

OUT OF SIGHT OUT OF MIND:
FACTORS IN LOW LEVELS OF INTERNATIONAL NEWS KNOWLEDGE

A Thesis presented
to the Faculty of the Graduate School
at the University of Missouri-Columbia

In Partial Fulfillment
of the Requirements for the Degree

Master of Arts

by
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DECEMBER 2009

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The undersigned, appointed by the dean of the Graduate School, have examined the thesis entitled

OUT OF SIGHT OUT OF MIND:
FACTORS IN LOW LEVELS OF INTERNATIONAL NEWS KNOWLEDGE

presented by Charlotte Bellis,

a candidate for the degree of Master of Arts,

and hereby certify that, in their opinion, it is worthy of acceptance.

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Professor Dr. Steve Hackley

Professor Lynda Kraxberger

Professor Mike McKean

To my parents, sister, friends and all the Journalism professors -

Thank you. You gave me character.

“Character is higher than intellect. A great soul will be strong to live as well as think.”

- Ralph Waldo Emerson.

Jason - thank you for your strength, belief and love. Your morality amazes me and provides me with the strength to push forward and be better.

ACKNOWLEDGEMENTS

This thesis could not have reached the introduction without the guidance's of Dr. Paul Bolls. He changed the perception I had of myself. I came into this Master's program as a young woman who considered herself a people person, ready to report from the field. In the first semester of my Masters Paul, who referred to himself as "the mad scientist" opened my eyes to the academic side of journalism. At the beginning most of it went over my head but Paul promised me I would eventually understand and "be smarter" by Christmas. He was right. It is a credit to Paul's ability as a Professor to turn abstract cognitive theories into relatable and manageable concepts that a 20-something can actually enjoy learning. I appreciate his patience and how he had my best interests at heart when I had mononucleosis at a critical time during my thesis. His reassuring attitude and unwavering belief in my ability to achieve meaningful findings in this research provided the extra bit of motivation I needed.

I also want to thank my other committee members who made my research so much stronger. Dr. Steve Hackley for his insight into my quantitative measures and overall method. Both Lynda Kraxberger and Mike McKean have been an important part of my experience at the Missouri School of Journalism. Throughout my undergraduate Convergence Journalism degree Lynda and Mike were my Professors. They listened as I attempted to awkwardly pitch my first stories and were always constructive when critiquing my efforts. They have grown to become my friends marked by Lynda's kindness in jumping onboard my thesis committee late in the process. I respect Mike to the utmost degree for his knowledge in Convergence and combined with the academic

world. I believe this research was important for international journalism, but with the industry changing so rapidly I am grateful to have Mike in my corner helping to make sure it can be eternally relevant. I want to thank Lynda for joining my thesis committee on such short notice when she already has so much to balance with student demands, her own continual learning in the field and her family. I will never forget Lynda's support at the Relay for Life event in June 2009. It meant so much to me and others involved.

I want to thank all the Professors who made exceptions and allowed me to recruit participants from their classes: Paul Bolls, Gary Grigsby, Greeley Kyle, Glenn Leshner, Stuart Loory, Randy Reeves, Jim Spencer and Alexandra Wharton. I needed 60 participants; with their help I got 127. The findings in this thesis are much more significant thanks to them.

To the broadcast professors, Greeley Kyle, Gary Grigsby, Randy Reeves, Stacey Woelfel and Kent Collins I was never broadcast but they took me in as one of their own. I think one of the strongest elements of this thesis was that I was able to make it relatable and simplify the concepts. These professors taught me how to do this. They trained me to take complex ideas and issues and boil them down to the elements people care about.

I am so proud to have had the input of Lynda, Mike, Steve and Paul on this project. I respect all of them to the highest degree and know that I have well-rounded and highly respectable body of research thanks to their input and direction.

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OUT OF SIGHT OUT OF MIND:
FACTORS IN LOW LEVELS OF INTERNATIONAL NEWS STORAGE

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ABSTRACT

This study considers the impact of pre-existing knowledge and attitudes on the cognitive processing of international television news messages. This research is valuable because the world is becoming increasingly interconnected through globalization. It is imperative for the continued growth of the United States of America to have a strong knowledge base regarding international news. The study begins by examining the impoverished state of Americans international news knowledge. It integrates different theoretical models for why international news knowledge is so low including integrated network models of human memory and Lang's Limited Capacity Model of Mediated Message Processing. An experiment then tested the impact of attitude accessibility and an impoverished knowledge network on recognition and storage of information in long-term memory. The results are significant for pre-existing knowledge and attitude accessibility on long-term storage, as well as for pre-existing knowledge predicting attitude accessibility. However, attitude accessibility acted oppositely to what was hypothesized. This study recommends that journalists seize on Americans pre-existing knowledge to increase the probability viewers will store their international news stories in long-term memory. It is a strong case for using analogies.

1. INTRODUCTION

Why should international news be important to U.S. viewers? Why is what happens in a country thousands of miles away relevant to a person's every day life in America? The growing effects of globalization and technology, means that international news will become ever-more important to people of every connected country around the world.

McLuhan (1964) wrote in his book *Understanding Media*, "Today, after more than a century of electric technology, we have extended our central nervous system in a global embrace, abolishing both space and time as far as our planet is concerned" (p. 3).

Yet Sanders and Stewart (2003) discovered that the amount of international knowledge Americans possess is far lower than it should be. The writers argue that attention to other parts of the world is short-lived in American classrooms and this fleeting focus on world events results in American children who will be "ill-prepared to work and act as informed citizens" in the future (p. 1).

U.S. news outlets are also providing their audiences low levels of international information. Shoemaker, Chang and Brendlinger (1987) did research on what stories U.S. news outlets were choosing to cover around the world. What they discovered was that out of 168 world news events the New York Times covered just 48.8% of them, while the three major U.S. television networks, CBS, ABC and NBC, together covered only 17.3% of the events.

22 years later, the situation is becoming increasingly problematic. As U.S news outlets tighten budgets, the first to go is often the company's foreign bureaus. The days of the traditional and prestigious U.S. foreign correspondent are almost extinct (Hamilton & Jenner, 2004). This means Americans have less traditional foreign news coverage just at a time when knowledge of the world is needed the most.

Sanders and Stewart (2003) write there is overwhelming data verifying young Americans have an incredibly low level of international knowledge and that if this lack of international knowledge is not addressed the authors believe America's economic prosperity and national security are in bad shape.

Low levels of international knowledge have long been attributed to American's being disinterested, even desensitized to global issues, particularly troubles in Third World Nations (Chang, Shoemaker, & Brendlinger, 1987).

In contrast to prior arguments that Americans lack knowledge of international events and issues Shoemaker argued that humans are "hardwired" to process threatening news as it is prudent to do so for survival (Shoemaker, 1986). As a result, news fulfils the surveillance function that is necessary for humans to keep aware of their surroundings and stay out of danger. Given that many international news stories are negative and present situations involving threats, Shoemaker's hypothesis could be taken to indicate that Americans ought to be more knowledgeable of international situations than they appear to actually be. If indeed humans are hardwired to process threatening news, a majority of international news ought to be attention grabbing for Americans --- particularly stories that contain images depicting the mayhem wrought by human violence and other forms of tragedy that are often reported on in international news. The reported low level of international knowledge held by

Americans indicates that cognitively processing an international news story in a manner that would increase knowledge of an international location or topic is not that simple.

The objective of this thesis is to explore Americans' cognitive processing of international news stories in order to gain insight into a possible explanation for Americans low level of international knowledge. Drawing on Lang's limited capacity model of motivated media message processing (Lang, 2006) and an integrated network model of human memory (Kintsch, 1998; Ericsson & Kintsch, 1995) it will be theorized that individuals who have impoverished memory networks related to international topics have less accessible attitudes towards the people and places involved in international news events which in turn, has a negative effect on recognition and recall of information contained in international news stories. The research question of interest in this study is how do existing memory and attitudes influence cognitive processing of international news stories. Looking at the research question through these different theoretical and conceptual ideas can provide insight into cognitive processes that might be behind Americans low level of international news knowledge, regardless of Shoemaker's theory that people are hardwired to process this news. As Rosengren (1977) said "The goal of the study of international news should be explanation" (p. 67).

Importance of International Knowledge in America Today

Foreign news is important in American society because as awareness of globalization increases, it is fair to assume that "proximity" will increase in the years to come.

Stephens (1988) discovered that the demand for news is documented back to the 16th century and his research shows that interest in news transcends cultural boundaries. Twenty years after Stephens study Berglez (2008) researched similar material examining whether news media content is moving towards more 'global stories'. Berglez found that content is now even "more deterritorialised, involving complex relations and flows across national borders and continents" (p. 1). He suggests that because the context and content of news is changing it's becoming more difficult to categorize news outlets as solely domestic or foreign.

Sanders and Stewart (2003) contend that knowledge of other countries cultures and politics is vital to gaining a job in the future. They add that America's national security relies on the country's ability to understand the nuances of different cultures in order to make intelligent decisions in intercontinental relations.

Beaudoin (2004) also argues that the American people have low levels of international knowledge. He finds that despite a need for increased global interest and understanding international affairs is not a priority in America and that historically the American public has been uninformed about other countries.

In the future Americans will come to understand that news in Europe, Asia or Africa could have as tangible implications in their daily lives as news occurring outside their front door. These kinds of effects are already apparent. For example, the U.S. housing crisis that sent Wall Street crashing in October 2008. The global interdependency of world financial markets meant that as the U.S. financial markets plummeted other countries financial markets were sent into a frantic spin also. In Iraq one country's troubles have become the pain and suffering of another, as U.S. troops die on foreign soil. Another example is the fight against the Taliban and al Qaeda in

Afghanistan, which also involves U.S. troops but is more of a transnational fight as al Qaeda is a global network. Security, stability and politics in Pakistan and surrounding countries also has an affect on U.S. citizens as this greatly influences the probability of U.S. military success in Afghanistan and U.S. domestic security.

Journalists have a responsibility to educate citizens and the fact that U.S. citizens lack knowledge of international events carries significant consequences for the rest of the world. In a democratic society such as in the United States citizens use foreign policy principles as a factor on which they make electoral decisions. It is possible Americans would make different political decisions based on a higher knowledge and understanding of international news. Therefore different politicians would be elected to office and could dramatically change U.S. foreign policy (Beaudoin, 2008).

Haas (1989) elaborates saying that international knowledge determines to a certain extent how Americans develop values, concepts and skills related to global relations.

Aldrich, Sullivan and Borgida (1989) also evaluated the impact of low international knowledge through the realm of political implications asking, “Do presidential candidates waltz before a blind audience?” (p. 123). This is significant in America because the country’s foreign policy decisions decide the fate and circumstances of numerous countries and peoples around the world. The researchers believe that U.S. voters possess little information and weak attitudes concerning their politician’s foreign policy stance. It would seem fair to assume this puts the U.S. in a perilous position for this century as the country enters an economically and socially interdependent world.

Globalization is an ever-pressing trend that means forever more one country's troubles are every countries concern. With this in mind it is unwise for one's self and country to maintain a low level of knowledge regarding international affairs. Baker (1988) wrote 20 years ago that the level of international knowledge (specifically geography) is so bad in the United States that "if World War II broke out tomorrow, the Marines might invade Long Island, the Army Air Corps bomb Kansas City and the Navy shell San Francisco."

2. LITERATURE REVIEW

Impoverished Knowledge Networks

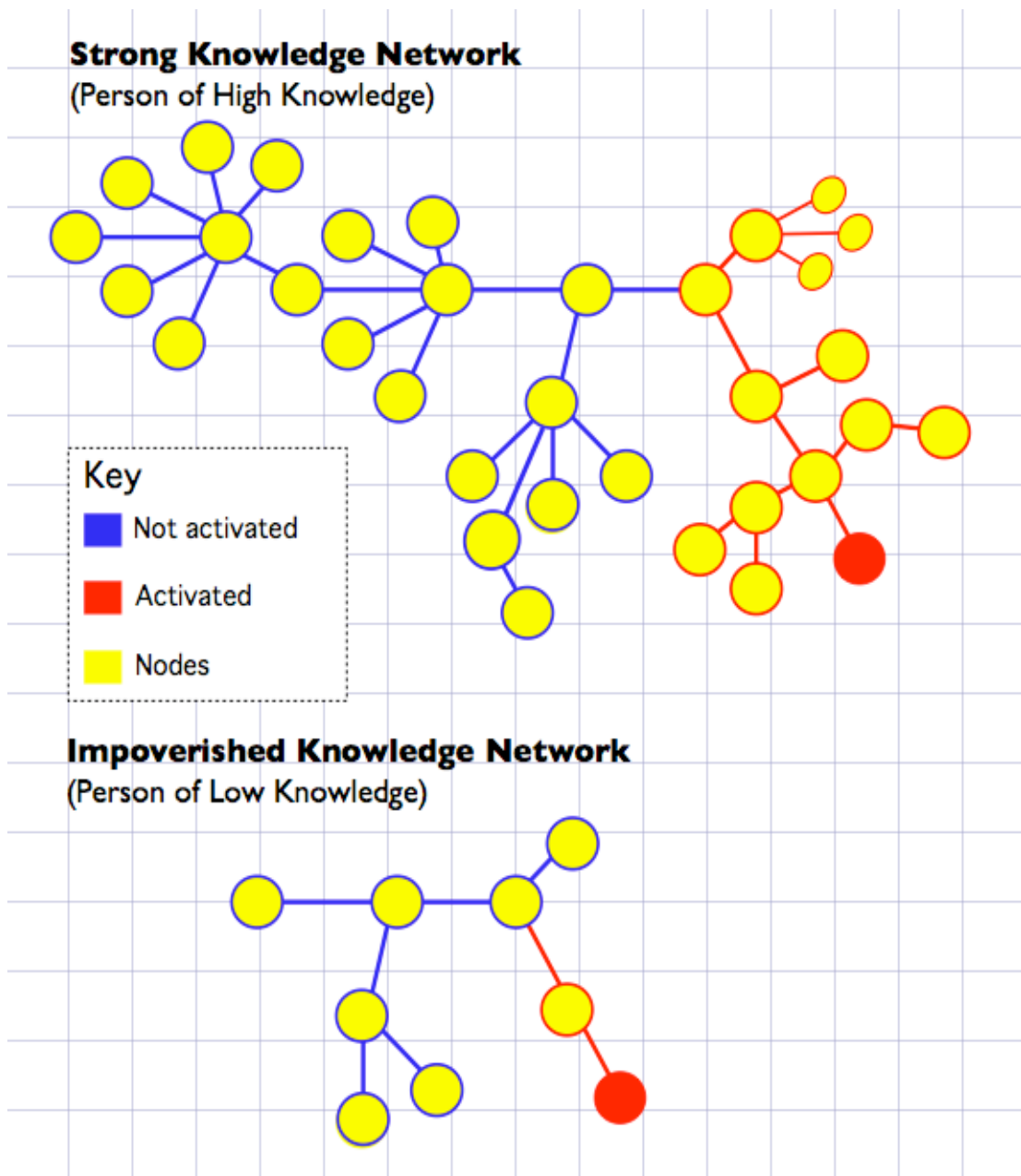
A 2001 report by the National Commission on Asia in the Schools found that “young Americans are dangerously uninformed about international matters, especially Asia, home to more than 60 percent of the world’s population” (Steinemann, Fiske, & Sackett, 2001).

This lack of knowledge about “international matters” can also be defined as an impoverished knowledge (or memory) network. To explain further, Kintsch (1998) describes human knowledge as “a network of propositions” where propositions include schemas, frames, scripts and production rules - these elements link together to form a “knowledge net”. The term ‘node’ is used interchangeably with ‘proposition’ in describing the human knowledge net (Kintsch, 1998). A knowledge network works as a retrieval mechanism (Ericsson & Kintsch, 1995) because propositions (as described above) work in an interrelated fashion. If one proposition is activated, the nodes connected to it activate to increase the size of long-term memory, as explained in **DIAGRAM 1** (Kintsch, 1998). Versace, Labeye, Badard, and Rose (2009) characterize the human knowledge network as a dynamic network of interneural connections created during human development. Gerald Edelman (1987) elaborates on the importance of interneural connections in the conceptualization of intelligence suggesting these connections are continuously changing such as occurs in other areas

of natural selection – if the nodes and connections are not routinely activated they become extinct.

To simplify, intelligence originates in long-term memory and memory consists of a mass of individual nodes that are linked together so that the more nodes and connections that exist the more comprehensive the person's knowledge network and the higher level of intelligence they exhibit. When one node becomes activated, that simultaneously allows connected nodes to also become activated and strengthens the existing nodes and their connections.

DIAGRAM 1 *Impoverished versus Strong Knowledge Networks*



Roper Public Affairs teamed up with National Geographic Education Foundation to test college-aged American students in global geographic literacy. In the past they have found American students have a “poor grasp of geography skills and knowledge.” In a stunning vouch for U.S. ethnocentrism the report claims that

“Americans are far from alone in the world, but from the perspective of many young Americans, we might as well be” (National Geographic-Roper, 2006).

In National Geographic-Roper’s latest study in 2006 only 4 in 10 young Americans could find Iraq on a map of the Middle East, 75% couldn’t find Indonesia on a map directly following the countries’ devastating 2005 tsunami, 90% couldn’t locate Afghanistan and lastly, more than half of young Americans did not know Sudan is in Africa.

The researchers also found that more than half of Americans in the sampled age range (18 – 24) do not believe their lack of knowledge should be a concern to them or that it will render them ineffective in today’s world.

Salter (1991) found using the 1988 National Assessment of Educational Progress (NAEP) that geographic ignorance is real. Salter emphasizes that foreign cultural and political systems are integral to American students engaging in today’s economic and social environments.

Sanders and Stewart (2003) summarize the poor level of knowledge saying, “our high school graduates know far too little about the 90% of the world outside our borders. If we continue to neglect this international-knowledge gap, a whole generation of children will be ill-prepared to work and act as informed citizens in the 21st century” (p. 1).

On a positive note, the National Geographic-Roper (2006) study found that the future looks more promising for the level of international knowledge held by young Americans because of the Internet. The number of young Americans who use the Internet to keep informed on international news has more than doubled since 2002 (from 11% in 2002 to 27% in 2006). There is a correlation between young Americans

who go online to read international news and a greater knowledge of international issues (National Geographic-Roper, 2006).

If this trend continues America will be in much better shape to integrate itself successfully into an increasingly interdependent world. However, it appears the current state of young Americans international knowledge is highly ethnocentric, with few showing a need to understand other countries issues or current events.

Collectively this research suggests a definitive, impoverished knowledge network in young Americans regarding international news events and issues.

Decrease in Available International News Information

In 1922, Walter Lippmann wrote that journalists provide the necessary information their audiences need in order to make sense of the world around them (Lippmann, 1922). Americans primarily depend on mass media to inform themselves about the world around them (Willnat, Garf, & Brewer, 2000), which means that if foreign news production is not accurate, frequent and complete then the international knowledge available for Americans is insufficient to meet their informational needs.

Unfortunately there is research that this is true - that U.S. news outlets are not meeting their constituent's needs as far as international news production is concerned. McPhail (1981, p. 242) writes foreign correspondents are being cut in an effort to reduce high costs and an "introspective mood" has pushed editors to move from hard hitting international news to fluffy, light domestic news.

There is a disparity between an increased need for international news, with a decreased allocation of journalistic resources to reporting international news. Diminishing resources exacerbates the lack of complete and respectable international

news information available to U.S. audiences. Based on Willnat, Garf and Brewer's (2000) research, it is fair to assume U.S. audiences are ill-equipped to make informed and objective decisions about the world around them.

Hoge (1997) writes in *Columbia Journalism Review* that foreign news coverage of political and economic events has been on a steady decline since the late seventies. The author includes data from the Joan Shorenstein Centre that shows a decrease in international news coverage on network television from an average of 45% in the 1970's to just 13.5% in 1995. Hoge (1997) also mentions California State University Professor Michael Emery found in 1989 only 2.6% of news space in newspapers was devoted to international news.

In 1987 U.S. news outlets were covering, at best, less than 50% of world news events (Shoemaker et. al, 1987). The researchers found that U.S. news networks CBS, ABC and NBC, combined only covered 17.3% of world news events.

Recent economic pressures have changed the face of foreign correspondence in America. Foreign news is one of the most expensive operations newsrooms can undertake (Hamilton & Jenner, 2004) and with a decline in news consumption and a recent global recession foreign bureaus are closing and overseas correspondents have fewer job opportunities. Time and space allocated to international news in U.S. broadcasts and newspapers is becoming leaner by the year. For example, at the beginning of 2007 when the Iraq war was still the center of U.S. troop activity abroad, Veis (2007) wrote that since 2003 McClatchy has only half of the American reporting staff they started with in Baghdad, the Boston Globe has closed its bureau and the number of embeds is a quarter of what it was in 2003. It is not surprising Hamilton

and Jenner (2004) wrote the days of the traditional, romanticized foreign correspondent are nearly gone.

Hurwitz and Peffley (1990) wrote that because world news events are “remote, fluid and extraordinarily complicated,” American news organizations have a difficult time reporting on foreign events with a high degree of completeness and often end up with news that is the result of political bias and interpretations.

Even foreign correspondents are disappointed with the level of “quality and quantity of international news content” in U.S. media (Wu and Hamilton, 2004). The correspondents attributed the decline in quantity and quality to lack of resources, inadequate editorial support and attention, insufficient reader interest and the trend toward sensationalized treatment (Wu and Hamilton, 2004).

The Internet does offer some optimism in the level of international news production. Beaudoin (2008) explains that in terms of international information, interactivity on the Internet allows users to seek out information specific to a country, region or international event. If U.S. news outlets are not covering a story Americans can search out information from news outlets in the country where the news event is occurring. In this way Americans can sidetrack the flaws in their own education and news outlets to seek out international information. Further more Beaudoin (2008) argues the Internet increases a viewer’s learning experience as they can choose from a variety of mediums in order to more completely process the international story cognitively.

However, often those who produce international journalism online do not attempt to package the news any differently from traditional broadcasts or copy. For example, international news videos online are commonly down-converted and uploaded

television packages. This means, for example CBS Evening News will broadcast a story and then condense the file size and upload the identical story online – there is no difference in packaging. This point establishes the importance of video in this study as it is still a means by which international news is delivered. Even though the Internet is more interactive, ultimately an individual is still learning information through a packaged video.

Multiple studies (Sundar, Narayan, Obregon, & Uppal, 1998; Johnson, Braima, & Sothirajah 1999; Tewksbury & Althaus, 2000) conducted since research began on online journalism in the early 1990's show no support for Beaudoin's argument that the Internet increases a viewers learning experience. None of these studies found a positive relationship between access to international information and an increased knowledge level in the targeted topic. How is it that an increased need for international news knowledge through globalization and a path to access this news via the Internet still results in a lack of international news knowledge in American audiences?

The current poor state of international news coverage at US news outlets could be contributing Americans lack of international knowledge. A large majority of Americans rely on U.S. news outlets as their primary international news source (Willnat, Garf, & Brewer, 2000). U.S. news outlets not only produce a limited amount of international news but particularly when it comes to video news packages, international news stories are not produced in a manner that would likely better allow Americans to cognitively process stories in a way that would increase knowledge of international affairs stored in long-term memory. Many international news stories contain video that is emotionally negative depicting threats to political stability, the

aftermath of human violence, and natural disasters. Research has demonstrated that the presence of negative video in a televised news story increases cognitive resources allocated to encoding information into short-term working memory (Lang, Newhagen, & Reeves, 1996). As will be discussed in more detail below, this increase in resources allocated to encoding a story could come at the expense of being able to store information in long-term memory; thereby not increasing one's integrated knowledge network related to the topic. Further, American's pre-existing impoverished knowledge network related to international affairs could make attitudes towards the subjects of international stories less accessible in memory actually decreasing resources allocated to encoding the story. At this point no known research has precisely explored the relationship between existing international affairs knowledge, attitudes towards the topics of international news stories, and cognitive processing of international news stories. This is the focus of this thesis. Although the reported poor state of Americans international knowledge is likely the result of a circular relationship between psychological variables and the state of US news outlets international news coverage, this study looks to provide some level of insight into this complex relationship by focusing on the psychological aspect of this relationship rather than specifically manipulating characteristics of news video to assess their impact. Participants in the study were given a set of both arousing and negative international news stories. Participants were then tested on their international affairs knowledge and attitude accessibility toward the topics of international news stories prior to viewing the set of news videos. After viewing the videos, participants were given a recognition and recall test in order to assess how well the news stories were encoded and stored in their memory.

Cognitive Causes for Impoverished International Knowledge in America

A major assumption being made in this study, is that Americans have an impoverished knowledge network related to international affairs and that this impacts cognitive processing of international news video. It is therefore important to explore possible cognitive causes for this impoverished knowledge network and how it might influence the way Americans process international news. Shoemaker (1996) found that humans pay attention to threatening news because through evolution it has proved advantageous to do so. U.S. news outlets by nature usually cover threatening or aversive international news stories over positive ones. This would lead us to believe that U.S. citizens are more likely to see negative foreign news stories than they are to see positive foreign news stories. There are also cognitive processes, primarily attitude accessibility that complement Shoemaker's theory, leading to a decrease in processing resources for international news.

Prior sections of this literature review suggest that Americans have an impoverished knowledge network when it comes to international news knowledge. If this is true the phenomena could lead to an exacerbated decrease in learning capability and allocation in cognitive resources to international news because of low levels of attitude accessibility toward the subjects of international news (Roskos-Ewoldsen, Ralstin, & St. Pierre, 2002). More generally this research suggests the extent to which an individual has a base of information impacts the accessibility of their attitudes, which in turn, influences how they process a news story.

Other factors that limit cognitive resources in regards to international knowledge include the distance of the threat (culturally and geographically) to U.S. audiences

and desensitization to international news because of the negative, deviant nature of most ‘newsworthy’ international news stories. However this research will focus primarily on pre-existing information stored in long-term memory and attitude accessibility.

Attitude Accessibility. Attitude accessibility refers to the ease of activating an attitude from memory (Fazio, 1992). Roskos-Ewoldsen measures accessibility by how long it takes someone to evaluate an attitude (Roskos-Ewoldsen et al., 2002). Roskos-Ewoldsen writes people are more likely to orient their attention to an object if they already have an accessible attitude toward that object (Roskos-Ewoldsen & Fazio, 1992).

Once an ‘accessible attitude’ is developed the attitude influences how attention is allocated, how information is interpreted, how extensively people process information and how people act based on this information (Roskos-Ewoldsen et al, 2002). This theory is the basis for the assumption that for Americans, how accessible their attitude is about an international news event, foreign issue, a country and its people will play a part in how the individuals decide to allocate future cognitive resources to news stories covering that international topic, country or people. Attitude accessibility helps people decide how important an input is.

Roskos-Ewoldsen says accessible attitudes motivate critical processing of information so it is fair to hypothesize that if Americans don’t have accessible attitudes about international news events this will reduce critical processing of information (Roskos-Ewoldsen et al., 2002). Roskos-Ewoldsen claims that accessible attitudes will bias information processing, because humans will actively seek out

particular attitudes that maintain the standard of their current attitude accessibility. In other words if attitudes are not accessible it is very difficult to then change that attitude to become accessible - the system is homeostatic.

It is important to clarify the conceptualization of attitude as simply another piece of information concerning an object stored in long-term memory. Roskos-Ewoldsen would say the more pieces of information concerning an object a person has, the higher their attitude accessibility. Attitudes also vary in terms of strength which Fazio, Sanbonmatsu, Powell and Kardes (1986) refer to as the 'attitude-nonattitude continuum' where if an attitude lies at the 'nonattitude' end of the scale no attitude exists for the participant to draw from in memory, while at the attitude end the participant has attitudinal evaluations "strongly associated with the attitude object" and this end of the scale is often "activated automatically from memory upon mere observation" (Fazio et al., 1986).

Roskos-Ewoldsen's concept should provide support that the U.S. education system needs to put more of a focus on geography if they wish to create accessible attitudes that students can build upon in their future. Salter's (1991) research found young American's do not have a foundation in international knowledge that they can use as a base to build an understanding of other cultures and countries upon. It would seem Salter is concluding students have an impoverished international knowledge network. Based off Roskos-Ewoldsen's research if Americans have an impoverished knowledge network regarding international news they will not have accessible attitudes about international news events or issues. This is the first assumption necessary to test in this study and leads to the following hypothesis:

H1: There will be a significant positive relationship between the amount of information stored in long-term memory about international affairs covered in the news and the accessibility of attitudes toward international news stories.

It is important to note that in Roskos-Ewoldsen's research high threat and fear-inducing messages negatively affect accessibility of attitudes from memory (Roskos-Ewoldsen, Yu, & Rhodes, 2004). Although Roskos-Ewoldsen's research focussed on fear appeal messages concerning breast cancer, international news stories are often negative and there is a pattern of fear-provoking news (Galtung & Ruge, 1965). Roskos-Ewoldsen's (2004) research found the decrease in the accessibility of the attitude toward the threat might push people to "subsequent avoidance or disparagement of information relevant to the threat" (p. 65). In this situation Roskos-Ewoldsen finds that the attention-orienting function of accessible attitudes is void. In this research this finding would argue that if an international news story is highly threatening or fear-inducing U.S. audiences will not orient towards it regardless of their accessibility to the message.

This would also mean that U.S. audiences respond to fear-arousing international news stories by burying the message presumably resulting in low attitude accessibility. Based on the homeostatic nature of attitude accessibility this could allow us to make the assumption that future international news stories therefore receive less cognitive resources because of the original message's poor accessibility.

This theory of cognitive allocation, based on level of fear and threat, indicates a possible reason for low international knowledge in U.S. audiences. It is important to note that this study will not push viewers into this form of extreme defensive processing by avoiding extremely negative, graphic video such as networks like Al

Jazeera Arabic air. For further insight into cognitive processing of international news, that is still somewhat negative and threatening, one can turn to theorizing done by Pamela Shoemaker and Annie Lang.

Shoemaker (1996) discovered that humans are “hardwired” to process news, especially news threatening in nature. According to this theory, humans evaluate threatening changes in the environment (not necessarily immediate) before they assess other messages, in an effort to determine if something is a source of danger before deciding how to respond. “Journalists fulfil people’s innate desire to detect threats in the environment, whether real or potential” (Shoemaker, 1996, p. 32).

Shoemaker argues that humans are inclined to pay attention to danger for their own survival (as supported by Darwin’s theory of natural selection) as doing so has proven advantageous over time. In an increasingly interconnected world this means Americans have a daunting task of keeping abreast of dangers no longer just in their physical backyard, but their virtual one. Wise (2008) writes humans who were aware of danger, through knowledge of their environment, were more likely to reproduce, which created surveillance behaviour through evolution. Wise (2008) found confirmation of Shoemaker’s (1996) theory on hardwired for news that negative news does get people’s attention.

Shoemaker’s theory is especially applicable in this literature review because U.S. news outlets have a tendency to cover bad news in foreign countries far more often than they cover good news. In a 2005 study, the Pew Research Centre analysed over 7,000 international news stories and concluded “the U.S. media carry few international articles that would broaden and educated Americans about the world beyond those hot spots where “breaking” news, usually about conflict, is occurring”

(Kohut, 1995). The study discovered that stories prompted by conflict were the most common type of story to be reported accounting for nearly 50% of broadcast stories and 35% of print. This highlights the way U.S. news outlets predominantly cover threatening, negative (aversive) news.

Hardwired for news establishes that U.S. audiences are “hardwired” to pay attention to international news because it is usually aversive (threatening) in nature.

This research does not argue that threatening news increases knowledge on a topic just that it elicits more attention than good news (Grabe & Kamhawi, 2006). Negative news stories attract more attention and longer reading times than positive ones (Zillmann, Lei, Knobloch, & Callison, 2004). Van Dijk (1998) adds that media outlets make assignment decisions to run more negative international news than positive because people are indeed interested in negative news.

Shoemaker argues that in order to protect themselves humans are always surveying their environment for danger and that senses heighten cognitive processing of stimuli if it is threatening. When the senses categorize input as threatening, unusual or deviant this will automatically elicit attention. Based upon Shoemaker’s research it is fair to say that a person’s attention is automatically oriented in some way to threatening international news.

Yet when it comes to Americans and international news there is still a disjoint between attention paid to a message and the resulting level of knowledge from that message. Lang’s Limited Capacity Model of Motivated Mediated Message Processing (2006) is used in an attempt to resolve this confusion.

Lang's Limited Capacity Model of Motivated Mediated Message Processing

The most accurate way to resolve the confusion as to U.S. audience's attention to, and resulting knowledge of international news, can be done by Lang's Limited Capacity Model of Motivated Mediated Message Processing (2006).

Evaluation of the hardwired for news hypothesis requires psychophysiological responses to stimuli (Wise, 2008). Lang as a psychophysiologicalist assumes in her research that thinking, feeling, awareness and consciousness are processes managed by the brain, which is physiologically connected to measurable organs and bodily systems, therefore operationalizing cognitive processes like attention.

Previous research has used Lang's (2006) LC4MP model to evaluate cognitive resources allocated to stimuli. Lang's research enables us to measure the level of attention a participant is paying to an aversive news story and the subsequent cognitive resources being allocated to store and retrieve that information through measuring physiological responses (Lang, 2000).

This model (Lang, 2000) relies on some central assumptions. The first assumption is that cognitive resources are finite - audiences allocate cognitive resources from a "limited pool of processing resources to the cognitive processes required for viewers to make sense of a message" (Lang, Borse, Wise & David, 2002, p. 216).

Another assumption by Lang is that processing a message uses three cognitive subprocesses: encoding, storage and retrieval. To translate these three terms it is fair to say, U.S. audiences only have a limited cognitive framework to allocate on the tasks of "perceiving, encoding, understanding, and remembering the world they live in" (Lang, 2006). It is important to note that these subprocesses are happening "constantly, continuously, and simultaneously" (Lang, 2006).

Shoemaker's (1996) hardwired for news hypothesis says that humans are destined to pay attention to threatening international news, which in Lang's words would mean humans are destined to encode threatening news. Attention is conceptualized as the allocation of cognitive resources to encoding a message and is usually signified by a deceleration of heart rate (Lang, 2006). However according to prior research low attitude accessibility (as hypothesized for international news) should counteract the orienting function of Shoemaker's theory in international news (Wood, Rhodes, & Bick, 1995; Krosnick, 1989; Roesch & Olson 1994; Bizer & Krosnick, 2001; Clark, Wegener, & Fabrigar, 2006). In order to understand where cognitive resources are being allocated Lang's idea of motivational systems must be understood.

Lang (2005) theorizes that the level of activation in motivational systems (appetitive or aversive) impacts how resources are allocated to encoding, storing or retrieving a stimulus. International news should activate the aversive motivational system because of its negative, threatening nature. As a backbone of the hardwired for news theory (Shoemaker, 1996) the aversive motivation system activates quicker and at lower levels of activation, in an attempt to protect a person from danger (Lang, 2006). The goal here is protection, which means persons have a tendency to pay attention to aversive stimuli (such as threatening international news messages) but this means cognitive sacrifices are also necessary. Knowing that a human's cognitive resources are finite it is not possible for U.S. audiences to encode, store and retrieve all information presented in a message; the viewer (consciously or unconsciously) must choose how to allocate their cognitive resources. The viewer will select which portions of information they want to encode, process or store (Lang et al., 2002). This point aligns with this research as it suggests limited cognitive resources result in a

reliance on previously mentioned theories (knowledge networks, hardwired for news and attitude accessibility) to determine where and how those resources are allocated.

Here it is important to note that attention is a necessary but not sufficient condition for storing information in long-term memory in order to build up knowledge. Attention is conceptualized as encoding in LC4MP and although a critical stage of the process it does not result in storage and retrieval (long term memory) until further cognitive resources are allocated to processing the message. Encoding only requires limited cognitive resources. Usually stimuli that people have learned is important, motivationally relevant and is new to the environment elicits orienting, meaning these type of stimuli are automatically encoded. “It is the process of selecting information from the environment for further processing” (Lang, 2006).

So which process results in the allocation of cognitive resources to assist a U.S. audience that has a high level of international knowledge? Lang (2006) says if the goal of a message is increased knowledge the message must also be well stored.

Lang (2006) created questions that should be answered in order to create an effective message. The fourth question she developed asks, “What is the motivational and personal relevance of the primary information in the message?” (Lang, 2006, p. 63). Lang’s question provides a tie to knowledge network, hardwired for news and attitude accessibility theories - theories that examine the motivational and personal relevance of the primary information. The subprocesses of storage and retrieval look at which of these will produce the highest knowledge gain as humans work to keep information for future use.

For a high level of storage to occur new information needs to be encoded at the same time that old information is being retrieved from long-term memory. This

phenomena results in storage as the new information is linked to the old (Baddeley, 1990; Bradley, 1994; Christianson, 1992; Zechmeister & Nyberg, 1982; Lang, 2006).

Attitudes can be conceptualized as simply a piece of information concerning an object stored in long-term memory and accessibility is simply how quickly those pieces of information can be retrieved in Lang's retrieval process (Fazio, 1995; Fazio, 2007). This provides a basis for the hypothesis that suggests attitude accessibility affects knowledge stored in long-term memory. If attitudes are simply pieces of information in long-term memory then for new information to be stored those attitudes will be retrieved at the same time as participants are encoding the new stimuli providing a link for the stimuli to bond to in long-term memory.

Along with pre-existing information in long-term memory how well information is stored is also affected by the amount of cognitive resources available. If few resources are allocated to storage because more resources are being allocated to encoding, then this will result in messages being encoded but poorly stored, if at all (Lang, 2006; A. Lang, Bolls, Potter & Kawahara, 1999). Based on evidence of low international news knowledge it would appear U.S. audiences do not allocate enough cognitive resources and are not stimulated enough to break through the storage threshold (that would occur with a higher aversive activation level) in order to increase their knowledge.

Wise found a similar phenomenon when researching activation of the aversive motivational system establishing that "increasing the proximity of the threat should further activate the aversive system, leading to a further increase in resources automatically allocated to encoding and storage" (Wise, 2008, p. 10). This would lend support to attitude accessibility and hardwired for news theories because according to

Wise (2008) a threatening international new story would activate the aversive system and proximity relates to attitude accessibility, as is presumed in hypothesis one. It is assumed U.S. audiences would have more accessible attitudes about places or people geographically or culturally “close to home”. In addition to the indicators of storage, personal relevance encourages storage. “LC4MP argues that motivational relevance leads to the automatic allocation of resources to storage” (Lang, 2006). If attitude accessibility for international events is weak then naturally personal relevance will be weak also. This phenomenon could work as a detriment to Americans increasing their knowledge networks on international topics.

The last subprocess to be examined is retrieval, the process of retrieving information or attitudes from long-term memory. This process is critical to explaining how attitude accessibility affects the allocation of cognitive resources and storage of new information. To understand it one can think of memory as ‘clouds of information’ that are linked to each another. This is whether knowledge networks matter, as the larger and more comprehensive the knowledge network the larger the cloud of information and the more connections a person can make with new information to store in long-term memory. This also applies for attitudes. Knowing that attitudes are just another piece of information making up the cloud of information that represents memory for a topic, when new information is encoded, related ‘information clouds’ are activated and retrieved to tie to the newly encoded information so that it can be stored in a related ‘information cloud’ (Lang, 2006). This is illustrated in **DIAGRAM 1**. This phenomenon is pertinent to attitude accessibility as it highlights how attitudes, which vary in accessibility, might become more or less active by exposure to an international news story, and impact encoding of the story.

Because these attitudes help signify the importance of information, attitudes also help the brain decide whether to retrieve and store new information. New work by David Roskos Ewoldsen and colleagues suggest that there may be a direct relationship between attitude accessibility and encoding of a media message (Roskos Ewoldsen, Bichsel, & Hoffman, 2002; Roskos Ewoldsen, Yu & Rhodes, 2004). This proposition will be directly tested in this study in the context of international news. The extent to which a media message is encoded into short-term memory can be assessed through recognition memory tests (Lang, 2006). This leads to a second hypothesis to be tested in this study:

H2: There will be a significant positive relationship between the accessibility of attitudes toward the subjects of international news stories and recognition of international news videos covering those subjects.

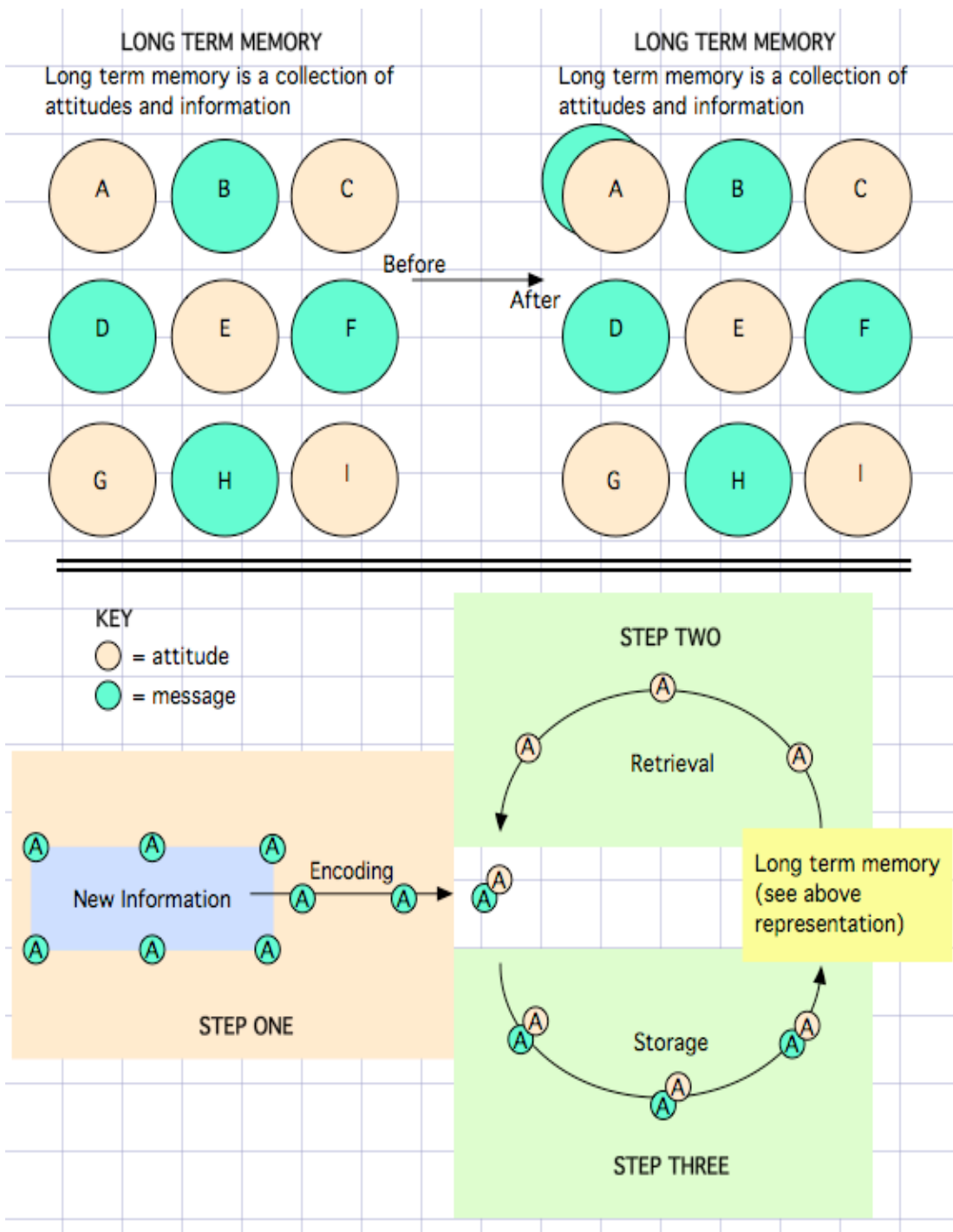
According to Lang, storing information from a media message in long-term memory is facilitated by the process of retrieving existing information from memory and linking the new information from the media message to retrieved old information with the result of forming a richer knowledge network in long-term memory (Lang, 2006). This is explained in **DIAGRAM 2**. This theoretical proposition about how individuals can learn from exposure to media messages, like international news stories, lays out a direct relationship between existing information stored in long-term memory (an integrated knowledge network) and storage of new information in long-term memory. The proposed study will also directly test this proposition for international news videos. Cued recall memory tests have been recognized as a way to assess how well information in the media message is stored in long-term memory (Lang, 2006). These theories lead to third and fourth hypotheses:

H3: There will be a significant positive relationship between pre-existing information stored in long-term memory about international affairs covered in the news and correct cued recall of the details presented in international news videos covering such events.

Hypothesis one suggested pre-existing knowledge would predict attitude accessibility. Therefore if pre-existing knowledge predicts storage in hypothesis three, attitude accessibility may also predict storage as described in hypothesis four.

H4: There will be a significant positive relationship between attitude accessibility about international affairs and correct cued recall of the details presented in international news videos covering such events.

DIAGRAM 2 *How New Information is Stored in Long Term Memory*



3. METHODOLOGY

Design

This study is designed to test the relationship between pre-existing knowledge of international affairs, accessibility of attitudes toward international news stories, encoding of information from international news videos, and storage of details from international news videos in long-term memory. For hypothesis one, pre-existing knowledge is the predictor variable and attitude accessibility is the dependent variable. For hypothesis two, attitude accessibility is the predictor variable and encoding is the dependent variable. For hypothesis three, pre-existing knowledge is once again the predictor variable and correct storage is the dependent variable. Hypothesis three will be analysed two ways – the first as described and secondly with pre-existing knowledge as the predictor variable and accuracy of storage as the dependent variable. For hypothesis four, attitude accessibility is the predictor variable and correct storage is the dependent variable. The following paragraphs provide more details on each of these variables.

Variables

Pre-existing knowledge. Pre-existing knowledge of international affairs is conceptualized as the level of detail a person has stored in long-term memory regarding specific international issues or events. As discussed previously, this information is stored in an integrated knowledge network. For the purposes of this study pre-existing knowledge was measured by having participants complete an open-

ended cued recall test over recent international events that have been covered by the news media. Cued recall memory tests have been recognized as the best way to assess what information is stored in long-term memory, also known as pre-existing knowledge (Lang, 2006). Participants were given a full page on the computer to complete their description with no time limit. They were given a cue that prompted them to recall a specific international event and were then asked to describe everything they can remember about the event. Cued recall tests questioned the participant's pre-existing knowledge on countries related to the four international news stories that participants viewed later in the study. Coverage of these stories had been readily available on broadcast outlets within weeks of the experiment. Two other dummy countries (Ethiopia and France) were included so not to prime participants for the videos and questions later in the study.

The decision to test pre-existing international knowledge through an open-ended cued recall test was based on prior research (Lang, 2006; Beaudoin, 2008; Kosicki & McLeod, 1990). These researchers discovered that open-ended questions were imperative because international knowledge is so complicated and contextual “a reliance on close-ended, fact-oriented measurement is a limited means to examining what people know” (Beaudoin, 2008; Kosicki & McLeod, 1990). The benefit to close, fixed-choice questions is that researchers received a standardized response and do not need to exert as much time into coding responses once the experience is complete (Kalton & Schuman, 1982). Kalton and Schuman (1982) write that in cued recall situations open-ended questions are preferable over close-ended questions as close-ended questions can influence responses and may not be appropriate for a respondent. The primary researcher enlisted a Missouri School of Journalism doctoral candidate

with experience in coding participant responses to recode 10 percent of the data in order to get a calculation for coding accuracy with an intercoder reliability score (see **TABLE 2**). This showed variance in coding of open-ended pre-existing knowledge responses was minimal with a high intercoder reliability.

Beaudoin (2008) studied general country knowledge of China and England so offered just two different cued recall questions on both locations. In this research because the focus is knowledge of international news events/issues rather than a specific country the author focused the cued recall tests on the locations of recent news events from a selected group of foreign countries relevant to stories participants saw later in the experiment. Because the scope of this study is much larger than Beaudoin's (2008) this research also doubled the number of cued recall questions to four from Beaudoin's two. The four international videos chosen later in the study were based on geographic and cultural diversity and hence pre-existing knowledge. Cued recall questions were based on the locations of these stories. The countries chosen were China, Iran, Russia and Honduras, with two extra dummy questions regarding France and Ethiopia to as not to prime participants for later questionnaires.

For example, participants were given a cue to recall any details they could remember about the country of China. The questionnaire asked participants, "Please describe in detail everything you know about the country of China e.g. current events, people, places, objects or issues."

The order in which cued recall was tested for each geographic location was randomized for each participant. This cued recall data was then coded for the number of details --- people, places, objects, actions, and other factual statements --- mentioned in cued recall responses. The number of details mentioned was entered as a

score reflecting participants' pre-existing knowledge about the countries participants would later view news stories on.

Attitude Accessibility. In this study, attitudes are conceptualized as a specific form of information stored in an integrated knowledge network in long-term memory. Attitude accessibility is conceptualized as the ease with which a held attitude can be retrieved from memory (Fazio, 1992; Roskos-Ewoldsen et al., 2002). The accessibility of attitudes toward people and places associated with the specific international countries (China, Iran, Honduras and Russia) covered in the cued recall test was measured. Participants were presented with an attitude object in the form of a specific person, object or place related to those countries followed by the adjectives – good or bad. In total 45 attitude objects were presented – five practice images then 20 images representative of the countries for which participants viewed news stories on and 20 filler images. The researchers had Medialab randomly order the presentation of the 40 true and filler images. Each focus country (China, Iran, Honduras and Ingushetia) had five images presented. The attitude object was presented for 1,500 ms following Rosko-Ewoldsen's previous research on attitude accessibility (Roskos-Ewoldsen & Fazio, 1992). Roskos-Ewoldsen and Fazio (1992) determined 1,500 ms reduced any risk of ceiling or floor effects. Participants were instructed to indicate as quickly as possible which adjective accurately describes the attitude object. Some examples of the images participants saw were a picture of Iranian President Mahmoud Ahmadinejad, a map of Honduras, a flag of Ingushetia, a picture of the aftermath of a bombing in Ingushetia, the Chinese Premier Wen Jiabao and Honduran protestors. All images from these countries had symbols or imagery obviously affiliated with the country ie. The Chinese Premier stood in front of a Chinese flag and the Honduras

protestors carried signs written in Spanish that indicated they were in Honduras. Examples of filler images included a beach, a U.S. air force drone, a happy family and a profile of Israeli Prime Minister Benjamin Netanyahu. The reader will notice that the attitude objects are a mix of images with positive and negative connotations including images not related to threatening news stories (beach, friends) intermingled with those from international news stories (soldiers, Ahmadinejad).

Participants responded using the shift keys on a computer keyboard with one shift key indicating a good response and the other indicating a bad response. Participants were instructed to keep their index finger on each hand over each of the shift keys during the entire measure. Participants were also given five practice trials prior to completing the actual attitude accessibility measure in order to allow them to better map each shift key to whether it is a good or bad response. Attitude accessibility data was coded as response latency in milliseconds.

Encoding of Details in International News Video. Encoding is conceptualized as the cognitive process of placing information from one's perceptual environment into short-term working memory. Encoding of details contained in international news video stories were measured through a recognition test. The recognition test was a forced choice recognition test. For the test, participants were shown eight statements about story details for each of the news video stories viewed during the study. Participants were instructed to indicate as quickly as possible whether the statement was true or false. Four of the statements for each story were true and four were false. This means there are 32 statements in total, half of which were foils and half of which were seen in the video. Participants were given the following instructions precluding the questionnaire: "You watched four videos produced by Newsy.com earlier in this

experiment. Now you will be asked if the following statements, that appeared in the videos are true or false. You will only be given six seconds to choose true or false.”

The following were the true statements presented regarding the Iranian elections:

- a. Iran’s Supreme Leader told Ahmadinejad to dismiss his Vice Presidential pick.
- b. The name of Iran’s Supreme Leader is Ayotallah Ali Khamenei
- c. Ahmadinejad made just one reference to Khamenei in his acceptance speech.
- d. Iran had street protests and much unrest after their elections this year.

While also including the following four incorrect statements:

- e. Mahmoud Ahmadinejad title is Iranian Prime Minister.
- f. Ahmadinejad has two months to form his cabinet in the Iranian government.
- g. Mahmoud Ahmadinejad is in his first term in office in Iran.
- h. Iran’s capital is Shiraz.

All of the true/false statements for the four stories were programmed so that MediaLab randomized their presentation. Recognition accuracy scores were calculated as either a ‘1’ for correct or ‘0’ for false and total scores were calculated to determine the number of statements recognized correctly. For example if a participant marked 6 out of the 8 statements correctly (true statements true and false statements false) their recognition would be score 6 points.

This method was chosen to test recognition because it has been commonly used amongst other researchers to gauge recognition and hence encoding. Lang, Byungho, Sander-Jackson, Wilson and Wang (2007) used a forced choice recognition test to measure encoding after participants watched television messages. The researchers took three sentences from each video to use as true recognition statements and

changed words within those three sentences to create three new sentences to be used as foils. Corrigan and Nelson (1998) used 288 true-false items to see if participants could differentiate between real and false cues after watching eight vignettes.

Storage of Details in International News Video. Storage is conceptualized as a cognitive process that involves linking information that has been encoded into short-term working memory with information already stored in long-term memory. Storage of details in international news video were measured in this study by administering an open-ended cued recall test to participants. An open-ended cued recall test was chosen for the same reasons as mentioned for the pre-existing knowledge portion of the experiment. Previous researchers used open-ended cued recall questions for measuring storage because unlike close-ended questions they do not limit the ability of the researcher to find out how much somebody can remember on a given topic (Lang, 2006; Beaudoin, 2008; Kosicki & McLeod, 1990). Kalton and Schuman (1982) write that in cued recall situations open-ended questions are preferable over close-ended questions as close-ended questions can influence responses and may not be appropriate for a respondent. The possible disadvantage to an open-ended cued recall test is variance in responses. The researcher worked to minimize the error rate from not having a standardized test by enlisting a Missouri School of Journalism doctoral candidate to recode 10 percent of responses. The intercoder reliability rate for correct storage was high. A detailed list of intercoder reliability scores can be found in **TABLE 2**.

Participants were cued with a brief sentence stating the general topic of each story they viewed during this study and then asked to describe everything they could remember from that story. They were given a full page on the computer to complete

their description with no time limit. For example for the story regarding Iran's 2009 election a brief sentence to cue the participant was: "You watched a story about the Iranian election please describe in detail everything you remember from that video e.g. current events, people, places, objects or issues. Please only write everything you can remember from this video as opposed to previous news coverage."

The order in which cued recall was tested for each story was randomized for each participant. The cued recall data was coded for the correct recall of details --- people, places, objects, actions, and specific factual statements --- presented in each story. The number of correct details mentioned in the cued recall responses was entered as the participants' cued recall score for each story. The number of total details (including correct and incorrect) mentioned in the cued recall responses was also calculated as a total score for each story.

International News Videos

International news videos used in this study were obtained from a professional online news source that specializes in aggregating and presenting international news. This online news source streams news video from international news sources and is a relatively new enterprise as of the time of this thesis. The videos used in this study are on topics that have been in the news media within weeks of the experiment. The four stories chosen examine Iran's 2009 elections, the coup in Honduras, a suicide bombing in Ingushetia, Russia and riots in China. Therefore, there is a decreased likelihood that participants in this study had previously viewed the stories. The four stories chosen were tested during the experiment to certify they are all equally negatively arousing.

Participants and Procedure

Participants were 127 adults over the age of 18 recruited from a Midwestern university. An attempt was made to obtain approximately equal numbers of male and female participants. Informed verbal consent was obtained from each participant prior to completing the study. Upon arrival at the laboratory, participants were greeted and read the informed consent form. Participants were then told they can ask the researcher at any time if they have questions. All data collection was controlled by the software program MediaLab and Direct RT by Empirisoft. The researcher started the software program for each participant. All instructions, measures, and stories were presented within MediaLab and Direct RT. Participants first completed the cued recall test that measured pre-existing knowledge of international events. They then completed the attitude accessibility measure. After the accessibility measure, participants viewed the four international news videos. In between each video participants were asked to score the video for arousal and valence. Participants were then presented with a brief segment of NBC's Saturday Night Live in order to clear out the contents of short-term memory prior to the recognition test. After this distracter video, participants were given the recognition test. Participants then watched another brief distracter video consisting of a different segment of NBC's Saturday Night Live followed by a cued recall test examining storage of the international news videos. After completing this last cued recall test, participants were thanked, debriefed, and dismissed.

4. RESULTS

Data analysis

The experiment drew 128 participants, but nine participants were removed as outliers or because their results were confounded leaving 116 total participants from which to draw results. Results from these participants were analysed using linear regression to determine how pre-existing knowledge and attitude accessibility impact the cognitive processing of international broadcast news stories. Hypotheses involving attitude accessibility predict positive relationships, however, it is important to note that because operationally attitude accessibility is measured by reaction time, a statistically negative relationship is necessary to support these hypotheses.

Arousal and Valence

The four international news videos participants watched were rated on a level of unpleasantness, pleasantness and arousal. These levels were determined through self-report on 9-point Likert scales. The unpleasant scale asked participants to “indicate how UNPLEASANT” they believed the story they just viewed was. The scale ranged from 1 = “Not at all UNPLEASANT” to 9 = “Extremely UNPLEASANT.” Another scale gauging pleasantness ranged from 1 = “Not at all PLEASANT” to 9 = “Extremely PLEASANT.” The arousal scale asked participants to “indicate how CALM/RELAXED or EXCITED/ANXIOUS” they felt while viewing this story. The scale ranged from 1 = “CALM/RELAXED” to 9 = “EXCITED/ANXIOUS.”

Responses were then averaged for each topic. The means for the four videos did not indicate a significant relationship between the levels of arousal and valence. The arousal means suggested China was significantly more arousing than the three other stories and Iran was significantly less arousing than the three other stories. The same pattern of results occurs with the valence measure (pleasant/unpleasant). These results can be seen in more detail in **TABLE 1**. The participants did not find any of the video highly unpleasant or arousing. Participants rated the stories on Honduras and Ingushetia as not significantly different in arousal and valence. The researcher would have preferred to have a significantly related high level of negativity and arousal on all four stories but notes it is important to have diversity in international stories (war, politics, riots etc.) as important. The researcher wanted the four videos viewed to correspond with what a participant could view if they were to watch international news on any given day.

TABLE 1 *Self-Report Valence and Arousal Means*

Story	Mean	Standard Deviation
	Arousal	
China	5.777	.175
Honduras	4.313	.185
Ingushetia	4.643	.186
Iran	3.598	.172
	Valence	
China	7.080	.167
Honduras	5.295	.177
Ingushetia	6.045	.183
Iran	4.223	.169

Note. The mean score here reflects an arousal and valence scale of one being low arousal and valence and nine being high arousal and valence.

Cognitive Processing

The independent variable of pre-existing knowledge was tested through cued recall tests on six countries at the beginning of the experiment. Two countries were dummy questions so the cued recall scores were calculated for the four remaining countries (China, Honduras, Iran and Russia). Based on these scores four participants were considered to be outliers. 97% of participants scored between 4 points and 88 points across all four cued recall questions. However the four outliers scored 104, 121, 148 and 162 points. The resulting means for pre-existing knowledge can be viewed in **TABLE 2**.

TABLE 2 Means for Pre-existing Knowledge Scores

Topic	Mean Score	Standard Deviation
China	8.92	5.092
Iran	7.33	5.494
Honduras	2.78	3.007
Russia	6.76	5.764

Intercoder reliability was also calculated for pre-existing knowledge using Krippendorff's alpha reliability estimate for judgments. These scores are listed in **TABLE 3**. Krippendorff's alpha reliability estimate was calculated off 10 percent of the pre-existing cued recall scores and 10 percent of the storage cued recall scores. Krippendorff's alpha reliability scores for cued recall of storage are listed in **TABLE 4**. The primary researcher and a doctoral candidate from the Missouri School of Journalism coded the data.

TABLE 3 Krippendorff's Alpha Reliability Estimates for Pre-existing Knowledge Cued Recall Responses

Topic	Pre-Existing Knowledge
China	.9830
Iran	.9908
Honduras	.9929
Russia	.9910
Total	.9930

TABLE 4 *Krippendorff's Alpha Reliability Estimates for Storage Cued Recall Responses*

Topic	Storage	
	Correct	Incorrect
China	.9663	.6636
Iran	.9708	.9797
Honduras	.7202	-.0926
Russia	.9261	.6862
Total	.8918	.2299

Another predictor variable was attitude accessibility, measured by reaction times to a variety of images related to the countries mentioned in the cued recall test. The means for these reaction times can be viewed in **TABLE 5**. This variable was also screened for outliers prior to running further statistical tests. After looking at frequencies for reaction times, times above 4,000ms were discarded as outliers. Times before 200ms were also discarded because they were perceived as “jumping the gun”. Stone and Valentine (2004) studied reaction times and labelled any times below 200ms as probable anticipations. Therefore five participants were deemed outliers for reaction times below 200ms and above 4,000ms. The researcher considered including a scatter graph of reaction times but after examining the graph found it would not provide any new information as eliminating the outliers brought reaction times into a single distribution.

TABLE 5 Means for Attitude Accessibility Reaction Times

Topic	Mean Reaction Time	Standard Deviation
China	853.39	317.23
Iran	907.67	374.55
Honduras	984.46	417.70
Russia	974.44	430.66

As is mentioned later in **LIMITATIONS**, data from two other participants was removed because they were non-English speakers and for a third the software would not run properly. With outliers and the above three participants removed, total participants went from 128 down to 116.

Hypothesis one examined whether there is a significant positive relationship between the amount of information stored in long-term memory about international affairs covered in the news (pre-existing knowledge) and the accessibility of attitudes toward those international affairs covered in the news. To calculate the relationship between pre-existing knowledge and attitude accessibility the author ran a simple linear regression. A significant relationship was found where pre-existing knowledge predicted reaction times ($F(1, 114)=11.795, p < .001$), with an R^2 of .094. The relationship, however, was statistically positive which fails to support the hypothesis that higher levels of pre-existing knowledge will lead to more accessible attitudes. A possible explanation for why those with higher pre-existing knowledge had slower attitude accessibility was that those who knew more were more conscientious in their decision and wanted to think through all the possible knowledge they had on the

subject before asserting a ‘good’ or ‘bad’ attitude toward the image. Because these participants had more knowledge it may have taken them longer to assert a decision, resulting in lower attitude accessibility.

Recognition statements were used to test encoding through true/false questions on the international videos participants had watched previously in the experiment. The mean scores for the recognition test can be viewed in **TABLE 6**. Hypothesis two examined whether there is a significant positive relationship between the accessibility of attitudes toward the subjects of international news stories and recognition of international news videos covering those subjects. A simple linear regression was calculated predicting participants’ recognition score based on attitude accessibility. The regression equation was not significant ($p > .113$). Attitude accessibility is not a significant predictor of recognition. This result was surprising because previous researchers have demonstrated that the presence of negative video in a televised news story increases cognitive resources allocated to encoding information in the story into short-term working memory (Lang, Newhagen, & Reeves, 1996). There is a possibility the videos were not aversive or arousing enough for participants to find them truly negative videos as highlighted in **TABLE 1**. However, the researcher believes the recognition test may have deviated too much from Lang, Park, Sanders-Jackson, Wilson and Wang (2007) model recognition test that has been used in similar situations and has been successful in measuring variables correctly. The recognition means ranged from .62 to .67 for the four stories viewed, which were not quite a floor effect and significantly above chance but lower than recognition scores that have been reported in other research on broadcast news. For a more in-depth view of the scores see **TABLE 6**. The data also had little variance. The numbers suggest the recognition questions may have been too difficult and should have been less

specific, more obvious or focused on ideas central to the story. In tests using this method other researchers stuck with three central facts of the story and then changed out obvious words within those three central facts to create foils (Lang et. al., 2007). This experiment deviated from that approach when testing recognition.

TABLE 6 *Mean Scores for Recognition*

Topic	Mean Score	Standard Deviation	Variance
China	.632	.185	.034
Iran	.671	.185	.034
Honduras	.669	.179	0.32
Russia	.622	.211	.044

There is the possibility recognition and attitude accessibility could also be a negative relationship if tested again using a more accurate questionnaire. Roskos Ewoldsen and colleagues suggest that there may be a direct negative relationship between attitude accessibility and encoding of a media message (Roskos Ewoldsen, Bichsel, & Hoffman, 2002; Roskos Ewoldsen, Yu & Rhodes, 2004). Therefore if attitude accessibility is low as it is presumed to be for the majority of Americans, there may also be low encoding of that media regardless of the level negativity characteristic to international stories.

Hypothesis three examined whether there is a significant positive relationship between pre-existing information stored in long-term memory about international affairs covered in the news and cued recall of the details presented in international

news videos covering such events. This was analyzed in two ways. Firstly, researchers looked into whether pre-existing information on international topics predicted *correct* cued recall of the details presented in these international news videos measured storage into long-term memory. The mean scores of participants for correct cued recall are listed in **TABLE 7**. A simple linear regression was calculated predicting participants' correct total storage in long-term memory based on their pre-existing knowledge. A significant regression equation was found ($F(1, 114) = 32.008$, $p < .000$) with an R^2 of .219. Participants' pre-existing knowledge predicted the amount of information they stored in long-term memory.

TABLE 7 Means for Correct Cued Recall (Storage) Scores

Topic	Means Storage	Standard Deviation
China	8.96	5.90
Iran	9.45	6.09
Honduras	9.11	4.86
Russia	5.35	4.37

Note that the dependent variable in hypothesis three was total *correct* storage in long-term memory. The second way of analysing hypothesis three was to examine the dependent variable of long-term storage in terms of how accurate participants were storing new information. Storage was coded for correct and incorrect recall after the researcher noticed a certain level of inaccuracy in a quick survey of cued recall answers for storage. The means for incorrect recall can be viewed in **TABLE 8**.

A new variable was calculated for accuracy that was a proportion of correct and incorrect data points. Further analysis was conducted on that data to determine whether there was a relationship between pre-existing knowledge and recall accuracy. A simple linear regression was calculated predicting participants storage accuracy based on their pre-existing knowledge. A significant regression equation was found ($F(1, 114) = 5.016, p < .027$) with an R^2 of .042.

TABLE 8 Means for Incorrect Cued Recall (Storage) Scores

Topic	Means Storage	Standard Deviation
China	1.03	1.24
Iran	.68	.91
Honduras	1.08	1.41
Russia	1.40	1.86

Hypothesis four examined whether attitude accessibility is a predictor variable for long-term correct storage. A simple linear regression was calculated predicting long-term correct storage based on participants' attitude accessibility. A significant positive regression equation was found ($F(1, 114) = 6.322, p < .013$) with an R^2 of .053. The relationship, however, was statistically positive which fails to support the hypothesis that higher levels of pre-existing knowledge will lead to more accessible attitudes. The relationship that was statistically significant found that higher reaction times correlated with higher pre-existing knowledge, which will positive does not support attitude accessibility as higher attitude accessibility requires shorter reaction

times. A possible explanation for why those with higher pre-existing knowledge had slower attitude accessibility was that those who knew more were more conscientious in their decision and wanted to think through all the possible knowledge they had on the subject before asserting a 'good' or 'bad' attitude toward the image. It appears participants with slower attitude accessibility may be characteristically more thoughtful and analytical. This increases the probability they will retain larger amounts of information as they did in the cued recall exercise after viewing the international videos.

5. DISCUSSION AND CONCLUSION

Overview

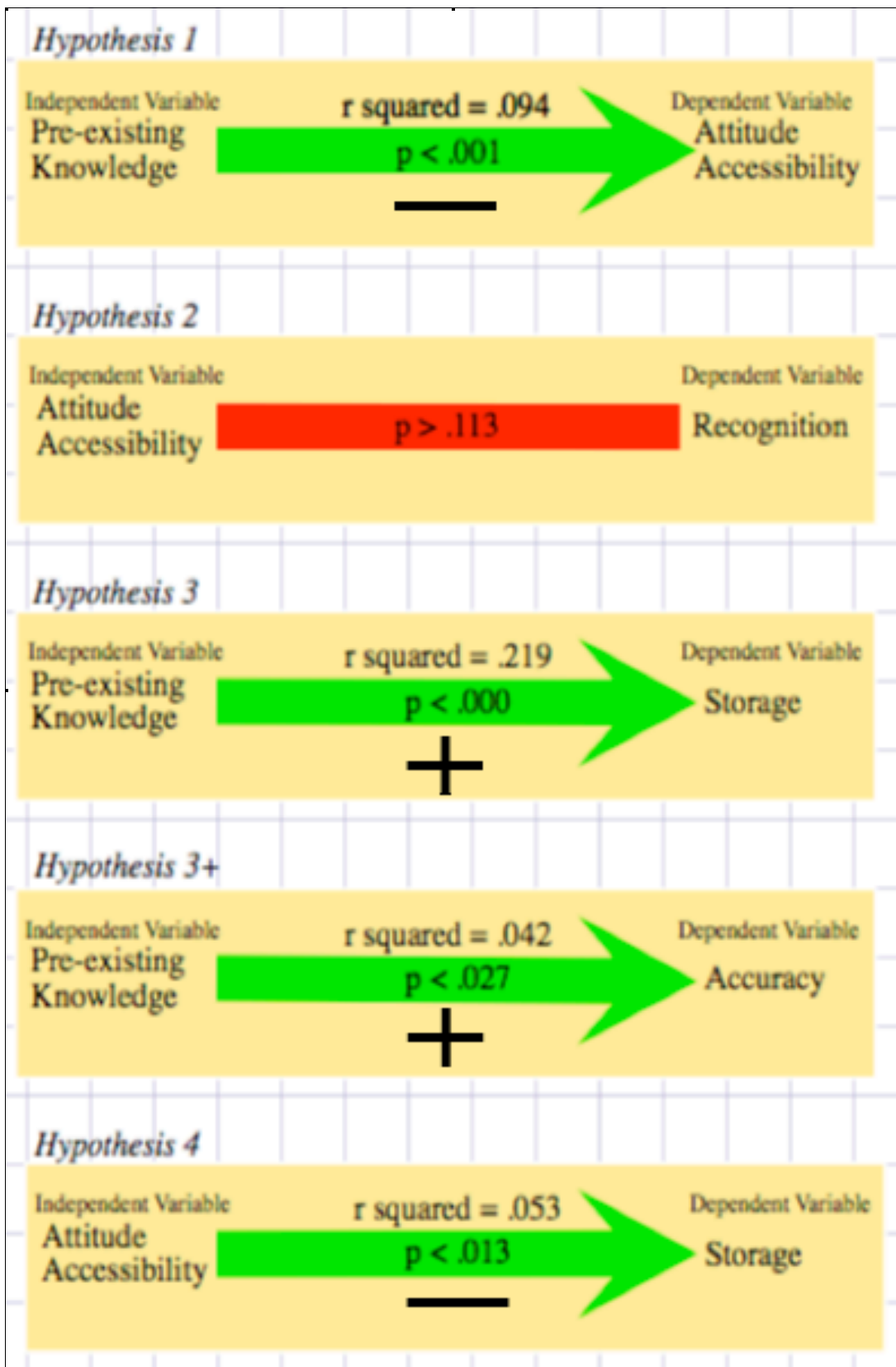
This study's research question was: *how does existing memory and attitudes influence cognitive processing of international news stories?* Based on this data, pre-existing knowledge and attitude accessibility significantly impact cognitive processing. Pre-existing knowledge and attitude accessibility of international news issues, subjects and events have a significant relationship with storage of international news issues, subjects and events. This supports the theory that a person with an impoverished international knowledge network will be less likely to make long-term connections with new information, hindering further growth of their international news knowledge. However this study does not support the theory of attitude accessibility – that if a person has high attitude accessibility they will signify information related to their attitudes as important to allocate more cognitive resources to. In fact the opposite occurred. Those with high attitude accessibility retained significantly less information in long-term memory and had lower pre-existing knowledge than those with low attitude accessibility. Pre-existing knowledge also predicted attitude accessibility, although this was hypothesized as positive and like cued recall was also negative. The only explanation the researcher can find for this is that those who are more conscientious in their decisions and learning wanted to think through all the possible knowledge they had on the subject before asserting a 'good' or 'bad' attitude toward the image. It appears participants with slower attitude

accessibility may be characteristically more thoughtful and analytical, therefore storing more and having higher cued recall scores.

Storage was also coded for correct and incorrect responses. A standard linear regression was run for pre-existing knowledge as a predictor variable and a person's accuracy in storage. In further support of this impoverished knowledge network phenomena participants had a significantly lower level of accuracy in long-term memory when they had lower levels of pre-existing knowledge. However, intercoder reliability for the calculation of accuracy in storage was weak and conclusions drawn from accuracy need to be taken with less confidence, as discussed in

LIMITATIONS.

DIAGRAM 3 *Results of Hypotheses*



Limitations

There were some limitations to this study.

Cued recall storage responses were coded for correct and incorrect responses and an intercoder reliability score was calculated for both. Krippendorff's intercoder reliability score for incorrect storage responses was low when averaged across stories (see **TABLE 4**). The story regarding the coup in Honduras pulled down the average incorrect storage reliability because Honduras was a negative intercoder reliability score. Incorrect storage responses were used for the accuracy measure in order to calculate the dependent variable of accuracy and if pre-existing knowledge could significantly predict it. Therefore conclusions drawn from the accuracy measure are limited. The reader should not have as much confidence with conclusions drawn from accuracy as conclusions drawn from tests using correct storage data. Incorrect storage intercoder reliability may have been lower than other intercoder reliability scores because there was little variance in results. Participants made few incorrect statements. For example, each participant may have only one or two incorrect responses so if the two coders were off by one response the coders now have a 50 percent difference in coding. It may be possible Krippendorff's alpha requires more variance in the data to be validly calculated. This may be why Honduras had a strange negative value for intercoder reliability (see **TABLE 4**).

A confound in this study could be that the storage cued recall question requested participants state everything they could remember from the story about the bombing in Ingushetia. The pre-existing knowledge cued recall question for this story asked participants to recall everything they could about the country of Russia. This raises the possibility that participants could have high attitude accessibility and pre-

existing knowledge for Russia as a country but have very low attitude accessibility and pre-existing knowledge for the Republic of Ingushetia. In the pre-existing knowledge section a small percentage of participants mentioned any of the Russian republics like Chechnya and none mentioned Ingushetia. However, it would be expected participants still attempted to make cognitive connections to the country of Russia from objects, people, places and actions mentioned in the Ingushetia story. There is a possibility this story could have lowered the strength and significance of a relationship between pre-existing knowledge and attitude accessibility and long-term storage.

The initial research on this topic focussed the state of United States national's international news knowledge. All the research compiled on the state of international news knowledge was drawn from domestically focussed research and articles. A limitation of this study was that aliens (non-permanent residents) also partook in the experiment. The primary researcher estimates approximately five participants were not U.S. nationals. Some of these participants could have been from countries that are covered within the experiment i.e. China. Methodologically this should have been addressed initially but researchers did not make a point of collecting that data during the experiment. It is expected the initial measure of pre-existing knowledge would help to control against irregularities the aliens could inject into the results of the experiment. Also this is a study on a human psychological phenomenon so there is no theoretical reason to believe the pattern of results would be any different for those with different nationalities or in different geographic locations around the world. These findings could hold for all humans across the globe.

Two foreign participants were removed, as it was obvious they were not native

English-speakers. This reduced the number of foreign nationals to approximately five persons.

A limitation to this research is that cognitive resources could have been measured more accurately using physiological measures such as heart rate, sweat and secondary task reaction time. LC4MP scholar Annie Lang believes physiological measures are the best way to accurately determine how a person is allocating cognitive resources. If the researcher had included physiological measures processes, the study would have been able to determine how well the participant was encoding, storing and retrieval any of the stories viewed. There were factors in this study such as how fearful somebody felt while viewing the international videos that could indicate whether they withdrew from absorbing information because they were overwhelmed by the striking images of some clips or by the amount of content. The researcher asked for self-report levels of arousal and valence however it would have been more accurate to measure the participant's heart rate and secondary task reaction time while they were viewing the videos.

One last confound that could possibly be problematic is the role a person's intelligence or IQ plays in their cognitive processing of international news. When examining how a person's pre-existing knowledge affects their storage the researcher attributes that person's ability to store new information to their knowledge coming into the study. However, there is a possibility a person with a high IQ could have an enhanced ability to learn and have low pre-existing knowledge and still store highly. This idea is elaborated upon further in **FUTURE RESEARCH**.

Future Research

As an exploratory study, this experiment hopes to encourage future research and several aspects of this study could be expanded upon to help understand cognitive processes for the topic of international news.

To build on a limitation just mentioned, future research could examine a person's intelligence and do an analysis of covariance to determine any interplay between a subject's intelligence and pre-existing knowledge on a topic. It is possible a person's IQ could alter how they cognitively process new information and lessen the importance of independent variables, attitude accessibility and pre-existing knowledge. Another researcher could begin their experiment with a short IQ test to gauge how a person's intelligence affects their recognition and storage of the international stories they watch. They would then include that in an analysis of covariance to make sure that pre-existing knowledge really does predict storage of a story and not simply intelligence predicts pre-existing knowledge and therefore also predicts storage.

Future research should also focus in on why attitude accessibility was significantly negative, not positive as expected, in regressions with pre-existing knowledge and cued recall storage. A possible explanation for why those with higher pre-existing knowledge had slower attitude accessibility could be that those who knew more were more conscientious in their decision-making. In respect to a negative relationship with pre-existing knowledge, perhaps participants wanted to think through all the knowledge they had on the subject before asserting a 'good' or 'bad' attitude toward the image. Because participants had more knowledge to sift through and analyze in making an attitudinal decision they had weaker attitude accessibility and their reaction times were slower. In respect to a negative relationship with cued

recall storage, perhaps participants with slower attitude accessibility are characteristically more thoughtful and analytical in their learning. This increases the probability those with slower attitude accessibility will retain larger amounts of information as they did in this cued recall exercise after viewing the international videos. However, this is all unsubstantiated theorizing and would be interesting to test quantitatively in future research.

Two important theories that should be explored in future research to understand cognitive processing of international news is distance of threat theory and desensitization. An important part of gauging long-term storage is attention paid to the stimulus or encoding (Lang, 2002). These processes add into total knowledge capacity hence if participants are spending a majority of their processing capital on encoding, the participant's capacity for storing information long-term diminishes. The distance of the threat and American audiences desensitization to international news could very well lower the attention paid to the stimulus. American audiences are geographically and culturally distant to the main locales of international news hotspots such as the Middle East, China and Europe. This creates a lack of urgency and need to pay attention to international stories. One could theorize that news in locations culturally and geographically distant to the viewer would weaken Shoemaker's hardwired for news theory (1996). It also increases the probability that participants will not have accessible attitudes to stories happening in these locales, as there is not personal relevancy. The researcher in this study chose to focus on attitude accessibility as it speaks to an impoverished knowledge network and indirectly incorporates distance of threat, especially culturally. The researcher believed that when a message is "distant" to the participant culturally or geographically, the

participant will also have lower attitude accessibility than if the message is “not distant” culturally or geographically. However, it would be an interesting topic for future research to test the connection between the distance of threat and attitude accessibility and impoverished knowledge.

Desensitization to international news because of the negative, deviant nature of most ‘newsworthy’ international news stories is also a potential phenomenon for American audiences. To establish credibility to the potential of desensitization, the more deviant or negative a story, the more time and space news organizations devote to that particular story. Television veteran Reuven Frank said, “sunshine is a weather report, a raging storm is news” (Hoge, 1997). Van Dijk (1988) claims that the media report negative news over positive, filling newscasts and newspapers with crime, conflict and disasters. Harris (2004) says regularly viewing violence in the media makes us less sensitive to the violence, so that we are less aroused or concerned when we see disturbing acts. “We become so used to seeing people wasted, blown apart, or impaled that it no longer particularly troubles us” (Harris, 2004, p. 267). In effect, desensitization is an example of classical conditioning (Harris, 2004). People repeatedly see, hear and read about violent occurrences in other countries, yet do not experience hurt or pain themselves and hence negative responses to the stimuli (news) weakens. Desensitization could also weaken Shoemaker’s (1996) hardwired for news theory, reducing the attention or encoding of the stimulus by a participant. This theory would be important for future study as it could be decreasing the level of cognitive resources allocated to encoding and storage.

Researchers attempted to control the level of arousal and valence in this experiment. However, it was not significant across stories so controlled arousal and valence would be an option for future research, as both are particularly relevant when

using Lang's Limited Capacity Model of Motivated Mediated Message Processing (2006). Valence distinguishes whether a story is positive or negative and correlates with which motivational system is activated – aversive or appetitive. Negative news stories over a variety of news mediums increases aversive activation and the more intense the stimulus, the higher level of activation (Lang et. al., 2007; Bolls, Potter, & Lang, 2001; Lang, Shin, & Lee, 2005). It is important to measure the level of aversive activation because the majority of international stories are aversive and this characteristic alone could significantly alter a person's cognitive allocation of resources by heightening encoding and reducing storage.

Another way future researchers could build on this study is by including sample demographics from the participants. This experiment did not include questions related to age, sex, socio-economic background, nationality, intelligence or profession. One particular area of interest a researcher could examine in more depth is a participant's exposure to international events and issues. This could involve questions related to what languages they have learnt, if they have travelled or lived in other countries, if their parents are first generation Americans etc. Another demographic characteristic of importance is the participant's news consumption patterns and whether they make an effort to watch/read/listen to news from a particular part of the world. It might be particularly useful to analyze data along these demographic divisions because personal characteristics and backgrounds could influence the cognitive processing of international news stories. In short, life experience matters. The researcher tried to control for life experience through open-ended cued recall questions at the beginning of the study, however it would benefit future researchers to be more specific and further analyze various inputs like news

consumption, travelling experience, age, profession etc. To also repeat from the **LIMITATIONS** section, there is a possibility natural intelligence could have masked relationships between pre-existing knowledge, attitude accessibility and storage. It would be useful for future research to test the role of intelligence in cognitive processing.

To build further on this type of future research, researchers believed curiosity might be indicative of an innate ability to allocate more resources to encoding and storing resulting in more comprehensive intelligence. It may be prudent to test a participant's curiosity as a predictor variable in the future. Kang, Hsu, Krajbich, Loewenstein, McClure, Wang and Camerer (2009) suggest that information is much like food to humans. People have an innate hunger for information that needs to be addressed before the person can divert attention from the message and is evolutionarily adaptive. The researchers describe how a small amount of pre-existing knowledge combined with new information work together in priming the hunger for more knowledge, "much as an olfactory or visual stimulus can prime a hunger for food" (Kang et. al., 2009). The researchers believe journalists have a special role to play in these phenomena as they "create curiosity". Providing much of these systems are homeostatic this would be a good topic for future research, as it would provide tangible insight for journalists into how to increase curiosity and perhaps increase cognitive resources allocated to encoding, storing and retrieving information. Einstein once described the importance of curiosity in knowledge this way, "I have no special talents. I am only passionately curious." (Kang et. al, 2009; Hoffmann, B. 1972).

A future study could attempt to repackage the international broadcast news stories so that more resources are allocated to storage. In terms of news delivery, it

would never be the case a viewer could shift all their encoding resources to storage. However, if the video was packaged in a way that gave the viewer a chance to break and absorb the information as they watched it this could improve their ability to store the content in long-term memory. The researcher could work to integrate text, images or audio with the video or the video could be broken up with an anchor giving more contextual information. This would be an interesting experiment for those involved in multimedia and convergence journalism. This research found that those who lack strong storage capabilities also lack pre-existing knowledge, however in multimedia journalism the journalist could offer 'base' knowledge next to the story. This could act in the same capacity of pre-existing knowledge and allow the participant to root the new information in their head. For example, on a story on U.S. soldier deaths in Afghanistan the journalist could create a typical broadcast package but surround it with 'base' information such as an interactive map of Afghanistan and highlight places where the story occurred or places relevant to subjects within the story. The journalist could include a rollover graphic using the faces of those killed in the story and personal information about them and a fact sheet with bullet points of facts relevant to the storyline. This additional information gives the participant background information giving them a stronger base of knowledge on which to build upon with the video. Having more peripheral information available may allow the viewer/reader/listener to organize all the information more effectively as they have a more comprehensive macro view of the situation.

It would be interesting to examine if the level of recognition remains the same across mediums and furthermore if storage changes when the medium changes. It could be theorized that if consumers can absorb the information in their own time from

for example, a print source they may remember more than from a fleeting broadcast story. They may be able to make more connections to their pre-existing knowledge network and attitudes and hence more information will be retained in long-term memory, as opposed to when consumers are highly stimulated with a lot of visual and audio stimuli at one time and are allocating more resources to encoding. Future research could even create a new model of a combination of a couple of traditional mediums with the goal of priming the knowledge network for what is to come by suggesting connections to the pre-existing knowledge network viewers do have and their existing attitudes. The medium could then allow people a chance to break and more effectively store the information they just received.

The researcher could also consciously change the pacing of the content from a high concentration of new information without pauses, or longer pauses with a reduced concentration of new information. Changing the format and pacing of a story so that a viewer was not attempting to encode highly stimulating video and audio simultaneously and continuously should reduce the video complexity and tip the balance of cognitive resources away from high encoding to high storage.

Another aspect future researchers could examine is integrating participant's pre-existing knowledge into stories to increase the probability of long-term storage. For example, most participants would have knowledge of Hollywood, the Superbowl and U.S. President Barack Obama. Including popular and notable subjects may increase the personal relevancy of the story for the participant and could encourage them to believe other information in the story is also of personal relevance. It would also signify that the immediate information is important to allocate resources to and would result in higher levels of storage. The anchor could effectively become a

central executive priming the knowledge network ahead of exposure and subconsciously alerting the participant the following information is important and should be stored long-term.

Other researchers have suggested that the United States is not the only country to be plagued with low international news knowledge. A similar phenomenon occurs in large countries that take up a large percentage of a continent i.e. Brazil, Russia and China. It may be an interesting study to examine whether these countries do in fact have low pre-existing knowledge of international news and whether like in the United States that also prohibits their storage of international news.

This study would also be interesting to replicate with different genres of news. If a researcher looked at business news for example, they could examine pre-existing knowledge and attitude accessibility related to issues and events in domestic business. The researcher could then examine recognition and storage of stories related to business in the U.S. Unlike international news stories, business stories do not usually elicit a strong aversiveness response so this could test the importance of having a level of aversity when participants are processing the story.

Conclusion

This study examined pre-existing knowledge and attitude accessibility to international issues and events to determine their significance in storing international broadcast news stories in long-term memory. The base theories for these predictor variables were attitude accessibility and an integrated network model of human memory to examine the level of participant's knowledge networks. (Fazio, 1992; Roskos-Ewoldsen, Ralstin, & St. Pierre, 2002; Kintsch, 1998; Ericsson & Kintsch,

1995). Lang's Limited Capacity Model of Motivated Mediated Message Processing (2006) was the theory used to comprehend the interaction between the allocation of cognitive resources – primarily encoding, storage and retrieval.

It was observed that pre-existing knowledge and attitude accessibility significantly affect the allocation of cognitive resources to storage in long-term memory. Hypothesis three supports the theory that a person with an impoverished international knowledge network will be less likely to make long-term connections with new information, hindering further growth of their international news knowledge. Hypothesis one and four were significant, yet opposite of what was hypothesized – being negative not positive relationships. The theory of attitude accessibility, that if a person has high attitude accessibility that will signify information related to those attitudes as important and a person will allocate further resources to processing that information, was not supported. Those with high attitude accessibility retained significantly less information in long-term memory than those with low attitude accessibility. A possible explanation for why those with higher pre-existing knowledge had slower attitude accessibility could be that those who knew more were more conscientious in their decision-making. In respect to a negative relationship with pre-existing knowledge, perhaps participants wanted to think through all the knowledge they had on the subject before asserting a 'good' or 'bad' attitude toward the image. Because participants had more knowledge to sift through and analyze in making an attitudinal decision they had weaker attitude accessibility and their reaction times were slower. In respect to a negative relationship with cued recall storage, perhaps participants with slower attitude accessibility are characteristically more thoughtful and analytical in their learning. This increases the

probability those with slower attitude accessibility will retain larger amounts of information as they did in this cued recall exercise after viewing the international videos. However, this is all unsubstantiated theorizing and would be interesting to test quantitatively in future research.

Correct and incorrect cued-recall storage responses were analyzed against the predictor variable of pre-existing knowledge and there was a significant positive relationship. This adds further support to the impoverished knowledge network phenomena as participants had a harder time remembering information from the videos when they had lower pre-existing knowledge. They also had a significantly lower level of accuracy in long-term memory when they had lower levels of pre-existing knowledge.

Roskos-Ewoldsen and Fazio (1992) write people are more likely to orient their attention to an object if they already have an accessible attitude toward that object. The relationship of attitude accessibility as a predictor variable and recognition as a dependent variable was analyzed in a regression model but was not significant. This was hypothesis two. Shoemaker's hardwired for news theory was used to predict participants would pay attention to the stories, as international news stories are predominantly negative and arousing in nature. Although self report means (see **TABLE 1**) showed participants did not perceive any of the stories as highly arousing and negative.

The results of this study yield theoretical insight into how the cognitive resources are allocated depending on the state of a person's knowledge network and attitude accessibility. As mentioned in the **INTRODUCTION** studies have not been conducted as yet on the effects of attitude accessibility and knowledge networks on

international news consumption and the resulting level of intellect. Based on this study, impoverished knowledge networks and high attitude accessibility result in low long-term storage of international news videos. Thus this study provides a new theoretical framework from which to consider why American viewers know little about the world around them – viewers who do not remember a lot of the international broadcast news aimed at educating them about the world may have an impoverished knowledge network. Without further quantitative testing it is difficult to understand why or how attitude accessibility would have yielded significantly opposite results to which was originally theorized with pre-existing knowledge and cued recall storage.

The experiment also provides original theoretical analysis using Lang's LC4MP (2006) model to interpret cognitive resource allocation of international news messages. LC4MP is a way of understanding how the brain decides to encode, store and retrieve information and has not commonly been used in the field of international journalism. This theory works to explain how pre-existing knowledge and attitudes are retrieved in order to store new information.

All of these phenomena have practical implications in the field of journalism and in the pursuit of heightened international knowledge within American society. This study suggests that in order to increase Americans knowledge of international events, subjects and issues it is important to increase viewers pre-existing knowledge. The responsibility for increasing low pre-existing knowledge may fall to educators, particularly those in childhood learning. Much of the interaction that results in low knowledge is homeostatic, meaning that teaching children early about the world around them will help to snowball their learning on the topic in the future.

To educate viewers, journalists should attempt to write and show images that

one could presume a “typical American viewer” might hold in long-term memory as an information object. This would be a fantastic way for television stations and networks to spend market research money and resources. This type of market research has never been conducted but if news outlets made an effort to learn what their viewers already know they could tap into that pre-existing knowledge to increase what viewer remember about their news stories. For example, a topic of research companies could examine in 2009 is viewers knowledge of the war in Afghanistan.

A journalist has the responsibility of working with viewers pre-existing knowledge, because currently educators are not instilling a strong international knowledge base or developing children’s attitudes about foreign places. Journalists are not doing their duty if they’re providing information viewers are unable to distil or learn from. It should be a journalist’s ultimate priority to educate viewers about society and the world around them in a meaningful way that viewers can interpret and translate to their lives. Typically American viewers find international news stories difficult to understand and hence boring. Because of this news companies have reduced international coverage. There are far fewer correspondents and bureaus around the world than there once was and this is doing a disservice to viewers. Journalists must push forward, finding new ways to tell their stories so that viewers can make meaningful cognitive connections with the information broadcast. If information means nothing to a viewer because they cannot understand how it relates to them, and their knowledge network, then it is not surprising they do not allocate the cognitive resources needed to store the information in long-term memory. Journalists and their companies should make an effort to understand what their viewers have knowledge of in order to do stories that would build on their viewers pre-existing

knowledge.

In order to do this, a journalist could either focus on reporting stories that would tap into their viewers 'cognitive base' or they could write stories in a way that aids viewers in making cognitive connections to information they already have stored. For journalists this means analogies.

For example, for a story regarding the war in Afghanistan journalists could frame the story drawing analogies on the fight between the Taliban and U.S. soldiers to the fight between drug dealers and police SWAT teams in America. People are familiar with how U.S. police departments operate as they see stories on local news programs each night. This would allow viewers to draw from a larger pool of attitudes and information they have stored regarding local police stories, and make connections with stories they would otherwise have no personal connection with.

At the time of this thesis many local news outlets are considering eliminating national and international news stories from their nightly newscasts. This would be disastrous for viewer's international news knowledge. Local news outlets believe that with the advent of the Internet and immediate access to international news from news sources around the world, local news outlets should focus on what they do best – local news. International news also gets poor ratings and in a time of intense economic pressure news outlets feel it's a logical transition to drop what does not serve the bottom line. The lesson from this study is that local news outlets could focus on local news but provide the international context or viewpoint within that story. In keeping with the theory of working with viewers pre-existing knowledge, local news journalists could write a local news story but include the international factor that caused the domino effect and impacted their local population. For example, when

Wall Street crashed in 2008 economic powerhouses around the world like Japan followed the United States. This compounded the economic downturn and led to local businessmen, teachers, police officers and other public servants feeling the consequences of a globalized economic system. This type of story would effectively educate local viewers on their neighbors predicament and what is happening in their own community while at the same time helping them to understand what is happening simultaneously in other countries around the world. Assignment editors at local news stations could improve their viewers understanding of international events and issues if they consciously choose stories at story meetings that have an international element. This would not have to be an obvious connection such as an international subject in the story but to consciously think how the story affects the wider world or how the wider world affects the story.

The theories (attitude accessibility, knowledge networks and LC4MP) utilized in this study make any findings from this research widely applicable to a variety of situations. The researcher studied a psychological relationship between pre-existing knowledge, attitude accessibility and the cognitive procession of international affairs. The results showed there is indeed a psychological relationship that could be applied to any geographic location and persons of any nationality. This study was motivated by American's cognitive processing of international news, in particular because it appears Americans have trouble storing international news. Many of the theories and respective results speak to a human psychological phenomenon. There is no theoretical reason to believe this pattern of results and relationships would not also be significant in regards to a variety of countries around the world or with participants of different nationalities. Results should hold for all people across the globe.

Further, the study gives practical support to the benefits of understanding viewers cognitive base. MSNBC and FOX News are popular cable networks in the United States. FOX has been popular for many years and is seen as a conservative network with a conservative base. MSNBC has become more popular since it took on a more liberal stance and has seen an increase in ratings from its mostly liberal viewers. After conducting this research it comes as no surprise that a conservative network pulls conservative viewers and a liberal network pulls liberal viewers. These networks are tapping into their viewers pre-existing knowledge about the world around them and working with that cognitive base. They build on the same arguments, theories and themes night after night and viewers are able to make connections and recognize the information as important and relevant because they recognize the messages they see and hear. From this researchers perspective, journalism would benefit if more companies and journalists took these findings into consideration, and worked with their audiences, as opposed to expecting their viewers to care about new and often abstract international news stories.

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