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Watching foreign news online: The role of foreign nation knowledge, need for cognition, and attention in the processing of international news videos on the Internet

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Abstract

An experimental study explored factors that affect the retrieval of information from online international news videos by applying the knowledge gap hypothesis and the limited capacity model. It was found that the knowledge of foreign nations positively predicted the retrieval of information from online videos about these nations. The need for cognition moderated this effect: participants with a higher need for cognition successfully retrieved information even if they did not know much about foreign nations. Perceived attention paid to the videos positively predicted news information retrieval and mediated the effects of the need for cognition on this dependent measure.

Keywords: knowledge of international affairs, need for cognition, perceived attention, foreign news processing, retrieval, online news videos

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The current study explored how much information individuals remember from foreign news presented in online video format and what factors affect this process. The study applied the knowledge gap theoretical framework (Tichenor, Donohue, and Olien, 1970) and the limited capacity model (Lang, 2000, 2006) to investigate if the retrieval of information from international news videos differs as a function of previous knowledge of foreign nations and the need for cognition. In addition, we explored the role of perceived attention in this process.

Empirical evidence suggests that news on the Internet, which used to be thought of as a predominantly text-based medium, does not help to reduce the knowledge gap (Grabe, Kamhawi, and Yegiyani, 2009). We asked whether the same holds true for the popular format of online news video, which has been adopted fast in the news industry (Layton, December/January, 2008; Webdesigner Depot, November 2009). Although the use of the Internet is associated with information gains on certain topics, some topics, such as foreign affairs, are at a greater risk of being unnoticed. While scholars proposed a positive link between the attention to news on the Internet and international knowledge (Beaudoin, 2008), some pointed out that international news today is simply less available online, especially to those who live in developed countries (Berger, 2009). News media in developed countries, Berger (2009) noted, don't fully use the international potential of cyberspace, focusing on the coverage of domestic affairs and localized issues. The growth of the Internet, along with the decline in foreign correspondent bureaus and focus on local events (Arnett, November 1998; Enda, December/January, 2011), put a greater responsibility on online users in international news selection and processing. One has to make extra effort to find information and learn about the current affairs in foreign countries. This is

why the present study explored not only how the knowledge of foreign nations helps the processing of international news stories presented in online video format but also how the need for cognition, or the eagerness to engage in effortful learning of new, complex information (Cacioppo and Petty, 1982 Thompson, 1995), facilitates such processing. We also asked if perceived attention paid to international news videos mediates the effects of the need for cognition on retrieval of information from online foreign news videos.

Knowing little about the world

The shrinking of international news coverage in the U.S. has been discussed for over a quarter of a century. Scholars and professionals attribute such decline to a number of economic, political, industry specific, and technological factors, such as high costs of foreign correspondent bureaus, the end of the Cold War, high interest in local, community news, as well as “soft news”, and the rise of the Internet (Arnett, November 1998; Iyengar and Morin, July 2006; Martin-Kratzer and Thorson, 2010; McPhail, 2006; Schwartz, 1970). Decline in the coverage of foreign affairs and its nature are often discussed in relation to low international knowledge among Americans (Iyengar and Morin, July 2006; Martin-Kratzer and Thorson, 2010). Over the past 20 years, Americans have shown the lowest level of awareness of overseas events, compared with other nations (Beaudoin, 2004; Bennett et al., 1996; Iyengar and Morin, July 2006; Sanders and Stewart, 2003). Iyengar and Morin (July 2006) suggested that the difference in the knowledge of domestic and foreign affairs reflects a new knowledge gap, where people know significantly more about national than international current events. According to Pew Research Center (Kohut, Morin, and Keeter, 2007), such domestic-international knowledge gap is also observed across genders. Males possess equal knowledge of international and domestic affairs while females know much less about international affairs.

The shrinking of international news coverage and low level of foreign knowledge among Americans suggest the importance of research that establishes theoretical links among international knowledge, media use, and socio-demographic and psychological factors. Scholars tested several antecedents of international knowledge and found that education, attention to news, news media use, among others, positively contributed to the knowledge of foreign affairs (Arbitter et al., 2011; Beaudoin, 2004; Bennett et al., 1996; Gandy and Waylly, 1984). The current study adds to the existing body of literature by experimentally testing how awareness of certain foreign objects (foreign nations), along with the need for cognition and perceived attention paid to media messages, adds to the successful retrieval of information from these messages.

Internet access and the knowledge gap

The Internet as a source of news that is widely available today not only on computers but also on mobile phones continues to grow in popularity. Despite this, existing research has outlined several gaps associated with the accessibility and use of the Internet (Bonfadelli, 2002; Grabe, Kamhawi, and Yegiyan, 2009; Lee, 2009). Grabe et al. (2009) stated that if the Internet became a central medium to disseminate news in its current, text-based format, the knowledge gap between Internet users with different levels of education would widen. These scholars found that highly educated individuals showed better memory for information from text-based media (newspapers and the Web) than low educated individuals, who were better at remembering information from television stories. Grabe et al. (2009) suggested that people with higher education had better skills to process text, while audio-visual information was easier to process, due to longer evolution history, especially by those with lower levels of education.

Today, four out of five Americans enjoy access to the Internet (78% penetration rate, Internet World Stats, 2013). Yet, international knowledge rates stay low, which suggests that the *physical access* to technology (computer and the Internet) is often not enough to ensure successful learning from online news. As Grabe and colleagues (2000) put it, “physical availability of equipment through which citizens can search and locate information in a media environment is distinguished from the ability of media consumers to access and make use of online information” (Grabe et al., 2000: 5). Thus, one has to account for factors that affect information processing on social and cognitive levels (Grabe et al., 2000; Newhagen and Busy, 2004). The discussion of *social access* to mediated information is directly related to the knowledge gap hypothesis, which states that people of higher socio-economic status would be better at and faster in learning from mediated messages, compared with those who represent lower socio-economic groups (Tichenor, Donohue, and Olien, 1970). Social access accounts for differences in learning about foreign affairs among different socio-economic groups. For example, it has been found that the international knowledge gap exists between people with higher and lower levels of education (Arbitter et al., 2011; Beaudoin, 2004; Bennett et al., 1996; Iyengar and Morin, July 2006; Gandy and Waylly, 1984). Gender also contributed to such gap (Kohut et al., 2007). Although gender was not included in the present study as an independent variable, it was treated as a possible covariate.

The notion of *cognitive access* is directly related to the effectiveness of information processing and comprehension. Even with the availability of technology and social access, an individual might experience difficulties learning from online news sources because learning depends on the amount of psychological resources devoted to message processing (Newhagen and Busy, 2004). For example, a highly educated male (social access) who has access to online

news sites (technology access) might still fail to attend to a foreign news story due to a number of factors ranging from relevance of mediated information and motivation to process it and processing conditions (e.g., multitasking) to content and structural features of the news story. While numerous studies explored different aspects of the knowledge gap theory with the method of survey, a few focused on testing the link between socio-economic status (e.g., level of education) and cognitive information processing experimentally (Grabe et al., 2000; Grabe, Yegiyani, and Kamhawi, 2008; Grabe, Kamhawi, and Yegiyani, 2009). It was shown that people with higher levels of education encoded, stored, and retrieved more information related to news stories and some of these effects on memory persisted over time (Grabe et al., 2000; Grabe, Yegiyani, and Kamhawi, 2008; Grabe, Kamhawi, and Yegiyani, 2009).

While the experimental studies mentioned above tested cognitive and emotional differences in news processing between two socio-economic groups (people with high and low levels of education), the current study approached the concept of the knowledge gap on the level of cognition. Instead of asking people about their education, we measured how much information about certain foreign nations participants could retrieve before watching international news stories about these nations. We examined if differences in foreign knowledge would be reflected in remembering information from foreign news stories. Following previous experimental studies (Grabe et al., 2000; Grabe, Yegiyani, and Kamhawi, 2008; Grabe, Kamhawi, and Yegiyani, 2009), the present study applied the limited capacity model of motivated mediated message processing (LC4MP, Lang, 2006) to studying cognitive processing of foreign news.

LC4MP and international knowledge

According to the limited capacity model of motivated mediated message processing (Lang, 2006), humans have limited ability to process information from the environment,

meaning that they have certain amounts of cognitive resources to perform various cognitive tasks, including reactions to mediated messages. These reactions occur in automatic or controlled manners and change over time.

There are three main memory subprocesses that are directly involved in message processing: encoding, storage, and retrieval (Lang, 2000, 2006). Encoding is the registration of incoming information in memory (Baddeley, 2004; Lang, 2000, 2006). During encoding, people automatically or controllably allocate cognitive resources to motivationally relevant and novel stimuli and create their mental representations (Lang, 2006). Although encoding is a necessary condition for storage, not every encoded item is stored in long-term memory (Lang, 2006). Storage, the second memory process, is responsible for maintaining information in mind and updating preexisting knowledge schemas with new items (Baddeley, 2004; Lang, 2000, 2006). Storage, which is directly related to the function of working memory (Baddeley, 2004), also occurs with cognitive costs. This process reflects how much new information an individual learns from a message. The third memory process, retrieval, refers to the availability and accessibility of information in memory, which is measured with free recall tests (Baddeley, 2004; Lang, 2000, 2006). Retrieval, as well as storage, is understood in relation to the associative network model of memory and priming (Eysenck, 1993; Lang, 2000; Roskos-Ewoldsen, Roskos-Ewoldsen, and Carpenter, 2008). According to the associative network model, memory is organized as a network of related constructs. After an individual is exposed to an object or category, relevant nodes are activated. The stronger the associations among the nodes, the easier the retrieval of relevant information is (Lang, 2006; Roskos-Ewoldsen et al., 2002). In order to process a message about a foreign nation, one would have to not only encode the message but also concurrently retrieve some previous knowledge to make sense of it (Lang, 2000). If a person

is familiar with the topic and has the knowledge of the foreign nation that is easily accessible in memory, information retrieval will not require allocation of great amount of cognitive resources and won't harm the encoding and storage of the message significantly. If the person lacks the knowledge or it is less accessible in memory, then information retrieval will be more cognitively demanding and may hinder learning from the message (Lang, 2000). Since foreign nations often serve as central objects in international news, we proposed that the retrieval of knowledge about foreign nations (knowledge of foreign nations further in text) would positively predict the retrieval of information from international news messages. In other words, the more facts individuals are able to recall about a certain country, the more information they will remember from a foreign news story. Thus, the gap in the knowledge of foreign nations is reflected in how much information individuals learn about these nations from news.

Some researchers note that forced-choice, closed-ended questions about foreign affairs, which are commonly used to measure knowledge, have only "limited means to examine what people know" (Beaudoin, 2004: 460; Kosicki and McLeod, 1990). Beaudoin (2004) suggested to use not only close-ended questions but also open-ended probes to measure international knowledge defined as "the ideas and information that people can recall" (Beaudoin, 2004: 460). Free recall tasks were used in the current study as a measure of foreign nation knowledge. Free recall was also used as a measure of information retrieval from international news stories.

H1: The knowledge of foreign nations, measured as free recall, will positively predict the retrieval of information from online international news videos also indicated by free recall.

Need for cognition

The knowledge gap hypothesis posits that people who possess the knowledge about a subject matter have greater chances of learning more information about this subject matter. However, does it always mean that those who are not aware of the topic will fail to successfully

learn about it? We predicted that not only the knowledge of foreign nations but also the eagerness to learn new information could lead to efficient retrieval of international news. We predicted that the individual difference in the need for cognition would account for such eagerness. Thus, the need for cognition, or the need to understand and structure the knowledge of a situation, phenomenon, or environment (Cacioppo and Petty, 1982), was included in the design of the present study as another independent variable.

The need for cognition refers to motivation to organize and evaluate incoming information (Thompson, 1995) and eagerness to think and “quest the reality” (Cacioppo and Petty, 1982; Murphy, 1947). People with a lower need for cognition reported more negative attitudes toward complex cognitive tasks, while people with higher need for cognition were found to enjoy “effortful analytic activity” (Petty and Cacioppo, 1986: 151; Cacioppo and Petty, 1982). In addition, the need for cognition has been found to negatively correlate with close-mindedness and positively – with general intelligence (Cacioppo and Petty, 1982). Considering that international news has greater chances of being perceived as irrelevant, especially if it doesn’t involve the U.S. (Wanta and Hu, 1993), its processing may be associated with a greater cognitive effort and require greater general intelligence. Thus, the retrieval of information from online international news videos may vary as a function of the need for cognition.

The evidence suggests that the need for cognition shapes motivations to use media, affects the exposure to cognitively demanding media contents (e.g., politics), and facilitates interest in and discussion of these media contents (Thompson, 1995). Individuals with a higher need for cognition have been found to make greater cognitive efforts to process message information and form attitudes toward message content (Cacioppo, Petty, and Morris, 1983; Petty

and Cacioppo, 1986) compared to their counterparts who didn't indicate a high need for cognition.

H2: The need for cognition will positively predict the retrieval of information from online international news videos indicated by free recall.

We also predicted that the need for cognition would help to reduce the gap between individuals who possess greater knowledge of foreign nations and those who know little about these nations.

H3: The need for cognition will moderate the effects of foreign nation knowledge, which will be reflected in reducing the gap in the retrieval of information from online international news videos between those who have greater and lower knowledge of foreign nations.

Knowledge, need for cognition, and attention

Message processing often depends on message features, motivations, and conditions in which this processing happens (Lang, 2006; Stangor and McMillan, 1992). These factors, among others, determine how much cognitive resources one allocates to processing, for example, how much attention he/she pays to a mediated message. Attention is conceptualized as the automatic or controlled selection of stimuli from the environment by allocating some amount of cognitive resources to exploring these stimuli. Attention is viewed as a necessary condition of successful information processing (Eysenck, 1984). Perceived attention to news has been shown to positively predict international knowledge about foreign nations (Beaudoin, 2004, 2008). The present experiment employed the measure of perceived attention to test if it is positively associated with the retrieval of information from online news about foreign nations.

H4: The greater perceived attention to online international news videos will be associated with greater retrieval of information from these videos measured as free recall.

Finally, we asked if attention (measured as perceived attention in the present study) would mediate the effects of the knowledge of foreign nations and the need for cognition on

information retrieval. If an individual is knowledgeable of the topic, he/she may be more prone to pay attention to foreign news stories and, as a result, remember information from them. Alike, individuals with higher need for cognition may pay more attention to the news videos and, as a result, indicate higher level of memory for news content. Since attention is viewed as necessary for successful information processing, we predicted that it would strengthen the effects of the two independent variables on the dependent measure.

RQ1: Will perceived attention paid to online international news videos mediate the effects of the knowledge of foreign nations on news story retrieval measured as free recall?

RQ2: Will perceived attention paid to online international news videos mediate the effects of the need for cognition on news story retrieval measured as free recall?

Method

Participants

A total of 109 students from a large Midwestern university in the U.S. took part in the experiment. Seventeen participants did not finish the experimental procedure, and their responses were excluded from the analysis. Another eight reported they were international students. Their responses were also excluded to avoid undesirable noise. Out of 84 participants with the mean age of 21 ($SD=.95$), 68% were males. About 87% reported they were White/Caucasian, followed by African-American (7%), Latino/Hispanic (4%), and Asian (2%).

Study design

The current study employed a 2 (foreign knowledge: low vs. high) x 2 (need for cognition: low vs. high) x 4 (message repetition) mixed experimental design. Two independent variables were 1) foreign knowledge measured as free recall of information about four foreign nations and 2) the need for cognition. Both variables were measured rather than manipulated and treated as between-subjects variables. Message repetition was a within-subjects factor where

each participant viewed four online news stories about international affairs. Message repetition is an important component of mass communication experimental designs as it ensures the stability of manipulation across various messages (Reeves and Geiger, 1994). Perceived attention paid to online international news videos was later included in statistical tests as a mediator. The retrieval of information from online international news videos measured with free recall was a dependent variable.

Procedure

The study was conducted in one of the university's computer labs that allows up to 20 participants at a time. Each computer with Media Lab software (Jarvis, 2008) was equipped with headphones; participants did not hear each other during the experiment. Each participant rated 11 statements as part of the need for cognition measure and answered several open-ended questions about foreign countries (free recall task). After a short distractor, participants watched four online news videos about four countries (China, Greece, Israel, and Yemen) and answered attention and arousal questions placed after each video (arousal was treated as a covariate in the present study). After the second short distractor, participants completed another free recall task that was employed to measure the retrieval of information from online international news videos. At the end, they reported demographic information.

Stimuli

Participants watched four stories downloaded from Newsy.com, a multi-source online video news service (Newsy.com, 2013). The videos were selected by a number of trained students who ensured that they were neutral in tone and weren't sensational, highly arousing, or familiar. Video 1 described a recent Chinese decision that would affect the world economy. Video 2 was about Greece's financial debt. Video 3 was devoted to the prisoner exchange

between Palestine and Israel. Video 4 informed viewers about the meeting of 20 world leaders who discuss reforms in Yemen.

Independent variables

Need for cognition. Need for cognition, an individual difference variable, was measured with the use of an 11-item index (Thompson, 1995). Each item was measured on a 9-point scale from 1 (not at all) to 9 (a lot), Cronbach's $\alpha = .74$.

Foreign nation knowledge. Free recall tasks were used to measure the knowledge of foreign nations. Each participant was asked to describe everything he/she knew (e.g., ideas, events, people, places, objects, or issues) about several countries. Four foreign countries were in the focus of the current study: China, Greece, Israel, and Yemen. Later in the study, participants watched four online news videos about these countries. To fade the priming effect, participants also completed free recall tasks for Argentina and Somalia.

Open-ended responses were coded by counting ideas, events, people, places, objects, or issues that were correctly identified by participants. A free-recall ratio variable was created for each nation (Krippendorff's alphas: China = .72; Greece = .70; Israel = .88; Yemen = .81; Hayes and Krippendorff, 2007). A principal components analysis showed that the four variables loaded well together; thus, they were collapsed into a single factor (Table 1; Cronbach's $\alpha = .88$).

The need for cognition and foreign nation knowledge were dichotomized by performing median splits to obtain categorical variables for analysis of variance (ANOVAs).

Dependent measure

Retrieval of information from news. To measure how well participants could retrieve information from each online international news video, we asked them to describe in detail everything they could remember from that story (e.g., ideas, events, people, places, objects, or

issues). Open-ended responses were coded (Krippendorff's alphas: China story = .73; Greece story = .93; Israel story = .95; Yemen story = .78; Hayes and Krippendorff, 2007), and four news retrieval variables – one per story – were created. These variables loaded well together and were collapsed into one DV (Table 1; Cronbach's $\alpha = .80$).

 Table 1 is about here

Perceived attention

After watching each online news video about a foreign country, participants were asked how much attention they paid to it. This variable was measured with the use of four 9-point items (Potter and Choi, 2006) ranging from 1 (Strongly disagree) to 9 (Strongly agree), Cronbach's α : China = .93; Greece = .93; Israel = .95; Yemen = .89. A principal components analysis showed that the four variables loaded well together; they were used to compute a single factor of perceived attention (Table 1; Cronbach's $\alpha = .76$).

Covariates

Arousal and gender were included in the study as possible covariates. Arousal was measured with one 9-point item ("Please indicate how arousing you believe the story you just viewed was") from 1 (not at all) to 9 (a lot). Four items for China, Greece, Israel, and Yemen, loaded well together and were collapsed into a single variable (Table 1; Cronbach's $\alpha = .85$). A simple linear regression indicated no significant relationship between message arousal and the dependent variable of retrieval (free recall; $\beta = -.03$, $p = .804$); thus, arousal was not included in further analyses as a covariate.

Gender was measured with other demographic variables. A t-test with gender as an IV and retrieval (free recall) as a DV showed no difference between female and male participants in the retrieval of information from online foreign news videos ($t(79) = -1.62$, $p = .110$). In addition,

no two-, three-, or four-way interaction effects with other independent variables (the need for cognition, knowledge about foreign nations, and perceived attention) were found significant.

Thus, gender was not included in statistical analyses as a covariate.

Results

H1, H2, and H3

Hypotheses 1 and 2 posited that the knowledge of foreign nations – measured as free recall – and the need for cognition would positively predict the retrieval of information from online international news videos also measured as free recall. According to Hypothesis 3, there would be an interaction effect of knowledge and the need for cognition on retrieval, such that the need for cognition would reduce the gap in free recall between those who have high and low foreign nation knowledge.

The data were entered in a 2 (Foreign Nation Knowledge) x 2 (Need for Cognition) ANOVA with free recall of news stories as a DV to test for significant main and interaction effects of the two factors. The analysis indicated that the knowledge of foreign nations significantly predicted the retrieval of information from online international news videos, $F(1,77)=9.63, p=.003, \eta^2=.11$. Participants who showed greater knowledge of foreign nations were found to recall more information from the news stories ($M=2.89, SD=.99$) compared with participants who knew less about the four nations ($M=2.16, SD=1.00$). Hypothesis 1 was supported.

The main effect of the need for cognition on free recall was not found significant, $F(1,77)=1.78, p=.187$. Hypothesis 2 was not supported.

The interaction effect of knowledge and need for cognition approached significance, $F(1,77)=3.23, p=.076, \eta^2=.04$. Pairwise comparisons indicated that those with the high need for

cognition recalled significantly more information if they had greater knowledge of the foreign nations ($M=3.18$, $SD=.99$) compared with those with the high need for cognition who showed lower knowledge of the countries ($M=2.11$, $SD=.90$), $p=.001$. Those with greater knowledge were also more likely to recall information from the videos if they indicated a higher need for cognition, compared with those who had the knowledge but reported low need for cognition ($M=2.50$, $SD=.87$), $p=.032$. Those participants who reported low knowledge and low need for cognition were found to recall little information from the news stories ($M=2.21$, $SD=1.11$; Table 2, Figure 1). Hypothesis 3 was supported.

 Figure 1 and Table 2 are about here

H4, RQ1, and RQ2

Hypothesis 4 stated that the greater the attention individuals pay to online international news videos, the more information from these stories they would recall. Research questions 1 and two asked if perceived attention paid to online international news videos would mediate the effects of foreign knowledge and the need for cognition on free recall of information from these videos.

To test hypothesis 4 and answer research questions 1 and 2, a model of indirect effects was run with the use of bootstrapping (Preacher and Hayes, 2008). Bootstrapping has been selected as a robust statistical method that allows to test for mediation in small samples (Preacher and Hayes, 2008). The mediation model tested for the direct effect of IV on DV (c' path), the effect of IV on mediator (a path), the effect of mediator on DV (b path), the indirect effect of IV on DV through mediator (ab path), and the total effect of IV on DV (c path). Foreign knowledge and the need for cognition were included in the model as IVs (the two variables were included in

the model separately, one at a time). Free recall of news stories was included in the model as a DV. Perceived attention to online international news videos was treated as a mediator.

First, it was found that perceived attention significantly predicted free recall of information from news stories. The more attention individuals reported they paid to the news stories, the more information they recalled from these stories (Table 3; mediator to DV path (b path)). Hypothesis 4 was supported.

Second, no mediation effect was found when the knowledge of foreign nations was entered in the model as an IV. At the same time, perceived attention mediated the effects of the need for cognition on free recall of information from online international news videos. The normal theory test indicated a significant indirect effect and bootstrapping results supported this finding (ab path, Table 4). In addition, a and b paths were found significant, which is in line with the requirements for mediation analysis (Baron and Kenny, 1986; Preacher and Hayes, 2008; Table 4). While the need for cognition didn't affect free recall directly, it affected the DV indirectly, through attention paid to online international news videos (Figure 2), which means that those with a higher need for cognition successfully remembered information from the news stories through paying greater attention to these stories.

 Figure 2, Tables 3 and 4 are about here

Discussion

The growth of the Internet that occurred during the time of decline in international news coverage puts a greater responsibility on online users in processing news about foreign nations. The present study investigated whether international news stories presented in online video format help the Internet users to learn information about foreign affairs. The study took the knowledge gap perspective and applied the limited capacity model to explore whether a gap in

knowledge of foreign countries would be reflected in remembering information from online international news videos. Previous evidence suggests that online news presented as text doesn't reduce the knowledge gap between people with different levels of education (Grabe et al., 2009). The present study showed that the same is true for news presented in online video format. As predicted, participants who possessed greater knowledge of foreign nations were more successful in retrieving information from the videos. Higher levels of availability and accessibility of foreign nation knowledge in memory minimized the amount of cognitive resources required to process news stories, which led to their easier processing and greater recall. Moreover, those who reported a higher need for cognition were found to retrieve more information from online videos even if they did not know much about the foreign nations. This finding suggests that the decrease in the knowledge gap greatly depends on individual differences in information processing. Those with greater knowledge of foreign nations and a higher need for cognition were found to be the most successful in retrieving information from the videos.

The current study indicated no main effect of the need for cognition on story retrieval. The lack of findings could be explained by the use of online video stories in the experimental design. As previous research suggests, text-based formats may pose greater cognitive challenges for information processing than audio-visual formats (Grabe et al., 2009). Since the need for cognition is positively associated with general intelligence and efficiency in performing complex cognitive tasks, it could make a difference if we used text-based, not video, stimuli in our study. Furthermore, the need for cognition was found to affect news retrieval indirectly, through perceived attention paid to online international news videos. This finding suggests that only when participants with a higher need for cognition exerted an effort to concentrate on the contents of the manipulated videos, they succeeded in retrieving more information from these

videos. Thus, high need for cognition on its own might not be enough for efficient foreign news processing; news stories need to grab and maintain the attention of the viewer in order to be remembered well.

While the existing survey-based research has established the link between self-reported attention paid to news on the Internet and international knowledge (Beaudoin, 2008), the present study offered the experimental evidence that perceived attention paid to international news presented in online video format positively predicts memory for international news as those who reported that they concentrated on the contents of stories more indicated greater story recall.

The current study offers a number of theoretical and practical implications. It is one of a few studies focusing on information processing aspect of international news. It tests the knowledge gap hypothesis experimentally and contributes to its understanding not only as socio-economic but also as a cognitive phenomenon. As the results indicated, those who know more about a topic tend to learn more from topic-relevant mediated messages. Future scholars should continue to explore this phenomenon and study factors that may reduce such knowledge gap on the level of cognition. This is particularly important for future investigations of cognitive access to online international news in light of low awareness of foreign affairs in the United States.

Furthermore, the present study focuses on the need for cognition as an individual difference variable important for international news processing. Future researchers should continue to explore other individual difference factors that may affect the processing of the international news. Two questions arise in this regard. The first question is about the psychographic portrait of regular international news consumers: what are their personality traits, what attitudes toward the world do they hold, what lifestyles do they live? The second question is about those who are not considered conventional foreign news consumers. How to engage them

to learn more about the world outside the borders? Perhaps one of the answers is to pay greater attention to the format and structural features of news stories about other countries that are being offered by international reporters to American audiences. As the present study showed, attention to a message plays a crucial role in its efficient processing. Thus, future research should continue to further investigate how message characteristics may maintain the attention of media users – without sliding into sensationalism or negative stereotyping – and contribute to their knowledge with quality information.

The study offers important findings; yet, it has a number of limitations worth noting. First, the two main independent variables were measured rather than manipulated. Future international news research needs to focus on message content and structure more. Second, retrieval was the only measure of memory for foreign news videos employed in the present research. The intention was to understand how well participants were able to retrieve information from the foreign news videos from their memory. It is important, however, to understand better what happened between the exposure to a message and message information retrieval. Thus, future studies should employ the measures of encoding and storage in addition to the measure of retrieval. Finally, in the process of selecting videos for the stimuli, not every country had an equal chance to be represented. We focused on the materials available at that current moment in Newsy.com newsroom.

Overall, the present research offers valuable evidence to shed the light on what factors affect memory for foreign news presented in online video format.

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Table 1

Factor loadings and Cronbach's α for Foreign Nation Knowledge (Measured as Free Recall), Perceived Attention, Perceived Arousal, and Retrieval of Information From Online Foreign News Videos (Measured as Free Recall)

	Knowledge (Free Recall)	Attention	Arousal	Retrieval (Free Recall)
China	.862	.664	.805	.800
Greece	.862	.800	.825	.816
Israel	.919	.744	.864	.783
Yemen	.828	.839	.837	.766
Eigenvalue				
Total	3.016	2.341	2.774	2.506
% of Variance	75.400	58.518	69.358	62.659
Cronbach's α	.88	.76	.85	.80

Table 2

Means and Standard Deviations for a 2 (Foreign Nation Knowledge) x 2 (Need for Cognition) Analysis of Variance with Retrieval of Information From Online International News Videos (Free Recall) as a Dependent Measure

		M	SD	N
Need for Cognition	Knowledge			
Low	Low	2.21	1.11	21
	High	2.50	.87	17
	Total	2.34	1.01	38
High	Low	2.11	.90	20
	High	3.18	.99	23
	Total	2.69	1.08	43
Total	Low	2.16	1.00	41
	High	2.89	.99	40
	Total	2.52	1.06	81

Table 3

The Need for Cognition and Perceived Attention Paid to Online International News Videos → Retrieval of Information From Online International News Videos Measured with Free Recall

	<i>B</i>	<i>SE</i>	<i>t</i>
IV to mediator (a path)	.50***	.13	3.84***
Mediator to DV (b path)	.28**	.09	3.15**
Total effect of IV on DV (c path)	.16	.11	1.43
Direct effect of IV on DV (c' path)	.01	.11	.13

DV model summary $R^2 = .14; F(2, 78) = 6.11^{**}$

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 4

Mediation Effect of the Need for Cognition on Retrieval of Information From Online International News Videos (Free Recall) Through Perceived Attention Paid to Online International News Videos

	Product of Coefficients			Bootstrapping	
	Point Estimate	SE	Z	Lower	Upper
Perceived Attention	.14*	.06	4.46	.0627	.2731

* $p < .05$; ** $p < .01$; *** $p < .001$

Figure 1
Interaction Effect of Foreign Knowledge and the Need for Cognition on Retrieval of Information from Online News Videos about Foreign Countries

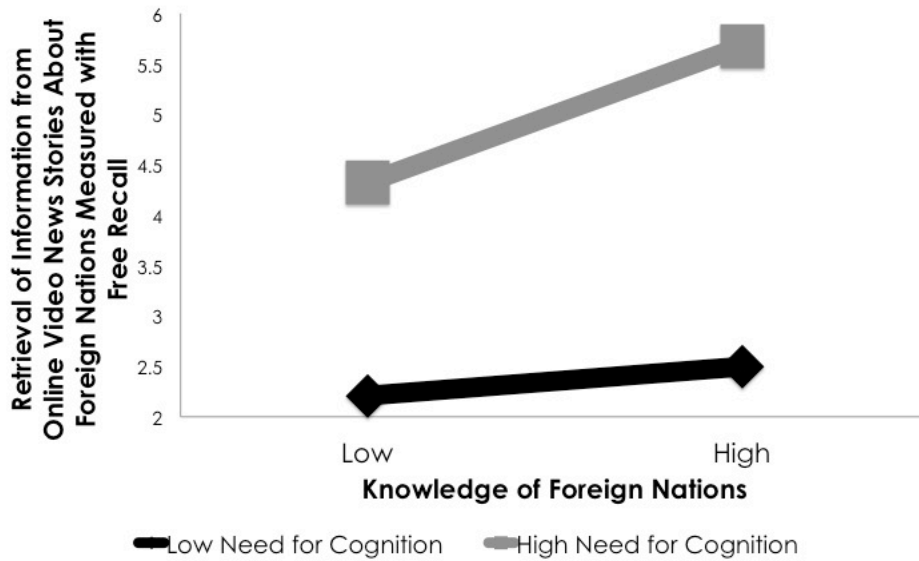


Figure 2
Mediation Model: Need for Cognition on Retrieval of Information From Online International News Videos Through Perceived Attention Paid to the Videos

