This change of audience sensibility may have a notable impact on journalists both in sports and non-sports departments.

The current study has implications with respect to way in which we understand symbiosis in the relationship between traditional and new media. We can observe that once a certain issue is spread in cyberspace, it is impossible to control the diffusion of information and formation of debate in public opinion. Despite the fact conservative newspapers largely ignored the unified team, social network users expanded discussion about the issue, both positive and negative, with little prompting from the mainstream conservative press. The results of the current study further show that the efforts of progressive newspapers to frame the issue in positive terms had only

## MEDIA FRAMING

limited effectiveness. Contentious discussion of the unified team in the Twittersphere continued through the end of the Olympic Games notwithstanding the framing or (lack of) coverage by newspapers. In contrast, debates that take place on social media may influence the ways in which journalists cover an issue. While the current study cannot provide evidence of causal direction, given the nature of discussion about the unified women's ice hockey team on Twitter, the relative silence of the conservative press and comparative attentiveness of progressive newspapers to the issue is notable.

When interpreting the results of the current study, readers should be aware of key limitations, some of which highlight directions for future research. First, the newspaper articles were collected only from major print newspapers. Although these sources represented newspapers with among the largest circulation in South Korea, citizens have access to many other sources of news as well. Thus, while the current study provided insight about potential relationships between traditional news (i.e., newspapers) and social media, further research is still needed to help better understand the relationship between other forms of media (e.g., television, radio, magazines, online media) and social media. Likewise, the current study focused on one particular social media platform (i.e., Twitter), and additional research can help provide a fuller understanding of the relationship between traditional and new media by examining other social network platforms (e.g., Facebook, Instagram). In our methodological approach, we limited analysis to the period of January-February, 2018, and excluded tweets from Sundays, as South Korean newspapers do not publish Sunday editions. Additionally, we removed emojis from tweets and adopted a simplified polarity approach (e.g., positive, negative, neutral) in analysis of Twitter data. Subsequent studies may investigate the relationship between traditional media and social media sentiment over long time periods. Finally, as noted in the preceding

## MEDIA FRAMING

paragraph, further research is needed to better understand causal directions with respect to the ways in which issues are covered in the traditional media and discussed on social media.

### **Conclusion**

The joint decision by North and South Korea to compete with a unified women's ice hockey team at the 2018 Olympic Games generated substantial controversy. The purpose of the current study was to examine how the team was covered in traditional media and portrayed on social media, using agenda setting and framing as a theoretical foundation. Based on our results, newspapers played an important agenda setting role, which is notable in light of the changing media landscape. Despite the decline of the newspaper industry and the corresponding growth of new media, newspapers continue to influence the public agenda. With respect to framing, progressive newspapers were active in portraying the unified team positively throughout the period surrounding the Olympic Games, while conservative papers covered the team less frequently and tended to frame it negatively. Discussion about the unified team on Twitter, meanwhile, was initially positive but increasingly turned negative when controversial statements from politicians and questions about North Korean players displacing team members from the South arose. In some ways, the relationship between traditional media and social media was symbiotic, as the number of tweets about the unified team increased on days when newspapers published articles about the team. However, the ways in which the issue was framed in the traditional press diverged from framings on social media at times. In the period after the formation of the unified team was officially announced, the number of negative tweets about the team on Twitter grew despite the relative inattention of the conservative press and positive framing efforts of the liberal press, and negative tweets outnumbered positive tweets during the



## MEDIA FRAMING

height of the controversy. Ultimately, the results of the current study demonstrate some of the complexity that exists with respect to the level of symbiosis between traditional media and new media.

### Reference

- Andrews, E. (2016). How ping-pong diplomacy thawed the Cold War, *The History*,  
<https://www.history.com/news/ping-pong-diplomacy>
- Arnold, G. C. (2014, December). 10 examples of when sports and politics collide, *The Oregonian*,  
[https://www.oregonlive.com/sports/2014/12/ten\\_examples\\_of\\_when\\_sports\\_an\\_1.html](https://www.oregonlive.com/sports/2014/12/ten_examples_of_when_sports_an_1.html)
- Bairner, A., Kelly, J. & Lee, J.W. (eds.) (2017) *Routledge handbook of sport and politics*, Oxon: Routledge.
- Benkler, Y. (2006). *The wealth of networks: How social production transforms markets and freedom*. New Haven, CT: Yale University Press.
- Bennett, W. L., & Iyengar, S. (2009). A new era of minimal effects? The changing foundations of political communication. *Journal of Communication*, 58, 707-731.
- Bergström, A., & Jervelycke Belfrage, M. (2018). News in social media: Incidental consumption and the role of opinion leaders. *Digital Journalism*, 6(5), 583-598.
- Billings, A. C. (2007). From diving boards to pole vaults: Gendered athlete portrayals in the “big four” sports at the 2004 Athens Summer Olympics. *Southern Communication Journal*, 72(4), 329-344.

## MEDIA FRAMING

Billings, A. C., & Eastman, S. T. (2003). Framing identities: Gender, ethnic, and national parity in network announcing of the 2002 Winter Olympics. *Journal of Communication*, 53(4), 569-586.

Ceron, A., Curini, L., & Iacus, S. M. (2016). First-and second-level agenda setting in the Twittersphere: An application to the Italian political debate. *Journal of Information Technology & Politics*, 13(2), 159-174.

Chang, Y. (2019). Spectators' emotional responses in tweets during the Super Bowl 50 game. *Sport Management Review*, 22(3), 348-362.

Choi, H. (2010). A study on the diversity of Korean newspapers: Analyzing the tendencies of covering three major issues. *Korean Journal of Journalism & Communication*, 54(3), 399 – 426.

Clavio, G., & Eagleman, A. N. (2011). Gender and sexually suggestive images in sports blogs. *Journal of Sport Management*, 25(4), 295-304.

Clement, J. (2019, August 14). *Twitter: Number of monthly active users 2010-2019*. Statista. <https://www.statista.com/statistics/282087/number-of-monthly-active-twitter-users/>

Conway, B. A., Kenski, K., & Wang, D. (2015). The rise of Twitter in the political campaign: Searching for intermedia agenda-setting effects in the presidential primary. *Journal of Computer-Mediated Communication*, 20(4), 363-380.

Darnell, S. C. (2010). Power, politics and “sport for development and peace”: Investigating the utility of sport for international development, *Sociology of Sport Journal*, 27(1), 54-75

D'Angelo, P., & Kuypers, J. A. (2010). *Doing news framing analysis: Empirical and theoretical perspectives*. London, UK: Routledge.

## MEDIA FRAMING

- Denham, B. E. (2004). Sports Illustrated, the mainstream press and the enactment of drug policy in Major League Baseball: A study in agenda-building theory. *Journalism*, 5(1), 51-68.
- Fortunato, J. A. (2008). NFL agenda-setting: The NFL programming schedule: A study of agenda-setting. *Journal of Sports Media*, 3(1), 27-49.
- Goffman, E. (1974). *Frame analysis: An essay on the organization of experience*. New York, NY: Harper & Row.
- Groshek, J., & Al-Rawi, A. (2013). Public sentiment and critical framing in social media content during the 2012 US presidential campaign. *Social Science Computer Review*, 31(5), 563-576.
- Harrison, G. (2017, January 25). "Stick to Sports:" Politics and the sports media in the digital age, *The Society Pages*, <https://thesocietypages.org/engagingsports/2017/01/25/stick-to-sports-politics-and-the-sports-media-in-the-digital-age/>
- Henrique, J. (2016). GetOldTweets-python [Computer software]. <https://github.com/Jefferson-Henrique/GetOldTweets-python>
- Hidayatullah, A. F., Pembrani, E. C., Kurniawan, W., Akbar, G., & Pranata, R. (2018, April 27-30). *Twitter topic modeling on football news*. [Presentation] 2018 3rd International Conference on Computer and Communication Systems (ICCCS). Nagoya, Japan, <https://doi.org/10.1109/CCOMS.2018.8463231>
- Huffman, S., Tuggle, C. A., & Rosengard, D. S. (2004). How campus media cover sports: The gender-equity issue, one generation later. *Mass Communication & Society*, 7(4), 475-489.
- Hwang, M. (2018, January 30). Inter-Korean unified team left only wounds unexpectedly, *The Kyunghyang Shinmun Weekly Edition*,

## MEDIA FRAMING

<http://weekly.khan.co.kr/khnm.html?mode=view&code=118&artid=201801231012151&pt=nv>

Jaeger P.T., Bertot J.C., Shilton K. (2012) Information policy and social media: Framing government—citizen Web 2.0 interactions. In: Reddick C., Aikins S. (Eds) *Web 2.0 technologies and democratic governance. public administration and information technology*, New York, NY: Springer.

Java, A., Song, X., Finin, T., & Tseng, B. (2007, August). Why we twitter: understanding microblogging usage and communities. *Proceedings of the 9th WebKDD and 1st SNA-KDD 2007 workshop on Web mining and social network analysis*. 56-65.  
<https://doi.org/10.1145/1348549.1348556>

Jiang, Y. (2014). “Reversed agenda-setting effects” in China case studies of Weibo trending topics and the effects on state-owned media in China. *Journal of International Communication*, 20(2), 168–183.

Jung, K. (2018, January 17). President Moon visits Olympic village, *Sisa Week*,  
<http://www.sisaweek.com/news/articleView.html?idxno=101732>

Kaufman, P., & Wolff, E. A. (2010). Playing and protesting: Sport as a vehicle for social change. *Journal of Sport and Social Issues*, 34(2), 154-175.

Kian, E. M., & Hardin, M. (2009). Framing of sport coverage based on the sex of sports writers: Female journalists counter the traditional gendering of media coverage. *International Journal of Sport Communication*, 2(2), 185-204.

Kim, C., Jung, I., & Song, H. (2018, January 11). South and North Korean governments agreed with a unification team for the PyeonChang Winter Olympic Games 2018. *Hankyore*.  
[http://www.hani.co.kr/arti/sports/sports\\_general/827430.html](http://www.hani.co.kr/arti/sports/sports_general/827430.html)

## MEDIA FRAMING

- Kim, D. (2018, April 27). Is the first inter-Korean unified team in the Asian Games ping-pong? Basketball? Judo? *Hankyore*,  
[http://www.hani.co.kr/arti/sports/sports\\_general/842408.html](http://www.hani.co.kr/arti/sports/sports_general/842408.html)
- Kim, H. (2018, January 18). Inter-Korean unified team is a totalitarian idea that imposes personal sacrifice, *Dong-A Ilbo*, <http://www.donga.com/news/article/all/20180118/88224520/2>
- Kim, J. (2018, January 22). Controversy of Women's Ice Hockey Team, *The Korean Times*,  
<https://www.hankookilbo.com/News/Read/201801220420220018>
- Kim, Y. (2019). *SNS user analysis in South Korea*. Korea Information Society Development Institute, <https://www.kisdi.re.kr/kisdi/common/premium?file=1%7C14582>
- King, C. R. (2008). Toward a radical sport journalism: An interview with Dave Zirin. *Journal of Sport and Social Issues*, 32(4), 333-344.
- Kiritchenko, S., Zhu, X., & Mohammad, S. M. (2014). Sentiment analysis of short informal texts. *Journal of Artificial Intelligence Research*, 50, 723-762.
- Kroon, A., & Eriksson, G. (2019). The impact of the digital transformation on sports journalism talk online, *Journalism Practice*, 13(7), 834-852.
- Kwak, H., Lee, C., Park, H., & Moon, S. (2010, April). What is Twitter, a social network or a news media?. *Proceedings of the 19th international conference on World wide web*. 591-600. <https://doi.org/10.1145/1772690.1772751>
- Kwon, R. (2018, January 11). Co-entry between South and North Korea "You shouldn't be a unified team.". *SBS*, [https://news.sbs.co.kr/news/endPage.do?news\\_id=N1004569944](https://news.sbs.co.kr/news/endPage.do?news_id=N1004569944)
- Laucella, P. C. (2014). The evolution from print to online platforms for sports journalism. In *Routledge handbook of sport and new media* (pp. 107-118). London: Routledge.

## MEDIA FRAMING

- Lee, DS. (2017). SimpleTwitterScraper [Computer software].  
<https://github.com/mrlee23/SimpleTwitterScraper>
- Lee, J. (2018, January 22). The unified team represents “Olympism”, *Hankyore*,  
<http://www.hani.co.kr/arti/opinion/because/828884.html>
- Lee, S. (2018, January 26). The unified team priority is “the unification of terms”. *News One*,  
<http://news1.kr/articles/?3217653>
- Lewis, N., & Weaver, A. J. (2015). More than a game: Sports media framing effects on attitudes, intentions, and enjoyment. *Communication & Sport*, 3(2), 219-242.
- McCombs, M. (2005). A look at agenda-setting: Past, present and future. *Journalism studies*, 6(4), 543-557.
- McCombs, M. (2018). *Setting the agenda: Mass media and public opinion*. John Wiley & Sons.
- McCombs, M. E., Shaw, D. L., & Weaver, D. H. (2014). New directions in agenda-setting theory and research. *Mass communication and society*, 17(6), 781-802.
- Nölleke, D., Grimmer, C. G., & Horky, T. (2017). News sources and follow-up communication, *Journalism Practice*, 11(4), 509-526
- Park, S., & Son, J. (2018, January 19). Negative public opinions about the unified team, embarrassing ruling party. *The Kyunghyang Shinmun*.  
[http://news.khan.co.kr/kh\\_news/khan\\_art\\_view.html?art\\_id=201801192124015](http://news.khan.co.kr/kh_news/khan_art_view.html?art_id=201801192124015)
- Parmelee, J. H. (2013). Political journalists and Twitter: Influences on norms and practices. *Journal of Media Practice*, 14(4), 291-305.
- Parmelee, J. H. (2013). The agenda-building function of political tweets. *New Media & Society*, 16(3), 434–450.

## MEDIA FRAMING

- Romney, M., & Johnson, R. G. (2019). The ball game is for the boys: The visual framing of female athletes on national sports networks' Instagram accounts. *Communication & Sport*, <https://doi.org/10.1177/2167479519836731>
- Saif, H., He, Y., & Alani, H. (2012, November). Semantic sentiment analysis of Twitter. In *International semantic web conference* (pp. 508-524). Springer, Berlin, Heidelberg.
- Scheufele, D. A. (1999). Framing as a theory of media effects. *Journal of Communication*, 49(4), 103-22.
- Scheufele, D. A., & Tewksbury, D. (2006). Framing, agenda setting, and priming: The evolution of three media effects models. *Journal of communication*, 57(1), 9-20.
- Seate, A. A., Harwood, J., & Blecha, E. (2010). "He was framed!" Framing criminal behavior in sports news. *Communication Research Reports*, 27(4), 343-354.
- Shim, H. (2018, January 16). 23 South Korean women's ice hockey players guaranteed. *MoneyS News*, <http://moneys.mt.co.kr/news/mwView.php?type=1&no=2018011614298093345&outlink=1>
- Shin, H., Kim, M., Jang, H., & Cattle, A. (2012, November). Annotation scheme for constructing sentiment corpus in Korean. *Proceedings of the 26th Pacific Asia Conference on Language, Information, and Computation* (pp. 181-190).
- Shin, H., Kim, M., Jo, Y., Jang, H., & Cattle, A. (2013). KOSAC (Korean Sentiment Analysis Corpus). *Information and Computation*, 181-190.
- Shirky, C. (2011). The political power of social media: Technology, the public sphere, and political change. *Foreign affairs*, 90(1), 28-41.

## MEDIA FRAMING

Son, J. (2018, January 17). The unified team is a turning point of history in Korean Peninsula.

*The Kyunghyang Shinmun.*

[http://news.khan.co.kr/kh\\_news/khan\\_art\\_view.html?artid=201801171639011&code=910100](http://news.khan.co.kr/kh_news/khan_art_view.html?artid=201801171639011&code=910100)

Song, T. (2018, January 17). Prime minister's remarks against the unified team, *Kookmin Ilbo*,

<http://news.kmib.co.kr/article/view.asp?arcid=0012057758&code=611111111&cp=nv>

Sung, H. (2018, January 14). What is sweat and tears of Women's Ice Hockey Team, South Korean players' deprivation. *The Korean Times.*

<https://www.hankookilbo.com/News/Read/201801142048750838>

Tae, W. (2018, January 18). Country vs. Individual... 'A clash of values' in the controversy over a unified inter-Korean team., *Kukmin Daily*,

<http://m.kmib.co.kr/view.asp?arcid=0012059200>

Tak, B. (2018, March 5). Strange game that won each other without fighting, impressed by the unified team of Women's Table Tennis, *Media Us*,

<http://www.mediaus.co.kr/news/articleView.html?idxno=122936>

Thelwall, M., Buckley, K., Paltoglou, G., Cai, D., & Kappas, A. (2010). Sentiment strength detection in short informal text. *Journal of the American Society for Information Science and Technology*, 61(12), 2544-2558.

Von Nordheim, G., Boczek, K., Koppers, L., & Erdmann, E. (2018). Digital traces in context| Reuniting a divided public? Tracing the TTIP debate on Twitter and in traditional media. *International Journal of Communication*, 12, 548-569



## MEDIA FRAMING

- Wallsten, K. (2010). “Yes, We Can”: How online viewership, blog discussion, campaign statements, and mainstream media coverage produced a viral video phenomenon. *Journal of Information Technology & Politics*, 7(2–3), 163–181
- Weaver, D. H. (2007). Thoughts on agenda setting, framing, and priming. *Journal of communication*, 57(1), 142-147.
- Weaver, D. H. (2007). Thoughts on agenda setting, framing, and priming. *Journal of communication*, 57(1), 142-147.
- Woodly, D. (2008). New competencies in democratic communication? Blogs, agenda setting and political participation. *Public Choice*, 134(1-2), 109-123.
- Yan, G., Pegoraro, A., & Watanabe, N. M. (2018). Student-athletes’ organization of activism at the University of Missouri: Resource mobilization on Twitter. *Journal of Sport Management*, 32(1), 24-37.
- Zhao, D., & Rosson, M. B. (2009, May). How and why people Twitter: the role that micro-blogging plays in informal communication at work. *Proceedings of the ACM 2009 international conference on Supporting group work*. 243-252.  
<https://doi.org/10.1145/1531674.1531710>
- Zimmerman, M. H., Clavio, G. E., & Lim, C. H. (2011). Set the agenda like Beckham: A professional sports league’s use of YouTube to disseminate messages to its users. *International Journal of Sport Management and Marketing*, 10(3-4), 180-195.

## MEDIA FRAMING

Table 1. Event Timeline

Date	Events
Jan. 1	Jung-un Kim, the supreme leader of North Korea, announced as a part of new year's statement that the North Korean team would participate in 2018 Winter Olympic Games in PyeongChang, South Korea.
Jan. 9	A high-level inter-Korean meeting was held in Panmunjom, the joint security area of both Koreas and UN Neutral Nations Supervisory Commission, to discuss the Olympics and possible formation of a unified women's ice hockey team.
Jan. 11	Seoul Broadcasting Station (SBS) reported the result of a poll on the unified team with the National Assembly of South Korea. The response "No need to do it" received 72.2%, while "build it no matter how" was 27.8%.
Jan. 12	Mr. Jong-hwan Do, Minister of Culture, Sports and Tourism in South Korea claimed that the both governments were discussing about unification women's ice hockey team in Winter Olympic Games and Mr. Lee, chair of Korean National Olympic Committee confirmed.
Jan. 16	A South Korean government representative reported at a briefing of state council that the government was conferring with the IOC about unified team. Sarah Murray, head coach of the South Korean women's ice hockey team, declined to accept 10 North Korean players on her team.
Jan. 17	The formation of a unified women's ice hockey team was officially confirmed. South Korean Prime Minister Nak-yeon Lee remarked that since there was no possibility of winning an Olympic medal, it would be acceptable to select players for the team who were not qualified. Murray voiced concern about the quality of the women's ice hockey team if it was unified.
Jan. 18	South Korean President Jae-in Moon met with hockey players and some voiced complaints about unfairness in player selection.
Jan. 19	Some South Korean players who were excluded from the team in order to accommodate North Korean players were interviewed by media members.
Jan. 20	Ms. Minjee Lee, potential member of South Korean women's ice hockey team complained about the unified team on her SNS IOC accepted the special request for a unified Korean women's hockey team. Twelve players from North Korean were included on the team with the stipulation that at least three must play per game. Murray would serve as head coach.
Jan. 25	North Korean players moved into the Olympic Village and began their official training.
Feb. 9	Olympic opening ceremony. North and South Korea march jointly with the Korean Peninsula Flag.
Feb. 10	Preliminary round match: Switzerland defeats Korea, 8-0.
Feb. 12	Preliminary round match: Sweden defeats Korea, 8-0.
Feb. 14	Preliminary round match: Japan defeats Korea, 4-1.
Feb. 18	Classification match: Switzerland defeats Korea, 2-0.
Feb. 20	Classification match: Sweden defeats Korea, 6-1.

## MEDIA FRAMING

---

Feb. 25      Olympic closing ceremony. North and South Korea again march jointly with the Korean Peninsula Flag.

---

## MEDIA FRAMING

Table 2. Number of Newspaper Articles by Period

Periods	Conservative Newspapers			Centrist Newspaper			Progressive Newspapers			Total
	Neu.	Pos.	Neg.	Neu.	Pos.	Neg.	Neu.	Pos.	Neg.	
<b>Discussion</b>	0	0	1	1	0	1	4	2	0	9
<b>Controversy</b>	6	0	4	1	1	3	8	14	1	38
<b>Pre-Olympics</b>	1	0	1	0	0	0	4	6	2	14
<b>Olympics</b>	4	1	0	0	0	0	8	8	0	21
<b>Post-Olympics</b>	1	0	0	0	0	0	1	1	0	3
<b>Total</b>	12	1	6	2	1	4	25	31	3	85

Discussion period: Jan. 1-14; governmental discussions about the possibility of a unified team

Controversy period: Jan. 15-28; controversy following the official announcement of the unified team

Pre-Olympics period: Jan. 29-Feb. 8; days leading up to the Olympics

Olympics period: Feb. 9-25; period between the Olympic opening and closing ceremonies

Post-Olympics period: Feb. 26-28; days after the Olympic Games

MEDIA FRAMING

Table 3. Framing of newspaper articles on unified team

<b>Newspaper/Framing</b>	<b>Neutral (%)</b>	<b>Positive (%)</b>	<b>Negative (%)</b>	<b>Total</b>
<b>Conservative Media</b>				
<i>Chosun Daily</i>	0	0	0	0
<i>JoongAng Daily</i>	2 (66.7)	1 (33.3)	0 (0.0)	3
<i>The Dong-A Ilbo</i>	10 (62.5)	0 (0.0)	6 (37.5)	16
Subtotal	12 (63.2)	1 (5.3)	6 (31.6)	19
<b>Centrist Media</b>				
<i>The Korean Times</i>	2 (28.6)	1 (14.3)	4 (57.1)	7
Subtotal	2 (28.6)	1 (14.3)	4 (57.1)	7
<b>Progressive Media</b>				
<i>Hankyoreh</i>	9 (33.3)	16 (59.3)	2 (7.4)	27
<i>The Kyunghyang Shinmun</i>	16 (50.0)	15 (46.9)	1 (3.1)	32
Subtotal	25 (42.4)	31 (52.5)	3 (5.1)	59
<b>Total</b>	39	33	13	85
<b>Chi-square test</b>		$x^2 = 26.640$		
		$df = 0$		
		$p < 0.001$		

Table 4. Descript Statistics of Tweets

<b>Statistics</b>	<b>All Tweets</b>	<b>Positive Tweets</b>	<b>Negative Tweets</b>
Number of Tweets	35,620	18,108	17,512
Daily Average	603.73	306.92	296.81
Standard Deviation	616.96	314.95	310.32
Maximum	3	3	0
Minimum	2352	1268	1149
Median	398	196	201



## MEDIA FRAMING

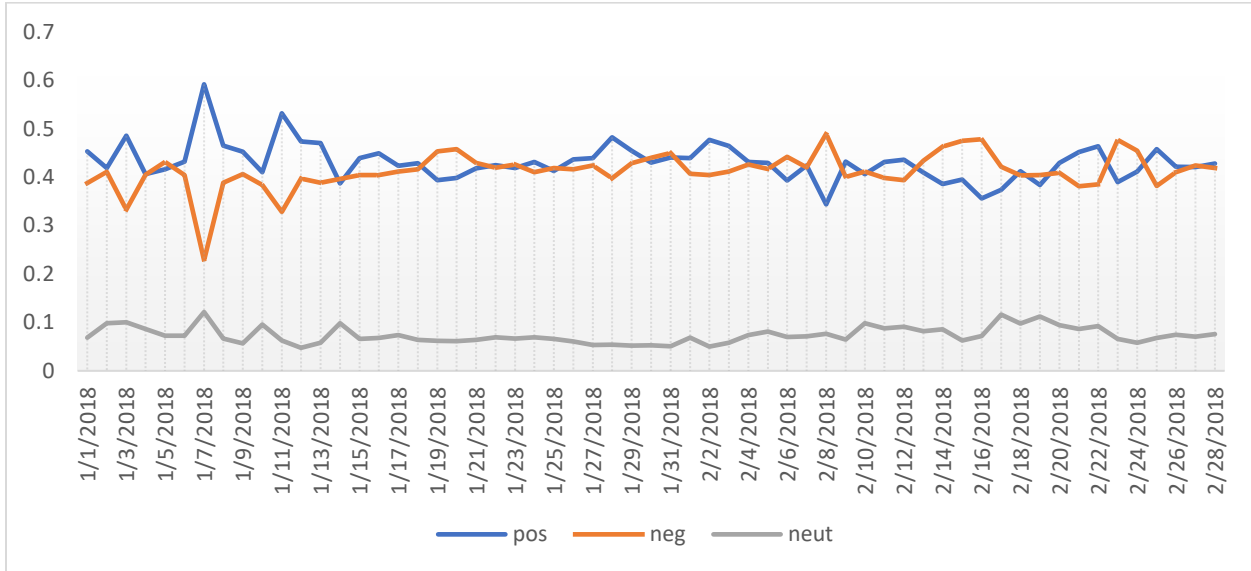
Table 5. Correlation between number of newspaper articles and tweets.

	Positive Tweets	Negative Tweets	Total
Overall Number of Articles			
Neutral	.415*	.376*	.401*
Positive	.385*	.375*	.385*
Negative	.298*	.323*	.315*
Conservative Newspapers			
Neutral	.230	.199	.217
Positive	-.111	-.105	-.110
Negative	.325*	.349*	.341*
Medium-Oriented Newspapers			
Neutral	-.011	-.059	-.035
Positive	.401*	.333*	.372*
Negative	.112	.074	.094
Progressive Newspapers			
Neutral	.336*	.321*	.333*
Positive	.348*	.348*	.352*
Negative	.104	.185	.146
Total			.541*

\*: Significant at 5%

# MEDIA FRAMING

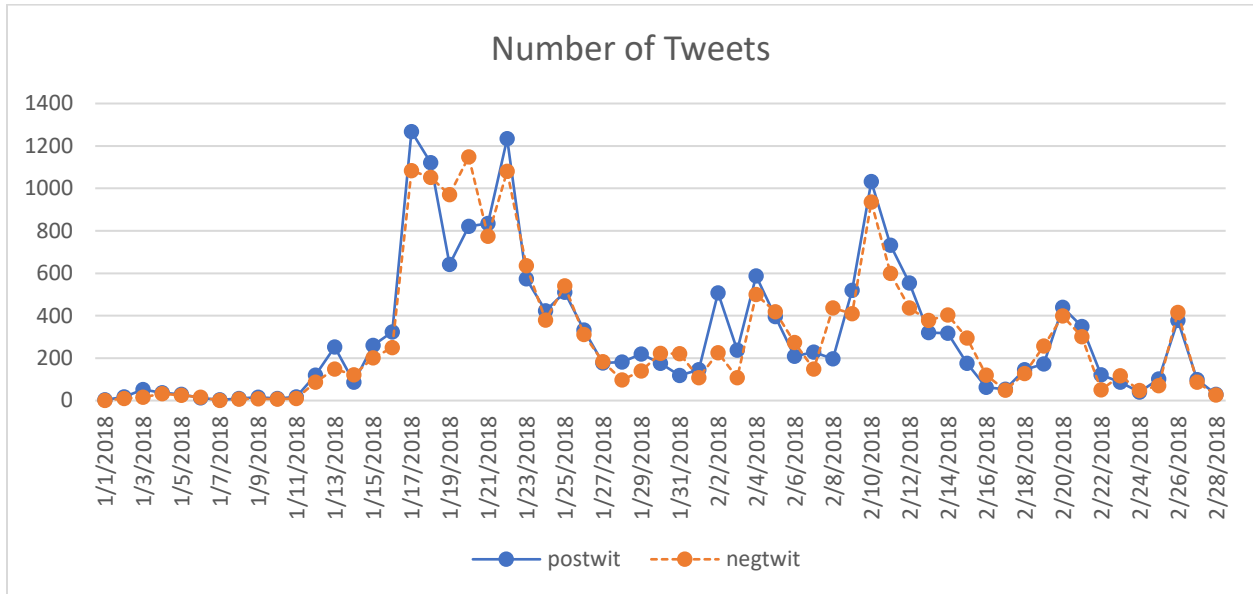
<Figure 1. Ratio of sentiment of words in tweets>





# MEDIA FRAMING

<Figure 2. Number of positive and negative tweets>



# MEDIA FRAMING

<Figure 3. Difference between number of positive and negative tweets>

