

MULTIMEDIA EXEMPLIFICATION:
THE INTERPLAY OF REPRESENTATION AND MODALITY
IN THE PROCESSING OF ONLINE NEWS
AND PERCEPTIONS OF INTERNATIONAL ISSUES

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ABSTRACT

HAI LONG TRAN: Multimedia Exemplification: The Interplay of Representation and Modality in the Processing of Online News and Perceptions of International Issues
(Under the direction of Rhonda Gibson)

This dissertation addressed multimedia exemplification to explore the conditions under which multimedia integration into Web sites enhances or undermines information processing. Because exemplification amounts to vivid case descriptions creating shortcuts for judgment, the author set out to test whether multimedia enhancements in news Web sites could act as exemplars and influence the way people perceive issues reported in the accompanying stories.

The experimental study employed a 3x3x2 mixed factorial design (post-test only) with exemplar representation (one side=negative, other side=positive, both sides=mixed) and exemplar modality (low, moderate, high) serving as two between-subjects factors, and time of response (immediate, delayed) as a within-subjects factor. Modality was manipulated by the presentational format of exemplars (text only=low; text+picture=moderate; text+picture+video=high). Issue perception was examined through assessments of consequences (immediate, delayed) and inferences about the future (immediate, delayed). A sample of 180 students was randomly assigned to 18 versions of “The Global Journalist,” a fictitious news site.

According to the results, exemplifying information in the multimedia content (i.e., extra-text exemplars), rather than focal information in the textual content, created a shift in issue perception. In immediate responses, the group given negative (one side) exemplars assessed the issues more negatively than did the groups assigned to either positive (other side) or mixed (both sides) exemplars. The more interesting finding was the interaction effect of exemplar representation and exemplar modality on immediate responses. Partiality in high-modality exemplars (text+picture+video) was more likely to bias immediate assessments of consequences than did partiality in low-modality exemplars (text only). This happened in the presence of identical, balanced news text across all conditions.

Meanwhile, the main effect of exemplar representation and the interaction effect of exemplar representation and exemplar modality were not observed in immediate inferences about the future of the reported issues. This dissertation also failed to detect either the main effect of exemplar representation or the interaction effect of exemplar representation and exemplar modality on delayed assessments and delayed inferences.

Theoretical and practical implications of the study findings were discussed.

To mom,

Somewhere up there, I believe, you are smiling. We all miss you.

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TABLE OF CONTENTS

| | |
|---|------|
| LIST OF TABLES | xi |
| LIST OF FIGURES | xiii |
| Chapter | |
| I. INTRODUCTION | 1 |
| II. LITERATURE REVIEW | 9 |
| Exemplification | 9 |
| Overview | 9 |
| Exemplars versus Base-Rate Information | 10 |
| Theoretical Explanation for Exemplification | 12 |
| The quantification heuristic | 12 |
| The representativeness heuristic | 13 |
| The availability heuristic | 14 |
| Vividness and salience | 16 |
| Effects of Issue Representation in Exemplars | 17 |
| Effects of exemplar distributions | 17 |
| Effects of qualitatively distinct exemplar aggregations.. | 21 |
| Effects of exemplifying accompaniments | 22 |
| Multimedia accompaniments as extra-text exemplars ... | 25 |

| | |
|---|----|
| Hypothesis 1 | 26 |
| Exemplification with Passage of Time | 26 |
| Hypothesis 2 | 29 |
| Modality | 30 |
| Overview | 30 |
| Concept Explication | 31 |
| Modality as medium | 31 |
| Modality as sensory mode | 32 |
| Modality as communication mode | 33 |
| Modality as code | 33 |
| Modality and multimedia | 34 |
| Modality Effects | 35 |
| Hypothesis 3 | 38 |
| Modality-Induced Vividness | 39 |
| Hypothesis 4 | 40 |
| Modality as Exemplification Moderator | 40 |
| Hypothesis 5 | 42 |
| Research question | 43 |
| Additional Hypotheses | 44 |
| Hypothesis 6a | 44 |
| Hypothesis 6b | 44 |
| III. METHOD | 45 |
| Design Overview | 45 |

| | |
|---|----|
| Participants | 45 |
| Stimulus Materials | 46 |
| Exemplar Variations | 49 |
| Issue representation | 49 |
| Modality | 49 |
| Dependent Variables | 50 |
| Issue perception | 50 |
| Perceived vividness | 52 |
| Site perception | 53 |
| Perceived news credibility | 54 |
| Content evaluation | 54 |
| Control Variables | 54 |
| Procedure | 55 |
| Data Analysis | 56 |
| IV. RESULTS | 58 |
| Manipulation Check | 58 |
| Measurement Validation | 59 |
| Tests of Hypotheses | 61 |
| H1: Immediate effect of representation on issue perception | 61 |
| H2: Enduring effect of representation on issue perception | 63 |
| H3: Main effect of modality on site perception | 64 |
| H4: Main effect of modality on perceived vividness | 66 |

| | | |
|----|---|-----|
| | H5: Interaction of representation and modality: Immediate effect on issue perception | 67 |
| | RQ: Interaction of representation and modality: Enduring effect on issue perception | 70 |
| | H6a: Null effect of representation on content evaluation | 71 |
| | H6b: Null effect of representation on site perception and perceived credibility | 72 |
| | Summary of Findings | 73 |
| V. | DISCUSSION | 75 |
| | Interpretation of Findings | 75 |
| | Theoretical Implications | 81 |
| | Practical Implications | 84 |
| | Limitations | 87 |
| | Future Research | 89 |
| | APPENDICES | 92 |
| | REFERENCES | 170 |

LIST OF TABLES

Table

| | | |
|-----|---|-----|
| 1. | Summary of ANOVAs for Manipulation Check (Africa Story) | 92 |
| 2. | Tukey HSD Comparison for Manipulation Check (Africa Story) | 93 |
| 3. | Summary of ANOVAs for Manipulation Check (Mindanao Story) | 94 |
| 4. | Tukey HSD Comparison for Manipulation Check (Mindanao Story) ... | 95 |
| 5. | Descriptive Statistics | 96 |
| 6. | Assessment _{Immediate} and Inference _{Immediate} by Representation | 97 |
| 7. | Standardized Canonical Coefficients and Correlations of Discriminating Variables with the Two Discriminant Functions (H1 Testing)..... | 97 |
| 8. | Pairwise Differences in Group Means on Issue Perception (Immediate Effect) | 97 |
| 9. | Assessment _{Delayed} and Inference _{Delayed} by Representation | 98 |
| 10. | Attitudes _{Site} and Intentions _{Site} by Modality | 98 |
| 11. | Standardized Canonical Coefficients and Correlations of Discriminating Variables with the Two Discriminant Functions (H3 Testing) | 98 |
| 12. | Pairwise Differences in Group Means on Site Perception (H3 Testing). | 99 |
| 13. | Perceived Vividness by Modality | 99 |
| 14. | Pairwise Differences in Group Means on Perceived Vividness (H4 Testing) | 99 |
| 15. | Assessment _{Immediate} and Inference _{Immediate} by Representation and Modality | 100 |
| 16. | Raw and Standardized Canonical Coefficients (H5 Testing) | 101 |

| | | |
|-----|--|-----|
| 17. | Mean Differences on LDF1 for Representation and Modality (Immediate Effect) | 101 |
| 18. | Mean Differences on LDF1 for Modality and Representation (Immediate Effect) | 101 |
| 19. | Assessment _{Delayed} and Inference _{Delayed} by Representation and Modality. | 102 |
| 20. | Content _{AF} and Content _{MI} by Representation | 103 |
| 21. | Attitudes _{Site} , Intentions _{Site} , Credibility by Representation | 103 |
| 22. | Summary of Findings | 104 |

LIST OF FIGURES

Figure

| | | |
|----|---|-----|
| 1. | Distributions of LDF Scores by Multimedia Representation (H1 Testing) | 105 |
| 2. | Distributions of LDF Scores by Modality (H3 Testing) | 106 |
| 3. | Main Effect of Modality on Perceived Vividness (H4 Testing) | 107 |
| 4. | Means for “One side” and “Other side” Groups across Modality Conditions (H5 Testing) | 108 |
| 5. | Means for High and Moderate Modality Groups across Representation Conditions (H5 Testing) | 109 |
| 6. | Means for the Three Modality Groups across Representation Conditions (H5 Testing) | 110 |

CHAPTER 1

INTRODUCTION

Extra-text illustrations have long been used as a design strategy to augment the news content. Almost three decades ago, *USA Today* took a bold approach to graphics, demonstrating that well-packaged information would hold readership (Griffin & Stevenson, 1994; Pippis et al., 2009). The shift to online journalism in recent years (PEJ, 2010) enables the creation of newer forms of presentation to engage audiences. Multimedia functionality, the Web's capability to provide content in various formats and combinations across formats, allows journalists more freedom to integrate extra-text elements into reporting (Deuze, 2004; Dimitrova & Neznanski, 2006). In the Web environment, interactive graphics, slideshows, animations, and testimonials in audio and video can be embedded along with traditional visual elements such as photographs and extracted quotes.

While it is hoped that an appropriate blend of multimedia features and text would enhance information processing (Yaros, 2009), the widespread use of stand-alone multimedia (Greer & Mensing, 2004; Tremayne, Weiss, & Alves, 2007) merely to embellish news presentations raises questions about unintended side effects of such integration. In fact, the conviction that vivid communication through extra-text enhancements will lead to improved transfer of news (Griffin & Stevenson, 1992, 1994) has been challenged. Research suggested that the display of “grabbers” (i.e., attention-grabbing visuals) to augment the text could

convey extra-focal information and affect social judgment (Gibson, Hester, & Stewart, 2001; Gibson & Zillmann, 2000; Zillmann, Gibson, & Sargent, 1999).

The exemplification hypothesis (Zillmann, 1999, 2002, 2006; Zillmann & Brosius, 2000) provides a useful framework to account for effects of adding multimedia elements into online reporting. In a broad sense, this theory postulates that the typical news consumer often uses vividly displayed stimuli (i.e., exemplars) as shortcuts in processing information and making judgment (Aust & Zillmann, 1996; Gibson, Hester, & Stewart, 2001; Zillmann & Brosius, 2000). Because more valid but less vivid factual details (i.e., base-rate data) are usually ignored, exemplars describing concrete cases potentially lead people to judge the whole by single incidents (Zillmann, 1999, 2006). Though news exemplars come in various forms, extra-focal enhancements in particular (e.g., photographs, pull quotes, newscast-closing upbeat items) are believed to induce strong, enduring exemplification effects (Gibson, Hester, & Stewart, 2001; Gibson & Zillmann, 2000; Zillmann, Gibson, & Sargent, 1999; Zillmann et al., 1994). Taking this theoretical perspective into consideration, the present research explored whether vivid multimedia accompaniments could act as exemplars in the context of online news.

Exemplification amounts to a sampling process in which judgment is formed on the basis of the representation of a larger-scope phenomenon by a few case descriptions (Zillmann, 1999, 2006). At the heart of it, this theory is primarily concerned with the representativeness of the whole of the respective issues by exemplifying information. The extant literature has always focused the direct, main effect of the representation in exemplars on the accuracy of social judgment (see Zillmann & Brosius, 2000 for a review). Numerous studies showed that even in the presence of precise base-rate data, news exemplars, though

often non-representative, are able to create a corresponding shift in issue perception (Gibson & Zillmann, 1998; Gibson, Smith, & Hester, 2008). Both quantitative and qualitative misrepresentations in in-text exemplars (i.e., the selection of the extreme aspects of occurrences under consideration) were found to foster misperceptions of social phenomena (Zillmann, 2002; Zillmann & Brosius, 2000). Partiality in extra-text enhancements such as images and extracted quotes also led to biased, even distorted assessments of issues reported in the accompanying stories (Gibson, Hester, Stewart, 2001; Gibson, Smith, & Hester, 2008; Gibson & Zillmann, 2000; Zillmann, Gibson, & Sargent, 1999).

Exemplification research has addressed the duration of influence that the representation by exemplars exerts on issue perception. The presentation of atypical aspects of occurrences in news exemplars in general and extra-text exemplars in particular (i.e., visual elements) was shown to have long-term effects, even sleeper effects (Zillmann, 2006; Zillmann & Brosius, 2000). The unique features of concrete, vivid stimuli make them more memorable and ready to be used as stored knowledge with the passage of time (Zillmann & Brosius, 2000). Information in extra-text exemplars is most likely to eclipse textual information over time in the reader's mind (Zillmann & Gan, 1996; Zillmann, Gibson, & Sargent, 1999).

Despite an accumulation of empirical data on this phenomenon, much less is known about variables that potentially moderate exemplification effects. Some studies touched on this issue when comparing exemplar influence in print and radio news and demonstrating that exemplification might not be contingent on the medium of information delivery (Brosius & Bathelt, 1994; Daschmann, 1999; Gibson & Zillmann, 1993). Since exemplification is explained as an outcome of heuristic processing by which the vivid nature of exemplars leads

people to use them as shortcuts in making judgments (Brosius, 2003; Zillmann & Brosius, 2000), it is plausible to consider exemplar vividness a moderator of the effect (Baesler & Burgoon, 1994; Brosius & Bathelt, 1994). Past research, however, failed to unearth significant findings partly due to difficulties in operationalizing vividness as a measurable aspect of the stimulus (Brosius, 2003). The manipulation of exemplar vividness typically involved the use of concrete and colorful language, which may not be an adequate operationalization of this variable (Appiah, 2006).

Meanwhile, vividness effects research has developed different strategies to obtain vividness variation in stimulus materials (Smith & Shaffer, 2000). The manipulation of vividness in terms of modality (i.e., presentational format of the stimulus) is among the most common methods (Coupey & Sandgathe, 2000) that have been linked to the observation of appreciable effects in several important studies (e.g., Keller & Block, 1997; Shedler & Manis, 1986; Smith & Shaffer, 2000). In the context of human-computer interaction, Steuer (1992) has defined vividness as the way in which a medium presents information to the senses. In this view, the vividness of a medium primarily depends on its sensory breadth and sensory depth (Steuer, 1992). As one or both of two dimensions vary, the degree of vividness covaries. Research in the domain of online communication has tested the impact of vivid stimuli strictly in terms of sensory breadth, which was operationalized as the modality of presentation (Appiah, 2006; Coyle & Thorson, 2001; Li, Daugherty, & Biocca, 2003). Applied to exemplification research, it is possible to examine whether multimodal exemplars expanding sensory breadth would enrich the user's experience, be perceived as more vivid than are monomodal exemplars, and thereby induce stronger exemplification effects. A

recent study tentatively suggested that the combined use of in-text and pictorial exemplars could serve to heighten impact on judgment (Gibson, Hester, & Smith, 2008).

As multimodality becomes a defining feature of online news (Opgenhaffen, 2008), it is more appropriate than ever to account for the moderating role of exemplar modality in news exemplification. In examining what can be termed as multimedia exemplification (i.e., extra-text information conveyed through multimedia enhancements shifts perceptions of the addressed issues), this dissertation focused on the interplay of issue representation in exemplars and exemplar modality and sought to generate greater insight into the mechanisms underlying exemplification effects. The study addressed the following question:

For users of a news site, controlling for the news content, what is the relationship between the type of representation and modality employed in exemplars and perceptions of the reported issues? In addition, the research tested to see whether the influence of these two variables is short-lived or enduring.

Specifically, the current undertaking involved an experiment designed to gauge both immediate and delayed effects of exemplar representation and exemplar modality on the processing of online news and perceptions of international issues. The representation by exemplars was manipulated as one side (negative), other side (positive), or both sides (mixed). Exemplar modality was expressed in terms of the presentational format (text only=low; text+picture=moderate; text+picture+video=high). Issue perception was mainly examined through assessments of consequences and inferences about the future of the reported occurrences. Immediate response was collected after participants being exposed to the stimuli and delayed response was solicited between 10 and 14 days later.

The author hoped to achieve several purposes in this project. It was expected that the dissertation could help strengthen our theoretical understanding of exemplification and multimedia effects on information processing. The research also sought to provide practical implications for the news industry to use in presenting content.

First, the present study took a step toward theory development by looking at exemplar modality as a potential moderator of exemplar influence. Exemplification research has typically zoomed in on the isolated impact of the representation by exemplars, while giving much less attention to other variables contributing to exemplification (see Zillmann & Brosius, 2000 for a review). This dissertation examined the interaction of exemplar representation and exemplar modality, thereby accounting for some of the variation in exemplification effects.

Likewise, the study aimed at exploring the link between exemplar vividness and the magnitude of exemplar influence. Although vividness is a theoretical concept for the explanation of exemplification (Brosius, 2003; Zillmann & Brosius, 2000), past research has been unable to show that increasing vividness enhances the impact of exemplars (Baesler & Burgoon, 1994; Brosius & Bathelt, 1994). The current undertaking sought an alternative explanation for the null findings, suggesting that failures to confirm the contribution of vividness could be attributed to weak operationalization. This dissertation hoped to remedy the situation by operationalizing vividness strictly in terms of modality (Steuer, 1992), a measurable dimension of exemplars.

While exemplification is theorized to occur on the basis of limited experience with relevant happenings (Zillmann, 1999, 2002), prior studies have rarely addressed exemplar influence on judgment of highly inaccessible issues. The present research investigated

exemplification effects in the context of international affairs in order to further test this hypothesis. At the same time, the dissertation responded to the call for a greater emphasis on effects of foreign news (Perry, Melson, & Howard, 1997). Given the role of the news media as our windows to the world (Wanta, Golan, & Lee, 2004; Wu, 2003), it is important to investigate how media images shape the perception of international issues.

The current undertaking also expected to extend exemplification to the domain of online news. Empirical support for the theory has largely been generated from studies of traditional media (Zillmann, 2002; Zillmann & Brosius, 2000). In researching multimedia exemplification, this project sought to replicate previous findings with data on newer forms of media presentations.

Moreover, the dissertation aimed to contribute to research on multimedia effects. While the extant literature has focused heavily on education and multimedia learning (Mayer, 1997, 2001), much less work has been done in the communication field (Pipps et al., 2009). The present study probed how multimedia enhancements affect social judgment, thereby exploring a new dependent variable that potentially enriches our theorizing of multimedia effects. In addition, this research utilized the ordinal-level conceptualization of modality (Kioussis, 2006; Rockwell & Singleton, 2007; Sundar, 2000) to find more evidence regarding the psychological effects of multimodality in online communication.

Finally, the study attempted to inform journalists about the benefits as well as disadvantages of adding multimedia to online reporting. Despite a growing popularity of multimedia enhancements in news presentations (Greer & Mensing, 2004; Tremayne, Weiss, & Alves, 2007), the actual effects of such practice have not been well understood (Berry, 2001; Kioussis, 2006; Pipps et al., 2009; Sundar, 2000). In examining multimedia

exemplification, this dissertation hoped to provide practical suggestions for news producers to consider when embellishing the text with multimedia accompaniments.

In subsequent chapters, the author first reviews the literature pertaining to exemplification effects, discusses the concept of modality, and delineates relevant theoretical frameworks. Based on these theories and on previous research, the author proposes several hypotheses and a research question. The author then details the experimental design, procedures, stimulus materials, and dependent variables used in this study. The last two chapters report and discuss the research findings and their implications.

CHAPTER 2

LITERATURE REVIEW

Exemplification

Overview

Perhaps giving examples is the most widely used method to elaborate a concept or to discuss an issue. Concrete clues from things that people often encounter in the normal course of life help foster comprehension of abstract ideas. Even a genius mind like Isaac Newton needed a falling apple to think about gravity in an easy-to-understand way. The best examples are those that adequately explain aspects and features of the larger exemplified entity. Exemplification by atypical examples is bound to mislead the recipient of the information as to the basic characteristics of the phenomena under consideration (Zillmann & Brosius, 2000). In other words, exemplification is concerned with the representation of the whole of the respective phenomena or issues by some of its parts (Zillmann, 1999).

Zillmann (2006) postulated:

Exemplification theory addresses the formation and modification of beliefs about phenomena and issues on the basis of samplings of experienced and directly or indirectly witnessed concrete, unitary occurrences that share focal characteristics. The theory examines the conditions under which such samplings are aggregated and come to represent, impartially or in distorted ways, the whole of the respective phenomena and issues (p. S221).

Although exemplification can be seen in all domains of human communication, the theory is particularly important for journalism. Because the news media are charged with the

responsibility to inform the public about the day's events, they exert a great influence on the provision of exemplars and the formation of social judgments (Zillmann & Brosius, 2000). Due to limited access to happenings "out there," news consumers are most likely to draw inferences about reported issues on the basis of details selected by journalists.

Exemplars versus Base-rate Information

News reports, irrespective of topic variance, frequently contain two different types of information in order to describe and explain phenomena: base-rate data and exemplars (Brosius, 1999; Zillmann et al., 1996). Base-rate information provides general descriptions of the significance, causes, and consequences of the occurrence. It is of statistical nature (i.e., facts and figures) and used to quantify the relevance of the phenomenon under consideration (Brosius, 1999; Perry & Gonzenbach, 1999; Zillmann et al., 1996; Daschmann & Brosius, 1999). Base-rate information can be very specific, using exact numbers with minimal error (e.g., 12.47%, 98.15%), or very general, using intuitive appraisals with minimal precision (e.g., most, some, little) (Zillmann et al., 1996). This type of information is based on a broad set of data and, therefore, has validity when being used to judge the relevance of the reported problem. Meanwhile, its statistical details are usually pallid and hard to discern (Daschmann & Brosius, 1999).

Exemplifying information, or exemplars, describes the larger-scope issue from the unique perspective of an individual (Brosius & Bathelt, 1994). Exemplars, elementary units of exemplification (Zillmann, 2006), can be defined as "case descriptions on specifications of singular incidents that fall within the realm of a particular social phenomenon and that exhibit the pertinent properties of this phenomenon to some degree" (Zillmann et al., 1996, p. 427). Exemplars could be seen in in-text anecdotes, citations, testimonials (Aust & Zillmann,

1996; Brosius & Bathelt, 1994, Gan et al., 1996; Gibson & Zillmann, 1993, 1994; Perry & Gonzenbach, 1997; Zillmann et al., 1996; Zillmann, Knobloch, & Yu, 2001), or extra-text elements such as headlines, pull quotes, or photographs (Brosius, 1993, 1999; Brosius, Donsbach, & Birk, 1996; Gibson, Hester, & Stuart, 2001; Gibson & Zillmann, 2000; Zillmann, Gibson, & Sargent, 1999). Exemplifying information is of an episodic nature and more concerned with typicality rather than with quantified precision (Perry & Gonzenbach, 1997; Zillmann et al., 1996). Case descriptions can be representative or non-representative. The selection of exemplars is based on the subjective judgment of the journalist, and thus, is not necessarily generalizeable. However, exemplars are concrete, illustrative, and easily comprehensible (Brosius, 1999).

Although base-rate data and case descriptions are often combined in news reports to elaborate complex issues in an informative and interesting way, the two types of information differ in their impacts on audiences. Base-rate information has a larger number of cases and as such is more representative and systematic. Statistical details possess a larger information value and, therefore, are more reliable. However, base-rate data lack vividness, appeal, and comprehensibility (Brosius, 1993). Ideally, base-rate information is to be bolstered with the use of exemplars (Perry & Gonzenbach, 1997). Exemplifying information, though often unrepresentative, makes an abstract problem concrete, authentic, and understandable for information recipients (Brosius, 1999; Daschmann, & Brosius, 1999). Paradoxically, findings in exemplification research show that inferences of social phenomena covered in news reports are often influenced by exemplifying information, whereas base-rate information is usually ignored (Zillmann & Brosius, 2000). Despite their low validity, exemplars (with their vividness and emotional proximity) have a much stronger effect on the function of judgment

than do statistics (Brosius, 1999; Daschmann & Brosius, 1999). The influence of base-rate information can overcome the impact of exemplars only if statistical data are clearly articulated, perceptually enhanced, diagnostically relevant, and if competing exemplars are comparatively uninformative (Baesler & Burgoon, 1994; Brosius & Bathelt, 1994; Krupat et al., 1997).

Theoretical Explanation of Exemplification

Zillmann and colleagues took an information-processing perspective to account for exemplification effects on social judgment (Zillmann, 1999, 2002, 2006; Zillmann & Brosius, 2000). Based on the work of Tversky and Kahneman in psychology (see Kahneman, Slovic, & Tversky, 1982 for a review), they called upon heuristics (i.e., cognitive mechanisms that simplify and expedite information intake and utilization) to explain how and why exemplars influence the perception of issues that extend beyond the considered cases. As knowledge structures learned and stored in memory (Chen, Duckworth, & Chaiken, 1999), heuristics are mental shortcuts that allow people to make judgments quickly. Among various concepts pertaining to heuristic processing (Chen & Chaiken, 1999), the quantification heuristic, representation heuristic, availability heuristic, vividness, and salience have been considered most applicable to exemplification theory (Zillmann, 2006; Zillmann & Brosius, 2000).

The quantification heuristic. This heuristic is a cognitive shortcut to attain, with minimal cognitive investment, a sense of the prevalence of occurrences as well as relative distributions (Zillmann, 2006). People continually monitor the frequency of incidents and transform their quantitative impressions into assessments of the relative magnitude or consequences. Such screening is often conducted in a non-conscious manner. But it can become conscious and deliberate, thereby providing estimates for the evaluation of

implications and dependent actions (Ajzen, 1991; Fishbein & Ajzen, 1975). Regardless of the level of awareness involved, the screening is assumed to generate incident assessments in at least ordinal terms (e.g., few, many, a lot of cases) (Zillmann, 2002, 2006). Further assessments are performed to compare between incidence rates and within incidence rates over time (e.g., a grouping of events is larger than another or smaller than before). Again, these comparisons are at least ordinally structured (Zillmann, 2002, 2006).

Applied to exemplification, one may argue that exemplars with distinct features are monitored for their prevalence and relative distribution. The screening of exemplar groupings whether directly encountered or retrieved from memory serves as the basis for estimates of the magnitude of subgroupings (Zillmann, 2002, 2006). For example, people may rely on the ratio of news exemplars representing the majority or minority stand on issues and convert their quantitative impressions to estimates of the prevalence of these occurrences in the larger social environment (Brosius & Bathelt, 1994).

The representativeness heuristic. This heuristic assumes that judgments about groupings are based on the similarity between the attributes of a case and the essential attributes of a group of cases (Kahneman & Tversky, 1972). The representativeness heuristic entails matching processes by which decisions are solely influenced by the described attributes rather than valid statistical information (Kahneman & Tversky, 1973; Tversky, 1977). There is a propensity to process single pieces of information as representative of a larger group. People tend to rely on the assessment of fitness to form judgments, while overlooking accuracy, reliability, and validity of the information. According to Tversky and Kahneman (1982), the representativeness heuristic is characterized by three premises. First, people do not base their decisions about representativeness on the stated prior probability, but

rather on the attributes of the specific case, which they then extend to all cases. The tendency to ignore base-rate information in favor of case-specific information is called the base-rate fallacy (Bar-Hillel, 1980). Second, the representativeness heuristic is oblivious to the statistical implications of sample sizes. People do not consider inferences from a smaller sample as less reliable than from a larger sample. Instead, the same conclusions are drawn regardless of the size of the samples (Kahneman & Tversky, 1972). Third, the representativeness heuristic leads to confusion about the role of chance. People are most likely to misconceive the chance associated with a random process. Even when the chance is the same, they still judge it differently by way of intuition. For example, people may state that, when rolling a dice six times, it is more likely to roll 2-6-4-4-3-5 than 1-2-3-4-5-6.

Applied to exemplars, Zillmann (2002, 2006) has posited that judgments about event populations are extrapolations based on the assessment of exemplar groupings. Meanwhile, much less attention is paid to abstract quantitative information about exemplar distributions. People process information in a simplified form and filter it through personal systems of experience-based categorization. They focus on a few selected case descriptions to form judgments about representativeness, while ignoring more reliable quantitative information and stated probabilities (Zillmann & Brosius, 2000).

The availability heuristic. This heuristic is a mental shortcut to evaluate the frequency or likelihood of an event on the basis of ready accessibility (Kahneman, 2001; Tversky & Kahneman, 1973). By using the availability heuristic, people rely on the ease of cognitive activation. Information that is immediately available and readily brought to mind exerts a disproportional influence at the time decisions are made. The operation of this heuristic eases people in quick, intuitive, even distorted judgments at the expense of thoroughness in

information processing and subsequent assessment. Currently accessed and presently activated information, for example, may have a stronger impact on decisions than potentially available, but momentarily dormant information (Zillmann & Brosius, 2000). However, the availability heuristic focuses on the accessibility of relevant cognitions rather than the recency of cognitive activation (Zillmann, 1999). Information that is easily remembered because of frequent activation or distinctive characteristics avails itself in memory and serves to speed up and dictate contemplation.

Applying these rationales to exemplification, Zillmann (2006) has argued that “judgments about event populations are greatly affected by exemplars that, at the time judgments are rendered, are available in the sense of being cognitively obtrusive” (p. S223). In other words, exemplars avail themselves, thereby having an advantage of being processed. Due to their ready availability, exemplars are more likely to be accessed and retrieved from memory. The perception and evaluation of the exemplified event population, therefore, are largely dependent on exemplars. Meanwhile, deliberation of more valid but less prevalent quantitative information is often bypassed. The accessibility of exemplars depends on two dimensions of exposure: recency and frequency (Zillmann, 2002, 2006). The more recently exemplars are activated, the stronger impact they have on issue perception. Likewise, the more frequently exemplars are activated, the greater influence they exert. The difference between the two is their effect contribution relative to time. The recency of exemplar activation creates a short-lived accessibility because the continual flow of the more recent activations makes the effect time-dependent. Meanwhile, the frequency of exemplification fosters an enduring accessibility that enables persisting impacts over time (Zillmann, 1999; Zillmann & Brosius, 2000).

Vividness and salience. The operation of the aforementioned cognitive shortcuts, especially the availability heuristic, is largely driven by the vividness and salience of information. The two concepts function in different pathways but both contribute to selective attention and its judgmental consequences.

According to Nisbett and Ross (1980), extraordinary perceptual qualities of information greatly enhance its availability and accessibility. Vivid information comes more readily to mind when assessments are rendered because of its emotional interest, concreteness, and sensory, temporal, and spatial proximity (Nisbett & Ross, 1980; Taylor & Thompson, 1982). The exemplification hypothesis argues that exemplars are more vivid, concrete, and dramatic than base-rate information (Brosius & Bathelt, 1994). They are easier to grasp, thereby having an advantage of being processed. Exemplars, due to their vivid nature, are stored at the frontal part of memory and more likely to be retrieved (Chang, 2003). Thus, the vividness of exemplifying information directs attention away from base-rate information and consequently triggers heuristic processing.

While vividness is mostly stimulus-driven, salience is driven by the environment-observer interaction (Zillmann & Brosius, 2000). Salience is the perceived importance or relevance of something. It emphasizes personal orientation and disposition that pull attention toward “outstanding” portions of the stimulus environment. Applied to exemplification, one may argue that exemplars are more salient because they “stick out” and draw more attention (Brosius, 2003) than base-rate information. The salience of exemplifying information facilitates selective attention and thereby contributes to the operation of cognitive shortcuts.

In summary, Zillmann and colleagues have utilized the rationales of heuristics, vividness, and salience in psychology to examine the effect of exemplars on the perception of

issues (Brosius, 2003; Zillmann, 1999, 2002, 2006; Zillmann & Brosius, 2000). In the context of media communication, these theoretical perspectives demonstrate that the typical news consumer tends to resort to convenience when processing news information. Faced with massive flows of fast-paced information, news consumers become “cognitive misers” and rely on expedient shortcuts in reasoning (Aust & Zillmann, 1996; Zillmann et al., 1996). Thoroughness, therefore, gives way to proficiency (Zillmann & Brosius, 2000). Vivid and salient case descriptions, though often atypical, are more likely to be absorbed, processed, and stored in memory instead of more representative but pallid and complex base-rate data. Consequently, exemplars exert a disproportional influence on judgment and is capable of biasing, even distorting it.

Effects of Issue Representation in Exemplars

The exemplification process is analogous to sampling from a population. More specifically, exemplification theory is primarily concerned with “the representation of a group of events by exemplar events” (Zillmann, 1999, p. 77). For that reason, the extant literature tends to focus on the representational accuracy of news about social phenomena and effects of exemplar aggregates on the perceptions of relevant issues (Zillmann, 2002).

Effects of exemplar distributions. One of the first studies in news exemplification explored the effects of representative versus biased exemplar distributions. Zillmann, Perkins, and Sundar (1992, as cited in Zillmann & Brosius, 2000) varied the ratio of different exemplars used to illustrate a report on the failure rates of dieting. The news article provided base-rate information claiming that 32% (precise) or “the minority” of cases (imprecise) would regain the lost weight within one year. Nine exemplars featuring interviews with dieters who kept their weight under control or those who regained the lost weight were

distributed differently in three versions of the story. In the selective condition, all nine exemplars portrayed only weight regainers. In the blended condition, three exemplars portrayed weight controllers while six exemplars presenting weight regainers. This distribution of exemplars also violated representativeness because the majority was underrepresented and the minority was overrepresented. In the representative condition, the article included three exemplars of weight regainers and six exemplars of weight controllers, thereby creating a proportionally correct representation of the base-rate data. Respondents were asked to indicate their estimates of the prevalence of weight gainers. As suggested by the results, the different exemplar distributions fostered assessments of weight control in line with the degree of representativeness. Those who had been exposed to representative exemplars provided the most accurate estimates in comparison with the other two groups. The selective condition resulted in the most inaccurate estimation, while blended representation yielding estimates of intermediate accuracy. In other words, respondents based their estimates on the ratios of exemplars, whereas base-rate information was ignored. Representation, operationalized as the rates of exemplified cases (i.e., quantitative distributions of exemplars), impacted the formation of the perception of general incidence rates.

Additional research used a story on the economics of family farming to test how exemplar distributions influence the perception of an issue with which people have no prior personal beliefs (Zillmann et al., 1996). This strategy was employed to control for disposition, which may confound exemplification effects. Exemplars featuring failing and successful farms were included in the news article with ratios varying in representativeness (9:0; 3:6; 6:3). Again, base-rate data were provided, stating that failing farmers accounted for about a

third of all farmers. Respondents were queried on overall personal perceptions of the issue discussed in the news report. The findings confirmed the effects of representative and biased exemplifications on assessments of the prevalence of cases.

A series of experiments (Brosius, 1999; Brosius & Bathelt, 1994) explored the impact of exemplar aggregations on the perception of social reality, using more systematic variations in the number and the distribution of exemplars representing either the majority or minority position on issues. These studies examined both the perception of the population's opinions and their personal, related perceptions. Respondents were exposed to four reports that varied in the ratios of positive to negative exemplars concerning each issue. All reports began with a summary of the issue that defined the position of the majority (base-rate information). Then a number of exemplars were included in different combinations. The representative condition presented an exemplar distribution that was in accordance with base-rate information. The discrepant conditions provided different exemplar aggregations that were at odds with the base-rate information. As indicated by the findings, exemplar distributions affected respondents' estimates of the population's opinion, despite the fact that exemplar distributions were contradicted by the base-rate data. Respondents were also influenced by the exemplar aggregations in forming their personal evaluations. In other words, respondents joined the majority of the exemplifying opinions.

Perry and Gonzenbach (1997) investigated the effects of disproportional exemplars on public opinion about a controversial issue – a proposed amendment to the U.S. constitution about prayer in public schools. These scholars created three video news stories differing in exemplar aggregations that represented a supporting, opposing, or balanced stance on the prayer in school issue. They found perceptions of current and future public

opinion on the issue mirroring the distributions of exemplars. Exposure to more pro-prayer exemplars led to higher estimates of public opinion in favor of the idea, whereas viewing more anti-prayer exemplars led to higher estimates of public opinion against it. Moreover, changes in personal opinion about the amendment occurred in the direction of the exemplar distribution. Along the same vein, a study using television news about an international event (i.e., the 1994 Hebron massacre in which an Israeli shot Islamic followers in a mosque) manipulated exemplars in terms of the proportions of action-endorsing interviews versus action-denouncing interviews (Gan et al., 1996). Three versions of the report were created. One condition contained all pro-action testimonials. Another condition featured the condemnation of the killing. The final condition included both endorsing and condemning positions. Respondents were asked to indicate the perceptions of the prospect of peace in the Middle East. According to the findings, estimates of perceived opinions varied with exposure to different exemplar distributions.

In summary, the aforementioned research evidence suggests that aggregations of exemplars differing in relevant characteristics foster the perception of social reality in which “the proportions of the distribution of relevant characteristics are approximately represented” (Zillmann, 2002, p. 29). This phenomenon can be explained by the quantification heuristic. It is possible that people code the relative incidence of exemplars with particular characteristics and retain information about this quantification in memory. Consequently, representative exemplar-biased exemplar ratios exert a disproportional impact on the perception of the incidence of occurrences in the population under consideration. Moreover, such exemplar aggregations can also influence personal opinion and preference.

Effects of qualitatively distinct exemplar aggregations. The news media often select a few exemplars from the extreme side of issues in efforts to enhance the dramatic, sensational value of reporting (Shoemaker & Reese, 1996; Zillmann & Brosius, 2000). The selection of atypical exemplars that are extraordinary and unusual affects the representativeness of case descriptions in news reports and potentially fosters misperceptions of the addressed issues (Zillmann & Brosius, 2000). Instead of focusing on the representation of exemplars in terms of their quantitative distributions, Gibson and Zillmann (1994) studied the consequences of the qualitative misrepresentation in exemplar aggregations. These scholars used a magazine report on carjacking to manipulate four levels of exemplar distortion (minimally, mildly, substantially, and extremely). The four conditions were created by taking two exemplars from different victim categories (no injury, minor injury, severe injury, death) corresponding to minimal, minor, severe, and deadly violence associated with carjacking. In each condition, base-rate information about the relative frequency of occurrences involving the four violence categories was kept constant. Respondents were queried on their perceptions of carjacking and estimates of the incidence of carjacking involving injury and death. The group given the extreme version of qualitatively distorted exemplars (exemplification of two cases of death) considered carjacking to be a greater threat to the nation than did those assigned to minimal, mild, or substantial exemplar distortion conditions. Exposure to exemplars of deadly violence led to overestimates of the rate of fatalities from carjacking. Irrespective of corrective base-rate data, respondents based their perception of the issue on the selected exemplars.

The effect of qualitatively distorted exemplification can be explained by the representativeness and availability heuristics. People process information in a simplified form and base their conclusions on a few selected case descriptions. Due to their salience and

vividness, extraordinary cases stand out and are more likely to be retrieved from memory when judgments are made.

Effects of exemplifying accompaniments. The employment of additional items is a widely adopted strategy to augment news presentations and engage audiences. However, the content of attention-grabbing elements potentially carries exemplifying information that pulls attention away from the focal point of the report. When processing news, consumers may rely on such vivid stimuli as shortcuts to avoid a thorough scrutiny of complex and abstract information. Consequently, the selection of single spectacular cases in the enhanced content may convey extra-focal messages, which in turn, influence evaluation of the issues discussed in the news stories.

Extending exemplification research to the effects of extra-focal accompaniments, Zillmann et al. (1994) investigated the impact of newscast-closing upbeat stories on the perceived severity of the issues presented in hard-news reports. The authors manipulated a newscast of four bad-news items such that it ended with a humorous item, with a human-interest item, or without an additional item. They found that the newscast-closing upbeat story led respondents to believe the issues as less severe.

Subsequent studies focused on the effect of visual elements, particularly photographs. Zillmann, Gibson, and Sargent (1999) tested the impact of including photographs in news magazine reports about the economics of farming and safety at amusement parks. Respondents read the reports either with no photograph, a photograph projecting one side of the issue (poor farmers, safe fun on coaster rides), the other side of the issue (rich farmers, dangerous accidents at parks), or two photographs representing both sides of the issue (rich and poor farmers, safe fun and accidents at parks). According to the results, adding the

images to the news content created a shift in evaluations of the reported issues. Specifically, the one-sided employment of innocuous images distorted the perception of farming economics in the direction suggested by the photographs. Exposure to the danger-projecting image featuring accidents also resulted in biased assessment of park safety. Meanwhile, the balanced use of photographs representing both sides of the issues did not lead to distortions in evaluations. In a related study, Gibson and Zillmann (2000) investigated the consequences of the incidental placement of pictorial exemplars into the news text. A news report about a fictitious Appalachian disease spread by ticks was differently illustrated. Six conditions were created. The story either contained no images, images of two ticks, or images of the ticks plus two White and one Black child victims, images of the ticks plus three White child victims, or images of the ticks plus three Black child victims. The news content was verbally identical, and it made no references to the victims' ethnicity or race. After exposure to the manipulated article, respondents were queried on their perception of the danger of the new disease, especially the risk estimation for children of different ethnic groups. The results were straightforward. The employment of the tick images and the combination of ticks and victim images led respondent to assess the risk of contracting the disease as higher. More importantly, pictorial representation of a particular ethnic group shifted the relative estimation of risk for that group, despite the fact that the news story said nothing about ethnicity being a risk factor for the disease.

In an experiment conducted by Gibson, Hester, and Stewart (2001), the inclusion of graphic elements in news stories was tested with pull quotes. The authors examined to what degree pullout quotes could influence readers' perceptions of the issues addressed in news reports. Four versions of a story about the benefits and risks of using aspirin as a preventive

measure for angina were created. While the news content was identical, the employment of pull quotes varied across the four conditions. The article featured either with no extracted quotes, with a pro-aspirin extracted quote, with an anti-aspirin extracted quote, or with both pro-aspirin and anti-aspirin extracted quotes. As suggested by the findings, partiality in extracted quotes led respondents to lean to a certain side of the arguments, regardless of the two-sided information presented in the news text.

Gibson, Smith, and Hester (2008) expanded on this line of research by examining whether the incidental inclusion of in-text plus pictorial exemplars could influence generalizations of controversial issues with which people might have previously held beliefs. They manipulated a news report about the housing market to create conditions differing in proportion of sources that were gay or lesbian and number of photographs of gay and lesbian couples. Though the study found no evidence of the relationship between exposure to gay and lesbian sources and attitude toward homosexuality, it did show that the combined use of both photographic and in-text gay/lesbian exemplars heightened estimation of the percentage of gays and lesbians in the housing market and the U.S. population.

Overall, the documented impact of exemplifying accompaniments (i.e., additional exemplars) can be explained by the availability and representativeness heuristics. The vivid display of compelling, enhanced elements draws disproportional attention to them and away from the focal information presented in news stories. These enhancements avail themselves more readily than the text and are more likely to be stored in memory. For that reason, people are likely to base their evaluation of the addressed issues on the content of additional exemplars. Exemplifying information in such accompaniments can be considered a basal

form of representation that places fewer demands on information processing and subsequent formation of judgment (Zillmann, 2002).

Multimedia accompaniments as extra-text exemplars. In the online news environment, multimedia elements such as graphics, photographs, audio, and video are largely used as extra-text enhancements. News producers tend to add multimedia to augment the textual content and engage online audiences by giving them some interesting flavor of a story (Dimitrova & Neznanski, 2006). In many cases, multimedia accompaniments serve as “grabbers” that focus the attention of news consumers on single spectacular cases. Arguably, the multimedia content incorporated into news presentations can convey additional information. In other words, multimedia additions potentially act as extra-text exemplars. It can be hypothesized that the textual content of online news provides base-rate information and in-text case descriptions that support the focal contention of a story. Meanwhile, multimedia enhancements carry extra-focal information that is anecdotal in nature and possibly devoid of quantified precision.

Based on a wealth of empirical evidence discussed earlier, it is clear that representative or unrepresentative information reinforced in news exemplars strongly influences how people perceive issues under consideration. Adding extra-text exemplars to the news content generates exemplification effects. Partiality in such additional exemplars potentially biases issue perception regardless of what is reported in the main text. Applied to online news, a similar phenomenon is expected to take place. The vividness and concreteness of the multimedia content make it more likely to be processed, stored, and retrieved from memory. As such, multimedia accompaniments may create shortcuts for the processing of information and the formation of judgment. The representation of the whole of the reported

issues by multimedia enhancements affects the accuracy of subsequent evaluation.

Exemplifying information reinforced in the multimedia content potentially shifts issue perception away from the focal information provided in the text. Consequently, the way multimedia exemplify issues (i.e., representation) will immediately impact judgments irrespective what is reported in the textual content. Thus, the following hypothesis is proposed:

H1: *Multimedia representation will affect immediate response such that issue perception will vary in the direction suggested by the multimedia content regardless of the textual content.*

Put another way, respondents will rely on the way multimedia additions represent issues to form their issue perception, even when the main text is verbally identical across all conditions. In testing this hypothesis, the author sought to demonstrate that a) multimedia enhancements can act as additional exemplars, and b) multimedia representation can have an immediate impact on issue perception.

Exemplification with Passage of Time

The extant literature has examined exemplification effects in tandem with the time factor. The availability heuristic emphasizes enduring accessibility of relevant cognition in memory and its implications for the duration of exemplar influence on social judgment (Zillmann, 1999; Zillmann & Brosius, 2000). Although the influence of both base-rate information and exemplars may eventually diminish, retention of concrete cases extends for longer periods than that of abstract information and thus the impact of case descriptions is presumed to fade less rapidly (Zillmann, 2002). Whereas base-rate information loses its influence rather fast, exemplifying information retains its impact, which comes to dominate the fading effect of base-rate data. Therefore, it is increasingly likely that exemplars avail

themselves from memory and eventually impose their unopposed influence on judgment with the passage of time (Zillmann, 2002, 2006).

Experimental research has documented both short-term and long-term effects of exemplars. In an early study, Zillmann, Perkins, and Sundar (1992) varied the time of issue assessment after exposure to different exemplar distributions. In the immediate condition, respondents were queried shortly after reading a manipulated report on weight regaining. In the delayed condition, issue perception was assessed two weeks after reading the article. The findings suggest that the short-term effects of exemplification materialized in the presence of base-rate information, but they diminished due to prior beliefs associated with the reported issue. Brosius and Bathelt (1994) also examined the relative effects of exemplar aggregations linked with the time of perception assessment. The effects were immediately observed and remained unchanged for a week after exposure. Extending research on the duration of exemplar influence to an issue for which prior beliefs were not established (i.e., the economics of farming), Zillmann et al. (1996) tested the lasting, stable effect of exemplar distributions with a two-week delay in assessment. According to the results, perception created by exemplification persisted for a two-week period. These scholars concluded exemplification effects are likely to be prolonged if an issue is not associated with well-defined prior beliefs. In situations where well-defined prior beliefs exist, effects are likely to be short-lived. The duration of exemplification effects, therefore, is contingent on disposition.

Along a similar line, Gibson and Zillmann (1994) examined the relative effects of exemplar distortion with the passage of time. They created exemplars differing in qualitative misrepresentation of the crime of carjacking. Respondents' assessment was measured either immediately after exposure or after a one-week delay. As suggested in the findings, exemplar

influence of judgment not only remained over time, but also increased. This sleeper effect was explained as a consequence of exemplification that involves spectacular occurrences. Such compelling exemplars, though highly unrepresentative, stick in memory and grow in their impact, whereas the recall of base-rate information fades and increasingly loses its influence.

The enduring effect of additional exemplars was also documented in a study of pictorial exemplification (Zillmann, Gibson, & Sargent, 1999). The manipulation of two news reports (farming economics and safety at amusement parks) involved pictorial representation of the addressed issues. Time-of-effect assessment was varied as immediate or ten days after exposure. According to the results, the use of pictorial exemplars in the safety story produced stable effects over a 10-day period. Furthermore, the impact of pictorial representation on perceptions of farming economics exerted itself after some passage of time, thereby creating “sleeper effects.” This phenomenon can be explained by the availability heuristic along with some other theoretical frameworks. The information presented in text-image admixtures tends to combine and fuse with the passage of time (Grimes, 1990; Grimes & Drechsel, 1996). In what is termed the “translation phenomenon,” pictures are remembered as words and vice versa (Grimes, 1990). In a study of picture-word integration, Pezdek (1977) found that the information from a sentence describing an item and that of an image of that same item with an important modification could merge over time. For example, when the sentence “The bird was perched atop the tree” is presented, followed by a picture of an eagle atop a tree, people tend to believe the sentence to have been “The eagle was perched atop the tree.” Extending this research to television news, Grimes (1990) incorporated a textual sentence about daters’ concealing their vices with an image of a student with a gin

bottle in his back pocket. Two days after exposure to such a text-image combination, respondents recalled the text as stating that daters concealed their alcoholism, among other vices. According to dual-coding theory (Paivio, 1986), text and image are independently stored but they are strongly interconnected. Representational integration is thought to be automatic and dominated by images with the passage of time. Therefore, it is conceivable that pictorial exemplification is likely to generate “sleeper effects” in which images increase their dominance in issue perception over time.

In summary, exemplar influence on judgment is not short-lived. The effect has been shown to persist up to two weeks, especially when people do not have deeply held beliefs about the addressed issues. On occasion, the effect even grows with the passage of time. The long-term influence of pictorial exemplification indicates that adding extra-text exemplars is likely to affect the interpretation of text over time. These findings can be related to the present investigation. In the context of online news, multimedia enhancements potentially act as additional exemplars. It is reasonable to predict that that multimedia exemplification amounts to pictorial exemplification. Due to their vivid nature, extra-text enhancements are more likely to be stored in memory and avail themselves over an extended period of time. Meanwhile, the pallid nature of the text makes its influence fade more rapidly. Therefore, multimedia accompaniments trigger the operation of the availability heuristic and impose their dominant impact with the passage of time. Thus, it is conceivable that the effect of multimedia representation on issue perception will remain stable, if not increase, as evidenced through delayed response. The following hypothesis is presented:

H2: *The impact of multimedia representation on the perception of issues addressed in the accompanying stories will persist, even grow over time.*

More specifically, this prediction suggests that respondents are most likely to retain the exemplifying information reinforced in multimedia enhancements and use that information to judge when being asked to express their perception in days after exposure to the stimuli. It is expected that the effect of multimedia representation on delayed response is comparable, if not stronger, to that on immediate response. In testing this hypothesis, the author sought to assess the duration of multimedia exemplification.

Modality

Overview

Persuasion scholars believe that modality affects the way people process information (Eagly & Chaiken, 1993; Todorov, Chaiken & Henderson, 2002). It is assumed that more complex modalities consume greater cognitive resources, thereby disrupting and constraining systematic consideration of message content (i.e., systematic processing). Consequently, stimulus-rich modalities can lead individuals to resort to a limited mode of information processing that requires less cognitive effort. In this mode (i.e., heuristic processing) individuals are most likely to rely on expedient shortcuts. The additional stimuli in the more complex modalities can pull attention away from the focal point of the message and toward heuristic information (Chaiken & Eagly, 1983; Eagly & Chaiken, 1993; Todorov, Chaiken, & Henderson, 2002).

Applying these rationales to exemplification research, it can be argued that the operation of heuristics can be driven by the modality of exemplifying information. In other words, modality can serve as a moderating variable in exemplification. This proposition is useful because it potentially helps elaborate the explanation of exemplification effects as a

function of the vividness of exemplars. Exemplification theory hypothesizes that case descriptions, due to their vividness, trigger heuristic processing. Research, however, has been unable to show that more vivid exemplars could generate stronger exemplification effects, leading to the speculation that vividness is not a measurable aspect of the stimulus (Brosius, 2003). Meanwhile, research on vividness effects and human-computer interaction indicates that vividness can be expressed in terms of modality or the way information is presented across perceptual channels (Coupey & Sandgathe, 2000; Steuer, 1992). The operationalization of vividness as modality, therefore, provides an alternative, testable means to explore the specific role of vividness in exemplification. The following subsections summarize various conceptualizations of modality, delineate theoretical frameworks pertaining to modality effects, outline the linkage between modality and vividness, and elaborate on the role of modality as an exemplification moderator.

Concept Explication

Scholars have adopted a variety of classification systems to study modality. Despite the bulk of the literature, decades of modality research have resulted in often contradictory conclusions (Kalyanaraman & Ivory, 2009; Lang, 1995). Discrepancies in empirical findings may start with a lack of consensus among researchers on how modality is defined. Various conceptual meanings have been assigned to modality, and different operational definitions have been used.

Modality as medium. Research in persuasion often confounds modality with medium of transmission. For example, Chaiken and Eagly (1976, 1983) studied persuasion as a function of written, audio-taped, and video-taped messages and demonstrated the advantage of video-taped and audio-taped modalities over the written modality. This definition of

modality was also adopted in dual-process research (Booth-Butterfield & Gutowski, 1993; Ziegler, Argonold, & Diehl, 2007). Other persuasion scholars classified media in terms of sensory systems that are stimulated. Jacoby, Hoyer, and Zimmer (1983), for instance, considered print as a visual-only medium, radio as an audio-only medium, and television as an audiovisual medium. Similar conceptualizations were used by Furham and Gunther (1989) and Unnava, Burnkrant, and Erevelles (1994).

In mass communication research, modality is often understood as mass media channel. DeFleur et al. (1992) studied audience recall of news stories presented by newspaper, radio, television, and computer. In political communication, Pfau and associates (Pfau, 1990; Pfau et al., 2006, Moy & Pfau, 2000) categorized modalities as information channels such as newspaper, news magazine, local television news, network television news, television news magazine, entertainment talk show, political talk show, televised spot advertising, public address communication, and interpersonal communication.

Modality as sensory mode. Research in the areas of communication and psychology tends to focus on presentation modes that correspond to human sensory systems. Modality is often operationalized in terms of auditory and visual channels and combinations of different inputs between or within these channels. According to Penney (1989), people encode modality-specific content and modality characteristics play a key role in that process. Specifically, auditory information is rich and durable, therefore, better recalled than visual information. Penney (1989) also proposed the separate-stream hypothesis, demonstrating the advantage of mixed modality over single modality. In this view, verbal information presented auditorily and visually is processed separately. Therefore, attention can be easier distributed between two modalities (1 visual, 1 auditory) than between two single modalities (2 visual, 2

auditory). Highly relevant to the separate-stream hypothesis are the notions of the split-attention effect (Chandler & Sweller, 1992; Sweller et al., 1990; Sweller, van Merriënboer & Paas, 1998) and the working memory (Baddley, 1992), which also emphasize the advantage of a dual mode over a single mode.

Modality as communication mode. Research in organizational communication and computer-mediated communication (CMC) examines modality as communication platform. Exchanges can occur by various means. Modalities have been categorized as broadly as types of communication (e.g., conversation vs. written communication) or as narrowly as specific communication modes (face-to-face, video conference, telephone, email, distributed document). According to Ramirez and Burgoon (2004), modality refers to the array of visual, audio, verbal, and contextual sources a communication format provides. CMC research examines the unique and joint contributions of various verbal and nonverbal components that determine the richness of multimodal interfaces. The extant literature often utilizes media richness (Daft & Lengel, 1984, 1986) to study modality effects. This theory focuses on cues ranging from verbal (text) to nonverbal (audio, video) and predicts that the more nonverbal cues communicators have, the more positive the interaction.

Modality as code. As the use of the Web technology grows, the conceptual deliberation of modality is expanded. Researchers in the domains of online communication and computer-human interaction have attempted to define modality in terms of both sensory and cognitive systems. According to Kalyanaraman and colleagues (Kalyanaraman & Ivory, 2009; Kalyanaraman & Sundar, 2008; Sundar, Kalyanaraman & Jones, 2000), modality is the equivalent of code as studied in cognitive psychology. Codes, or sensory-based traces, refer to the information stored as a result of sensory and perceptual processing of a message

(Penney, 1989). Assigning this conceptual meaning to modality, these scholars argued that dual coding theory (Paivio, 1986) could be utilized to study the underlying differences between verbal and nonverbal systems linked with auditory and visual systems. This theory states that each cognitive system (verbal and nonverbal) combines visual, auditory, and other sensory components of information (Paivio, 1986). The multimedia learning literature also outlines modality-specific verbal and nonverbal components in multimedia instructions. According to Mayer (1997, 2001), learners have dual information processing channels of visual and verbal conduits to guide the educational development pathways.

Modality and multimedia. The Web's capability to present content in different formats and combinations of formats is often described as multimedia functionality. The term implies multimodal and multichannel transmitting as well as multisensory processing of information (Marmolin, 1991 as cited in Hoogeveen, 1997). Hoogeveen (1997) has defined multimedia as a "property of a system or object, indicating that multiple perceptual representation media, such as speech, music, text, graphic, still, animation, and video, are used in an integrated manner" (p. 151).

When studying modality within the Internet medium, it is useful to adopt the conceptualization of modality as code, or modality-specific nonverbal and verbal components of information (Kalyanaraman & Ivory, 2009; Kalyanaraman & Sundar, 2008; Sundar, Kalyanaraman, & Jones, 2000). At the operational level, online communication researchers have equated modalities with multimedia features that are present in the Web medium. Kiouisis (2006), for instance, defined modality as the use of text, graphics, sound, and video on a single communication platform when studying multimedia effects on perceived credibility of online news. He manipulated three levels of modality, using text-only

version of news (without multimedia accompaniment) for the low condition, text and pictures (adding a photo gallery) for the moderate condition, and text, pictures, and video (in the form of a video player) for the high condition. Sundar (2000) examined effects on memory and perception as a function of the relative contribution of each specific multimedia element and of particular combinations of various multimedia components (text-only, text plus picture, text plus audio, text plus picture plus audio, text plus picture plus video). Along a similar line, Rockwell and Singleton (2007) tested differential effects of modality of presentation on information acquisition by combining streaming multimedia in an additive manner (text-only, text-audio, text-audio-video), using redundant and synchronized content.

Overall, modality is a structural characteristic of media in general and a unique feature of the Web medium in particular (Kalyanaraman & Sundar, 2008). Several researchers have correlated modality with vividness (Appiah, 2006; Coyle & Thorson, 2001; Steuer, 1992) and interactivity (Burgoon et al., 2002; Kiouisi, 2006; Massey & Levy, 1999; Ramirez & Burgoon, 2004; Stromer-Galley, 2000). In the context of multimedia presentations, modality is perceived by the user in the form of text, graphics (picture, animation), audio, video and various combinations between these formats. As an independent variable, modality can be measured at least on an ordinal scale. Levels of modality can be manipulated as low, moderate, and high (Kiouisis, 2006) or single, dual, and triple (Rockwell & Singleton, 2006; Sundar, 2000).

Modality Effects

Previous research provides a variety of insights into the effects of modality of presentation on information processing. As empirical findings in this literature are somewhat inconclusive, two different perspectives have been offered to demonstrate modality

differences on outcome variables pertaining to memory and perception. One approach emphasizes the benefits of increased modality. The other focuses on the limitations of multimodal presentations (Lang, 2000; Leigh, 1991; Salomon, 1984; Wickens, 1984). It is beyond the scope of the present study to provide an exhaustive review of this impressively complex literature. Instead, the following discussion summarizes some of the important theoretical frameworks to explain why additional modalities could lead to greater impact on audience reactions.

The literature about modality differences and short-term memory demonstrates that messages presented in mixed modality are more memorable than those presented in a single modality. The basic premise behind theories such as the separate-stream hypothesis (Penney, 1989), the split-attention effect (Chandler & Sweller, 1992; Sweller et al., 1990; Sweller, van Merriënboer & Paas, 1998), and the working memory model (Baddeley, 1992) is that using dual mode instead of a single mode for information processing reduces the processing workload, because the available resources (i.e., memory, attention) are distributed across both channels (auditory and visual). Therefore, the simultaneous transmission of redundant information that stimulates more sensory systems enhances the performance of the working memory.

Modality effects research in the context of mediated communication tends to explore richness as a characteristic of a communication medium. Media richness theory (Daft & Lengel, 1984, 1986) proposes that richer media – those with the ability to transmit more nonverbal cues for developing meaning– are superior to text-based media, especially because their information provides substantial new understanding. According to this hypothesis, rich media allow joint combinations of various verbal and nonverbal modalities (channels) upon

which people rely to contextualize messages. Leaner modality formats with reductions in social cues oversimplify complex topics and restrain the exchange of sufficient information that contributes to understanding. Therefore, the use of rich media enabling multimodal communication is recommended when conveying messages, because that helps remove ambiguities. Low level of richness in a medium that is stripped down to the transmission of text information only may reduce the quality of communication.

The assumptions about dual code processing provide a strong explanation for the advantages of increased modality. Dual coding theory (Paivio, 1986) argues that two cognitive systems are used independently to process information. One system specializes in dealing with verbal information (text, audio), whereas the other processes nonverbal information (pictures, moving images, and sounds). In other words, memory consists of modality-specific verbal and nonverbal components which can be retrieved separately. The underlying premise of this theoretical framework is that delivering information to both systems creates more cognitive pathways, thereby allowing for easier retrieval from memory. Thus, multiple modalities of presentation are expected to enhance learning. Recent research on dual code processing indicates that cognitive abilities can be optimized when verbal information is supported by appropriate, non-redundant visual information (see Rockwell & Singleton, 2007 for a review). By presenting congruent information simultaneously through separate channels, information retention improves. This is also true when nonverbal information presented via multiple channels reinforces the information presented in the verbal channel.

Taken together, these theoretical frameworks suggest that information vividly presented in rich, multimodal formats has a better chance of “getting across.” Empirical

studies have been conducted to demonstrate the advantages of using multimodality to transmit redundant or congruent content in a synchronized fashion.

In the context of computer-human interaction, Street and Manning (1997) suggested that multimedia additions foster positive attitudes toward a system. The dynamic presence of multimedia is believed to facilitate greater involvement and engagement among users.

Although the positive affective effect of multimedia was not well documented in an early study of online news (Sundar, 2000), more research on both news and commercial sites found that greater use of modality could lead to favorable perceptions of a Web site (Appiah, 2006; Coyle & Thorson, 2001; Lee et al., 2004; Li, Daugherty & Biocca, 2003). This dissertation uses these findings to explore differences in perception of a news site as a function of multimedia enhancements. As such, the following is predicted:

H3: *Greater use of modality in multimedia enhancements will elicit higher levels of positive perceptions toward the Web site.*

The purpose of this hypothesis test is twofold. First, the current undertaking explores whether the affective effect of multimedia enhancement is additive, thereby providing new evidence of modality effects in the Web environment. Second, it is important to demonstrate that using multimedia additions (i.e., additional exemplars) to embellish the text could foster positive impressions among online news users. This proposition not only has practical implications. It also helps make the case for the argument that greater use of modality in extra-text exemplars (i.e., multimedia accompaniments) increases their appeal, leading people to rely on them as shortcuts in processing online information and forming perception. Details about the role of exemplar modality in exemplification will be elaborated later.

Modality-Induced Vividness

Much of the research on different media, characterized by different types and combinations of modalities, has been guided by assumptions about vividness effects (Chaiken & Eagly, 1983; Edell & Staelin, 1983; Frey & Eagly, 1993; Kisielius & Sternthal, 1984). Nisbett and Ross (1980) stipulated that vivid content could attract and hold people's attention and excite the imagination. Vivid information is emotionally interesting, personally relevant, imagery-provoking, and sensory immediate, thereby having memorial and persuasive advantages over pallid information. Although empirical data on vividness effects are mixed (Smith & Shaffer, 2000; Taylor & Thompson, 1982), the dominant conviction seems to suggest that increasing the vividness of information leads to greater impact on outcome variables such as attention, memory, and persuasion (Appiah, 2006).

Various techniques have been developed to generate vividness (Smith & Shaffer, 2000), but experimental studies typically involve comparisons between modalities to determine effects of message vividness (Coupey & Sandgathe, 2000). In the domain of media technologies, Steuer (1992) defined vividness as the representational richness of a mediated environment or "the way in which an environment presents information to the senses" (p. 81). Thus, vividness depends on two primary variables: sensory breadth and sensory depth. Sensory breadth is defined by the number of sensory dimensions simultaneously presented, whereas sensory depth refers to the quality of the sensory information available in each perceptual channel. As one or both of the two dimensions increase, vividness increases. In the case of sensory breadth, the engagement of multiple perceptual systems serves to enhance vividness (Steuer, 1992). In other words, presenting information through more modalities makes it more vivid.

Online advertising research often operationalizes vividness in terms of different types and combinations of multimedia features on Web sites. Appiah (2006), for instance, manipulated the modality of testimonial ads (audio/video vs. text/picture vs. no testimonial ads) to determine the effects of vivid communication. Coyle and Thorson (2001) used multimedia additions such as embedded audio and animation to vary the sensory breadth dimension of vividness. Essentially, this line of research tends to treat the modality of multimedia additions as the determinant of vividness in the Web environment. Applying this rationale to the present study, it is expected that embellishing the text with multimedia accompaniments that engage more perceptual channels (i.e., modalities) could increase the richness of users' experience, thereby increasing perceived vividness. The following hypothesis is presented:

H4: *Greater use of modality in multimedia enhancements will elicit higher levels of vividness as perceived by users interacting with online news reports.*

In demonstrating that adding modality to extra-text exemplars will increase their vividness, the present study proposed a new, more robust method to manipulate exemplar vividness. The operationalization of vividness strictly in terms of modality provides a useful means to examine whether and how exemplar vividness may contribute to the magnitude of exemplification effects.

Modality as Exemplification Moderator

As already noted, exemplification theory argues that the operation of the availability heuristic is often expressed in terms of the vividness of information (Zillmann & Brosius, 2000). Vividness, a factor contributing to selective attention and its judgmental consequences, is considered an important theoretical concept for the explanation of exemplification effects

(Brosius, 2003). It is conceivable to expect that vividness potentially moderates exemplar influence (Zillmann, 2002).

The extant literature has tested the hypothesis that adding vividness to exemplars could enhance their impact. Exemplar vividness has been manipulated in different ways. Some studies operationalized vividness in terms of exemplar language but found no appreciable effects (either simple or interaction) on issue perception (Baesler & Burgoon, 1994; Brosius & Bathelt, 1994). Meanwhile, Gibson and Zillmann (1993, 1998) examined citation as exemplar enhancement, showing that vividness expressed in terms of the form of testimonials (direct vs. indirect quotes) could produce reliable effects. Experiments involving the display of pictorial exemplars reported that adding vivid images to news stories could shift issue perception away from the textual content and toward the image content (Gibson & Zillmann, 2000; Zillmann, Gibson & Sargent, 1999; Zillmann & Gan, 1996). These findings are somewhat contradictory, leading to an assertion that vividness –an immeasurable aspect of the stimulus– could hardly provide the direct explanation of exemplification effects (Brosius, 2003).

As discussed earlier, the operationalization of vividness in terms of presentational format may provide a new opportunity to better understand whether and how the vivid nature of exemplars moderates exemplification. This study focused exclusively on the modality of multimedia enhancements as a means to manipulate exemplar vividness. More specifically, compelling case descriptions in the form of pull quotes (text), photographs (picture), and video with sound (video) were combined in an additive manner (text-only, text+picture, text+picture+video). These multimedia exemplars were completely anecdotal and devoid of

numbers or other forms of base-rate data. The news text provided both base-rate data and in-text exemplars that support the focal point of a story.

It can be assumed that increasing modality in extra-text exemplars (i.e., multimedia accompaniments) would progressively shift issue perception away from the focal point of the textual content and toward the extra-focal information conveyed by the multimedia content. This hypothesis is informed by empirical data on pictorial exemplification and multimedia effects. The findings in both lines of research, whether explicitly or implicitly, suggest that adding non-redundant, multimodal information to a text-based report may lead to distraction, thereby preventing a careful consideration of the focal information in the textual content (Gibson & Zillmann, 2000; Gibson, Smith, & Hester, 2008; Sundar, 2000; Sundar, Kalyanaraman, & Jones, 2000; Zillmann, Gibson, & Sargent, 1999). Extra-text exemplars (i.e., multimedia enhancements) presented in multiple modalities are attentionally favored and, therefore, the specific information that they reinforce is more likely to influence issue perception regardless of what is reported in the text. Thus, the following hypothesis is advanced:

H5: *There will be an interaction between multimedia representation and modality use on immediate response such that the higher the modality, the stronger the effect of representation on issue perception.*

For example, a combined use of pull quote, picture, and video reinforcing the negative side of the reported issues will immediately generate more negative perception than will an adoption of a single negative pull quote. Conversely, highly enhanced multimedia (pull quote+picture+video) exemplifying the positive side of the addressed issues will immediately produce more positive perception than will a single positive extracted quote. In

other words, greater use of modality will act to enhance the biasing effect of extra-text exemplars.

Although the interplay of exemplar representation and exemplar modality may manifest immediately, it is interesting to explore whether this interaction may also exhibit over an extended period of time. Pictorial exemplification research indicates that the supplementation of different types of images in text-based news induces differential effects in relation to time. Threatening images were shown to produce enduring impacts on issue perception, while innocuous images fostered an absolute sleeper effect (Zillmann, Gibson, & Sargent, 1999). While the incidental use of image exemplars that add non-redundant information to the news content was found to have short-term effects, its long-term impact remain to be demonstrated (Gibson & Zillmann, 2000). In the context of human-computer interaction and computer-mediated communication, Kalyanaraman and Sundar (2008) have suggested that modality effects would be pronounced at the time of initial impressions but such effects would taper over time. Empirical research has not yet tested this prediction. Therefore, it is the purpose of this study to examine how representation and modality in multimedia exemplars interact in influencing issue perception with the passage of time. The following research question is proposed:

RQ: *Will the interaction effect of multimedia representation and modality use on issue perception remain stable, increase, or decrease over time?*

This research question was addressed by examining responses to the stimuli in days after exposure. The author first looked at evidence of the interaction effect in all delayed measures of issue perception. Then, the magnitude of delayed effects was compared to that of

immediate effects. This analysis sought to assess the duration of exemplar influence as moderated by exemplar modality.

Additional Hypotheses

It has been frequently observed in exemplification research that participants failed to detect biases in exemplars (Gibson, Hester, & Stewart, 2001; Gibson & Zillmann, 1994, 1998; Zillmann et al., 1999). Despite the inclusion of spectacular and highly atypical case descriptions in news reports, they never questioned the accuracy of such information or evaluated the quality of the news content less favorably. In other words, distorted exemplars can go undetected and foster misperceptions of the addressed issues without being recognized. Based on previous findings, it is reasonable to predict that respondents will remain oblivious to the presence of misrepresentations or distortions in multimedia enhancements (i.e., extra-text exemplars). Therefore, perceptions of the news content, the Web site, and news credibility will not vary as a function of partiality in multimedia representation. Thus, the following predictions are proposed:

H6a: *Partiality in multimedia representation will not affect evaluations of the quality of story content.*

H6b: *Partiality in multimedia representation will not affect perceptions of the Web site or its credibility.*

The results in these hypothesis tests may corroborate earlier findings, reminding journalists and news organizations of a careful consideration of using vivid multimedia presentations to enhance text-based news content.

CHAPTER 3

METHOD

Design Overview

To test the hypotheses and to answer the research question as outlined in Chapter 2, this study employed a 3x3x2 mixed factorial design (post-test only) with exemplar representation (one side, other side, both sides) and exemplar modality (low, moderate, high) serving as two between-subjects factors, and time of response (immediate, delayed) as a within-subjects factor. This design has allows for testing interaction among factors. Such a relationship is difficult to detect if several simple randomized experiments are conducted (Keppel & Wickens, 2004; Pedhazur & Schmelkin, 1991). Post-test only procedure improves external validity because it does not sensitize subjects (Keppel & Wickens, 2004).

The experiment involved two sessions. The first session focused on immediate effects (i.e., immediate response after exposure), whereas the second session addressed enduring effects (i.e., response with 10 to 14 days in delay). An equal number of participants was randomly assigned to each condition. Eighteen versions of “The Global Journalist,” a fictitious news site, were created for this study. Layout and the text of the site were identical across conditions except for the manipulations of multimedia additions.

Participants

A convenience sample of 180 students from the research participant pool in the School of Journalism and Mass Communication, University of North Carolina at Chapel Hill

was recruited for the project. The students agreed to participate in the experiments in exchange for class credit and signed an informed consent form prior to their participation. The majority of the participants were female (78.3%) and the sample was primarily Caucasian (78.8%) with the mean age of 20.36 years ($SD = 1.22$). A student sample is appropriate for the study, because that may help eliminate novelty effects. Students are the most active group online, and therefore, effects of treatment can be demonstrated more clearly. The participants reported that on an average day they spend 3.81 hours online ($SD = 1.67$). The sample size of 180 is sufficient for the $3 \times 3 \times 2$ mixed-measures factorial design. A power analysis showed that the saturated model among between-subjects contrasts has a power of 70% to detect an effect size of .8. For the marginal main effect model, the effect size is .46. By the Cohen's standard, this effect size is between small and medium (Cohen, 1988).

Stimulus Materials

Eighteen versions of a fictitious news site, "The Global Journalist," were especially created for use in the study. The site featured a homepage with title logo, navigation bar, commercial ads, and headlines of three news stories (see Appendix B). Each report contained a headline, byline, date line, news text, and extra-text enhancements in the form of pull quotes, pictures, and videos (i.e., multimedia exemplars) predetermined by condition. The full-page version of each news report could be accessed by clicking on its headline. Each story was rendered navigable through a scroll bar on the right-hand side.

Since this dissertation examined exemplification effects in the context of foreign news, all stories on the site focused on international issues. Zillmann and associates (Zillmann, 1999; Zillmann & Brosius, 2000; Zillmann et al., 1994) have argued that when

people have little knowledge of and almost no previous opinion about relevant happenings, news information serves as a surrogate for their personal contact and has a great influence on how they perceive the reported issues. This may also be true with international news and its effects on our mental pictures of the world (Galtung & Ruge, 1965; Wanta, Golan, & Lee, 2004; Wu, 2003). It was found that news exemplars not only affect audience perceptions of international issues (Gan et al., 1996), but also dictate U.S. foreign policy (Zillmann, 1997 as cited in Zillmann & Brosius, 2000).

The three stories on the site were selected on the basis that they were not time-sensitive or of particular local or community interest. The first story, “Peace Paths, War Paths in Mindanao,” provided a mixed picture of the threat of all-out war and the prospect for peace between the Philippine government and the Muslim separatist Moro Islamic Liberation Front (see Appendix B.I.1). The second story, “Poll Shows Snapshot of African Psyche,” reported both challenges and opportunities for development in Africa (see Appendix B.II.1). The third story, “Rich Nations Agree on Gas Emissions Cuts,” dealt with a declaration by the Group of 8 to move toward a low-carbon society (see Appendix B.III.1). The “Emissions” report served as disguise. Only the “Africa” and “Mindanao” stories were manipulated. The “Mindanao” report involved emotional events (i.e., war/conflict), whereas the “Africa” story was devoid of emotion-evoking characteristics (i.e., development). This selection was intended to control for the confounding effects of emotion on participants’ response. Zillmann and colleagues (Aust & Zillmann, 1996; Zillmann, 2002, 2006; Zillmann & Brosius, 2000; Zillmann, Gibson, & Sargent, 1999) have noted that emotion may serve to mediate exemplification effects. Moreover, the presentation order of the manipulated stories was rotated within each condition to control for order effects. Research in psychology has shown

that stimuli in the bookend positions are more influential in memory-based evaluations (Burke & Srull, 1988; Dean, 1980; Haugtvedt & Wegener, 1994). The homepage presented the reports in order Mindanao-Africa-Emissions (from top down) or Africa-Mindanao-Emissions. This strategy was adopted from an earlier study conducted by Zillmann, Gibson, and Sargent (1999).

The stimuli were created by integrating various news articles from the mainstream media and other visual and audiovisual materials available on the Web. Several facts and story details were altered. The information in the byline and dateline of the reports was fictitious. The textual content of each story was one-page long (650- 700 words). Pull quotes were displayed in color, bold letters, five lines or less. They were placed dominantly right under the headline of each report. Color photographs were clearly visible on the upper-right frame of the space known as “above the scroll” (i.e., Web’s equivalent of “above the fold” in newspaper design). In conditions with video as part of multimedia manipulations, there was one video (86-99 seconds) per story that could be accessed by clicking on the play button. The video was placed in the right-hand side of the story page, below the pictorial display.

The two manipulated stories (“Africa” and “Mindanao”) presented the issues in a two-sided fashion (see Appendix B.I.1 and Appendix B.II.1). More specifically, the “Africa” story featured a patchwork of gains and setbacks in Africa’s struggle for development. The “Mindanao” story provided mixed signs of optimism and pessimism in the Mindanao peace process. The textual content of each story was verbally identical across all conditions. Only the extra-text exemplars adding specific information to the textual content of the two reports were manipulated in terms of issue representation and modality (see Appendix B.I, items 2-5 and Appendix B.II, items 2-5). In order to test the effect of modality on perceived vividness

(i.e., hypothesis 4), the disguise story about “Emissions” also contained multimedia additions predetermined by modality condition. However, issue representation in these multimedia elements was not manipulated (see Appendix B.III, items 2-3).

All versions of the news site were created to look as similar as possible to avoid any incidental confounds. Manipulations were made such that participants would access the assigned stories with multimedia exemplars predetermined by condition.

Exemplar Variations

Issue representation. Although the textual content of each manipulated story was two-sided (see Appendix A.I.1, B.I.1), the multimedia content had three versions. The first version provided information exemplifying one side of the discussed issues (i.e., negative side). The second version presented information exemplifying the issues’ other side (i.e., positive side). Finally, the third version exemplified both sides of the issues. Representation by multimedia accompaniments (i.e., extra-text exemplars) to the “Mindanao” news text was manipulated such that one condition only reinforced the threat of all-out war, another stressed the prospect for peace, and the remaining condition provided mixed accounts of the peace process (see Appendix B.I, items 2-5). Likewise, multimedia enhancements in the “Africa” story exemplified either challenges, opportunities, or mixed evaluations of development in Africa (see Appendix B.II, items 2-5). The manipulation of issue representation in multimedia exemplars followed the procedure employed by Zillmann, Gibson, and Sargent (1999) in pictorial exemplification research.

Modality. The manipulation of presentational format in multimedia accompaniments (i.e., extra-text exemplars) employed Kiouisis’ (2006) operationalization of modality on an ordinal scale (low, moderate, high) expressed in terms of modality-specific verbal and

nonverbal components in multimedia enhancements (Kalyanaraman & Sundar, 2008; Mayer, 1997, 2001; Sundar, 2000; Sundar, Kalyanaraman, & Jones, 2000). The low-modality condition (text-only) contained a pull quote that adds specific information to the report. For example, the low-modality version of exemplars emphasizing challenges in Africa would include a pull quote that says, “In Africa, average citizens have not seen a significant improvement in their living condition” (see Appendix B.II.2a). The moderate-modality condition (text+picture) featured a pull quote and a pictorial display conveying congruent, non-redundant information about the reported issues. For instance, the moderate-modality version of exemplars exemplifying the prospect for peace in Mindanao would comprise a pull quote that says, “There is no alternative to peace. We are confident it (peace) will happen,” and a photograph of children waving peace signs (see Appendix B.I, item 3b). The high-modality condition (text+picture+video) included a pull quote, a pictorial display, and a video that share and reinforce a certain perspective on the issue addressed in the news text. For example, the high-modality version of exemplars stressing challenges in Africa would feature a pull quote that says, “In Africa, average citizens have not seen a significant improvement in their living condition,” a picture of poor and sad-looking African women and children, and a video emphasizing extreme poverty, mismanagement, and underdevelopment (see Appendix B.II, item 4a). No base-rate data were included in the exemplars (see Appendix B.I, item 5; B.II, item 5).

Dependent Variables

Issue perception. Three issue perception measures were used: assessments of consequences of the addressed issues, inferences about the future of the issues, and estimates

of the magnitude of the issues.¹ These instruments have been tested and validated in several studies on news exemplification and effects of extra-focal accompaniments in news presentation (Gibson & Zillmann, 1993, 1994, 1998, 2000; Zillmann, Gibson, & Sargent, 1999; Zillmann et al., 1994, 1996). Since this study probed issue perception at two different points in time (immediate and delayed), there were six issue perception variables in total (i.e., immediate assessments, delayed assessments, immediate inferences, delayed inferences, immediate estimates, and delayed estimates.). Meanwhile, the author used the same scales to measure immediate and delayed responses.

To examine assessments of the reported issues, participants used nine-point Likert scales anchored by “strongly agree” (1) and “strongly disagree” (9) to respond to the following descriptions: 1) African development: (a) runs into deadlock; (b) makes a breakthrough; (c) is unachievable; (d) is achievable; (e) is hopeless; (f) is hopeful (see Appendix C, Study Questionnaire I, Part II, question 2); 2) In Mindanao: (a) the peace process is dead; (b) the peace process is well and alive; (c) the conflict is unsolvable; (d) the conflict is solvable; (e) the current situation is hopeless (f) the current situation is hopeful (see Appendix C, Study Questionnaire I, Part I, question 2).

To index inferences about the future of the reported issues, participants used nine-point scales with (1) being “not at all likely” and (9) being “most likely” to answer the following questions: 1) Ten years from now Africa will: a) face a complete failure in development; b) enter a new era of growth and development; c) fall further behind the rest of the world; d) catch up with the rest of the world (see Appendix C, Study Questionnaire I, Part II, questions 3) ; 2) In the next two years: a) the Mindanao conflict will get worse; b) will end

¹ Only responses indicating perceptions of the Africa and Mindanao issues were used as dependent variables in this study. Questions regarding the emissions issue served as disguise and were not used to measure perceptions.

with a peaceful solution; c) tension in Mindanao will escalate; d) will die down (see Appendix C, Study Questionnaire I, Part I, questions 3).

To measure estimates of the magnitude of issues, participants used 100-point scales (i.e., percentage) to answer the following questions about the issues presented in the manipulated stories: 1) “How do you personally feel about development in Africa?”; (a) “Of all the population in Africa, what percent would you estimate are living in extreme poverty and powerlessness?” (b) “Of all countries in Africa, in what percentage of the cases do you estimate has improved their living condition in the last 10 years?”; (c) “Of all African nations, what percent would you estimate are getting deeper in trouble?” (see Appendix C, Study Questionnaire I, Part II, question 1); 2) “How do you personally feel about the Mindanao conflict in the Philippines?” (a) “Considering unfolding events, what is the possibility of Mindanao facing all-out war?” (b) “Given developments since the 1996 cease-fire, what is the chance of the two sides getting back to the peace process?” (c) “Of all steps taken by both sides this month, what percent do you estimate are triggering more confrontation between the government and the Muslim Moros?” (See Appendix C, Study Questionnaire I, Part I, question 1).

Perceived vividness. Two main questionnaire items were used to assess perceived vividness in the Web environment. The first item was adapted from Smith and Shaffer (2000) to gauge participants’ overall impressions of multimedia enhancements on the Web site with (1) being “not at all vivid” and (9) being “extremely vivid” (see Appendix C, Study Questionnaire I, Part I, question 6). The second item was adapted from Fortin and Dholakia (2005), asking participants to use a nine-point scale anchored by “strongly disagree” (1) and

“strongly agree” (9) to respond to the following statement: “I could perceive a lot of dynamism on this Web site” (see Appendix C, Study Questionnaire I, Part I, question 8a).

Apart from these two items, a six-item nine-point, semantic differential scale with pairs of adjectives at the endpoints (Graphic/Plain; Lively/Lifeless; Vibrant/Dull; Dynamic/Static; Colorful/Colorless; Energetic/Flat) and two additional items were introduced to validate the measurement used in previous studies (see Appendix C, Study Questionnaire I, Part I, questions 7 and 8b-c).

Site perception. Two site perception measures were used: attitudes toward the Web site and behavioral intentions.

To measure attitudes toward the Web site, participants used an eleven-item nine-point Likert scale anchored by “very poor” and “very well” to indicate how well eleven adjectives describe the news site (Appealing, Useful, Positive, Good, Favorable, Attractive, Exciting, Pleasing, Likeable, High quality, Interesting) (see Appendix C, Study Questionnaire I, Part I, question 9). These items were adapted from Kalyanaraman and Sundar (2006).

Behavioral intentions were measured by a nine-point Likert scale to indicate participants’ degree of agreement or disagreement with the two items (“It is very likely that I will return to this site”; “I will return to this site the next time I need information about what is happening in the world”) (see Appendix C, Study Questionnaire I, Part I, question 11). In addition, a nine-point Likert item anchored by “absolutely” and “absolutely not” was used to measure responses to the following question: “Suppose that a friend called you last night to get your advice on his/her search for information about nations of the world. Would you recommend him/her to visit this news site?” (see Appendix C, Questionnaire I, Part I,

question 12). The instruments were adopted from Coyle and Thorson's (2001) study of Web marketing sites.

Perceived news credibility. Using a thirteen-item nine-point, semantic differential scale, participants indicated their perceptions of the credibility of the news site (see Appendix C, Study Questionnaire I, Part I, question 10). Pairs of adjectives at the endpoints were compiled and validated by Gaziano and McGrath (1986) and Meyer (1988) (True/False; Believable/Unbelievable; Probable/Improbable; Realistic/Unrealistic; Right/Wrong; Honest/Dishonest; Sincere/Insincere; Inaccurate/Accurate; Biased/Unbiased; Superficial/Profound; Untrustworthy/Trustworthy; Unreliable/Reliable; Nonexpert/Expert).

Content evaluation. Participants were presented with eight adjectives and asked to use a nine-point scale with (1) being "describes very poorly" and (9) being "describes very well" to indicate how each of the adjectives describes the content quality of each story² (see Appendix C, Study Questionnaire I, Part I, question 13). These measures were adapted from questionnaire items developed by Sundar and Nass (Sundar, 2000; Sundar & Nass, 2001).

Control Variables

Participants were screened for their knowledge of international affairs by two scaled questions anchored between "strongly agree" and "strongly disagree" (see Appendix C, Study Questionnaire I, Part I, question 14). Familiarity with the issues addressed in the news reports was measured by a two-item, nine-point scale with (1) indicating "strongly agree" and (7) indicating "strongly disagree" (see Appendix C, Study Questionnaire I, Part I, questions 15-16). Direct contact with countries/regions mentioned in the news stories was assessed by three questionnaire items (see Appendix C, Study Questionnaire I, Part I,

² Only responses to the Africa and Mindanao stories were directly relevant to the research purpose. The emissions story served as disguise and, therefore, evaluations of its quality were not analyzed.

questions 21-23). In addition to these measures, the questionnaire also asked participants to report their Internet use, age, gender, and race (see Appendix C, Study Questionnaire I, Part I, questions 17-20).

Procedure

This experiment included two separate parts with a 10-to-14-day delay. The first part lasted between 40 and 45 minutes. The second part lasted between five and ten minutes. The experimental sessions took place in computer labs in the School of Journalism and Mass Communication, University of North Carolina at Chapel Hill. Each session included between four to 18 participants.

Upon arrival for the initial part, participants were greeted by the experimenter and asked to sign their names on a sign-in roster. Each participant was then randomly assigned a computer terminal. While being seated, participants were asked not to use the computer until further notice. When all participants have arrived, the experimenter asked them to read carefully and sign an informed consent form to participate in a two-part experiment (see Appendix D). The experimenter then described the study as an evaluation of online news about international issues. Participants was asked not to visit other Web sites, navigate off the study pages, or check email during the course of the session. Participants were told to view the three stories on the homepage by clicking on their headlines in the order as they appeared. They were asked to access any available multimedia accompaniments on the story pages. They were told to carefully view story pages only and not to click on other tabs. The experimenter explained to them that due to time constraint all links on the site had been disabled, except for the default functions that would allow evaluations of certain technical aspects of “The Global Journalist” Web site. After accessing the three stories, participants

turned off the computer screen and completed a paper-and-pencil questionnaire. Half of the participants were queried on their perceptions of the Mindanao conflict as well as the emissions issue reported in the disguise story. The other half of participants were asked to indicate their perceptions of development in Africa and the emissions issue addressed in the disguise story. In addition, participants were queried on their experience with the news site, including perceived vividness, perceptions toward the site, content evaluation. Participants were also be asked about knowledge of international affairs, familiarity with the issues reported by “The Global Journalist,” direct contact with countries/regions mentioned in the stories. They were asked to report their Internet use, age, gender, and race. Participants were also allowed to note down any additional comments regarding the Web site, its content, issues addressed in the stories, or the study itself. Upon completion of the first part of the study, the experimenter thanked the participants and reminded them coming back for the second part of the study.

In the second session that followed the first after 10 to 14 days, participants responded to questions concerning the issue that they have not been queried about in the previous session. Upon completion of the second session, participants were debriefed, thanked, and dismissed.

Data Analysis

Data were analyzed using SPSS 12.0 statistical package and employing reliability analysis and principal components analysis (PCA) for scale validation; analysis of variance (ANOVA) for manipulation check and hypothesis testing with respect to modality effects; multivariate analysis of variance and covariance (MANOVA and MANCOVA) combined with discriminant function analysis (DISCRIM) and ANOVA for tests of the study’s main

hypotheses (main effects of representation, interaction effects of representation and modality); MANOVA for tests of additional hypotheses. Prior to analysis, the data were screened for accuracy of data entry, missing values, and fit between data distributions and assumptions underlying each analysis. Post-hoc test was conducted for each significant main analysis. In order to verify the results, each procedure was repeated with the inclusion of deleted data (if applicable).

CHAPTER 4

RESULTS

Manipulation Check

Before administering the experiment, a pretest was conducted to ascertain the both-sided nature of the textual content and the effectiveness of representation manipulations in the multimedia content (i.e., extra-text exemplars). Twenty undergraduate students were recruited and randomly assigned to one of three conditions: negative multimedia, positive multimedia, or mixed multimedia accompanying each news text (i.e., African development and Mindanao conflict). The textual content of each story was identical across all conditions. After accessing the stories, participants used two nine-point items to rate how balanced each news text was (see Appendix C, Pretest Questionnaire I, questions 1 and 3). The items were averaged to create two indices: Text_{AF} (Cronbach's $\alpha = .81$; $r = .704$, $p < .001$) and Text_{MI} (Cronbach's $\alpha = .70$; $r = .578$, $p < .001$). To gauge the effectiveness of representation manipulations, participants used a nine-point scale to evaluate each multimedia accompaniment (pull quote, pictorial display, video) and combinations of various multimedia additions (pull quote+pictorial display; pull quote+pictorial display+video) as compared to the content of each news text (see Appendix C, Pretest Questionnaire I, questions 2 and 4).

The results of the pretest were straightforward. Participants found the textual content of both stories relatively balanced. On a nine-point scale, the mean for Text_{AF} (overall agreement that the news text discussed both sides of the African issue) and Text_{MI} (overall

agreement that news text presented both sides of the Mindanao issue) was 6.6 and 6.8, respectively. Two one-way ANOVAs further confirmed that participants across all conditions did not differ in their evaluations of the textual content of either the Africa story, $F(2, 17) = .26, p = .773$; or the Mindanao story, $F(2, 17) = 1.76, p = .202$.

A series of one-way ANOVAs documented significant effects of the manipulation of representation on responses to each exemplar and every combination of exemplars. Groups were significantly different in their assessments of multimedia accompanying the Africa story (see Table 1). Group differences were also found in reactions to multimedia enhancements in the Mindanao story (see Table 3). Tukey follow-up tests revealed pairwise differences among the means (see Table 2 and 4). In both stories, each and every combination of negative exemplars was rated as more negative than either mixed or positive exemplars. Conversely, all positive exemplars and their combinations were judged as more positive than either mixed or negative exemplars. According to the findings, the manipulation of representation in the multimedia content proved to be successful.

Measurement Validation

Multi-item scales were averaged to form composite indices. Reverse-coded items were transformed before being collapsed. Table 5 provides descriptive statistics of these measures and other variables analyzed in this study.

Issue perception measures consist of immediate and delayed assessments of the issues (Assessment_{Immediate}, Cronbach's $\alpha = .81$; Assessment_{Delayed}, Cronbach's $\alpha = .78$); immediate and delayed inferences about the future of the issues (Inference_{Immediate}, Cronbach's $\alpha = .86$; Inference_{Delayed}, Cronbach's $\alpha = .86$); and immediate and delayed estimates of the magnitude of the issues (Estimate_{Immediate}, Cronbach's $\alpha = .47$; Estimate_{Delayed}, Cronbach's $\alpha = .33$).

Since the reliability of two indices of estimates was too low, they were excluded from the analysis.

Two site perception measures, attitudes toward the Web site ($\text{Attitudes}_{\text{Site}}$, Cronbach's $\alpha = .94$) and behavioral intentions ($\text{Intentions}_{\text{Site}}$, Cronbach's $\alpha = .85$), collapsed well and were retained for use. The 13-item index measuring perceived news credibility (Credibility) was reliable with a Cronbach's α of .95. Content evaluation indices were constructed for both Africa ($\text{Content}_{\text{AF}}$) and Mindanao ($\text{Content}_{\text{MI}}$) stories and yielded the Cronbach's α of .96 and .95, respectively. Because of the similarities between perceived news credibility and content evaluation, PCAs with varimax rotation were conducted to ensure the items were measuring two distinct constructs. The credibility and Africa story evaluation scales yielded two eigenvalues greater than 1, explaining 70.8% of the variance in the data. Similarly, two components were extracted from the credibility and Mindanao story evaluation items, contributing 69.4% of the explained variance. In both cases, the items intended to measure perceived credibility loaded on one component, while the other items measuring story evaluation loaded on the second component.

Perceived vividness index (Vividness), constructed from two items used in previous research (Fortin & Dholakia, 2005; Smith & Shaffer, 2000), yielded a Cronbach's α of .72 ($r = .57, p < .001$). In an attempt to develop a better scale for perceived vividness, the author introduced eight additional items and performed a PCA to see if they could be combined with the readily available measurement. The results revealed two components with eigenvalues greater than 1, accounting for 76.9% of the variance in the data. The two items adapted from Smith and Shaffer (2000) and Fortin and Dholakia (2005) loaded on both components.

Additional items were not collapsed and, therefore, they were excluded. No new index was formed and only the original two-item scale was retained for analysis.

Two items gauging international knowledge were averaged to form the Knowledge index and two items measuring familiarity with the African and Mindanao issues were combined to create the Familiarity score. These composite measures were judged to be sufficiently reliable.

Tests of Hypotheses

H1: Immediate effect of representation on issue perception. Representation by the multimedia content (ie., exemplar representation) was a single factor with three categories (1 = one side; 2 = other side; 3 = both sides). The dependent variables were immediate assessments ($\text{Assessment}_{\text{Immediate}}$) and immediate inferences ($\text{Inference}_{\text{Immediate}}$) with higher scores reflecting more negative perceptions. One-way MANOVA was conducted because the dependent variables were assumed to correlate. The MANOVA was followed up with DISCRIM and Tukey's post-hoc test. This technique has several advantages over multiple univariate ANOVAs in controlling for both Type I and Type II error rates (Tabachnick & Fidell, 2001).

Overall, the assumptions underlying MANOVA were met. There were no missing data. All values were within range for the variables. Skewness and leptokurtosis were present in one group (other side) Sample sizes were sufficiently large and approximately equal in the three groups to assume multivariate normality of the sampling distribution of means. Based on Mahalanobis Distance with $p < .001$, one multivariate within-cell outlier was found and deleted. No problem of linearity or multicollinearity was found with the data. Levene's test was not significant on $\text{Assessment}_{\text{Immediate}}$, but significant on $\text{Inference}_{\text{Immediate}}$. The Box's M

test was not significant, confirming homogeneity of variance-covariance matrices. Table 6 provides the univariate descriptive statistics of the three groups.

The analysis was based on 179 cases. Significant differences were found among the groups on the two dependent measures, Pillai's Trace = .103, $F(4, 352) = 4.79$, $p = .001$. Subsequently, a dimension reduction analysis was performed to examine the linear composites of the two outcome variables. The first discriminant function had an eigenvalue of .12 (explaining 100% of the variance in the data) and a canonical correlation of .32, while the second function yielded a zero eigenvalue and a canonical correlation of .001. The overall Wilk's Λ was significant, $\Lambda = .90$, $\chi^2(4, N = 179) = 19.12$, $p = .001$, while the residual Wilk's Λ was not significant ($p = .987$). Thus, differences existed among the groups on the first linear composite, but not on the second. According to Table 7, Assessment_{Immediate} had a strong, positive relationship with the first composite, while Inference_{Immediate} demonstrating a weaker, positive relationship with this function. On the other hand, the second composite weighed on Inference_{Immediate} more heavily, while having a weaker, negative relationship with Assessment_{Immediate}.

To further investigate the nature of this multivariate effect, raw canonical coefficients were used to compute two variates for Tukey's follow-up test. The variates were formed by the following formula:

$$\text{LDF1} = (.757 * \text{Assessment}_{\text{Immediate}}) + (.232 * \text{Inference}_{\text{Immediate}})$$

$$\text{LDF2} = (-.653 * \text{Assessment}_{\text{Immediate}}) + (.724 * \text{Inference}_{\text{Immediate}})$$

Post-hoc analysis (reported in Table 8) further showed that participants in the "One side" group had significantly higher scores than the "Other side" and "Both sides" groups on the first linear function with a mean difference of .823 and .457, respectively. The pairwise

comparison between the “other side” and “both sides” groups for the first linear function was not significant. There were no significant differences for the second variate (see Figure 1). In other words, representation by multimedia (exemplar representation) had an immediate effect on issue perception and this effect was most pronounced in participants’ assessments of consequences of reported issues.

In order to verify the findings, MANOVA and follow-up tests were repeated with all 180 cases, including the multivariate outlier that had been previously deleted. The results remained consistent. Thus, H1 was partially supported.

H2: Enduring effect of representation on issue perception. Representation by the multimedia content (exemplar representation) was the independent variable with three categories. The dependent variables were delayed assessments (Assessment_{Delayed}) and delayed inferences (Inference_{Delayed}) with higher scores reflecting more negative perceptions.

The data had a good fit with the assumptions of MANOVA. There were no missing data. All values were within range for the variables. Skewness and kurtosis were present, but not extreme. There was no univariate or multivariate outlier, using Mahalanobis Distance with $p < .001$. No problem of linearity or multicollinearity was found with the data. Both Levene’s and Box’s M tests were not significant, confirming homogeneity of variance-covariance matrices. Table 9 provides univariate descriptive statistics of the three groups.

One-way MANOVA did not find significant differences among the groups on the two dependent measures, Pillai’s Trace = .01, $F(4, 354) = .452$, $p = .771$. Using the split file function in SPSS, an additional MANOVA was run to see if the groups differed in their delayed responses to either the Africa or Mindanao story. The analysis yielded non-significant results. No further follow-up was conducted. According to the findings,

multimedia representation did not impact participants' delayed assessments of consequences or inferences about the futures of reported issues. Thus, H2 was not supported.

H3: Main effect of modality on site perception. Modality in extra-text accompaniments (i.e., multimedia enhancements) was a single factor with three levels (1 = low; 2 = moderate; 3 = high). The dependent variables were attitudes toward the Web site (Attitudes_{Site}) and behavioral intentions (Intentions_{Site}) with higher scores reflecting more positive perceptions. Because the dependent variables were assumed to correlate, one-way MANOVA was conducted.

Overall, the data met assumptions for the MANOVA and no data transformations were necessary. Table 10 provides the univariate descriptive statistics of the three groups. One case with missing data on Intentions_{Site} was detected in the high-modality group and it was not included in the analysis. All values were within range for the variables. Skewness and kurtosis were present, but not extreme. With 179 cases, sample sizes were large and approximately equal in the three groups to assume multivariate normality of the sampling distribution of means. There was no extreme univariate or multivariate outlier, using Mahalanobis Distance with $p < .001$. No problem of linearity or multicollinearity was found with the data. Both Levene's and Box's M tests were not significant, confirming homogeneity of variance-covariance matrices.

Significant differences were found among the three groups on the two dependent measures, Pillai's Trace = .22, $F(4, 352) = 10.69$, $p < .001$. Subsequently, a DISCRIM was conducted to examine the linear composites of the two outcome variables. The first discriminant function had an eigenvalue of .28 (explaining 99.6% of the variance in the data) and a canonical correlation of .46, while the second function yielded an eigenvalue of .001

and a canonical correlation of .03. The overall Wilk's Λ was significant, $\Lambda = .78$, $\chi^2(4, N = 179) = 42.83$, $p < .001$, while the residual Wilk's Λ was not significant ($p = .665$). According to the results, differences existed among the groups on the first linear composite, but not on the second. As suggested by Table 11, the first composite weighed on Attitudes_{Site} more heavily, while having a weaker relationship with Intentions_{Site}. Conversely, the second composite demonstrated a strong, positive relationship with Intentions_{Site}, while having a much weaker relationship with Attitudes_{Site}.

To better understand the nature of this multivariate effect, raw canonical coefficients were used to create two variates for post-hoc test. The variates were computed by the following formula:

$$\text{LDF1} = (.829 * \text{Attitudes}_{\text{Site}}) + (-.170 * \text{Intentions}_{\text{Site}})$$

$$\text{LDF2} = (-.319 * \text{Attitudes}_{\text{Site}}) + (.669 * \text{Intentions}_{\text{Site}})$$

Tukey's follow-up test (reported in Table 12) examined pairwise differences among the means and found that participants in the low-modality condition scored significantly lower than those in the moderate-modality and high-modality conditions on the first variate. The pairwise comparison between the moderate-modality and high-modality groups for the first linear function was not significant. No significant differences in group means were found on the second variate. According to Figure 2, greater use of modality in extra-text enhancements (i.e., multimedia accompaniments) induced higher levels of positive perception and this effect was observed most clearly in attitudes toward the Web site.

In order to verify the findings, a one-way MANCOVA was conducted to examine if the main effect of modality on perception of the site would remain constant, when some other sources of influences (i.e., age, race, gender, Internet use) on the dependent variables were

taken into account. SPSS found one case with a missing value on a covariate and automatically excluded it from the analysis. The MANCOVA was significant, Pillai's Trace = .22, $F(4, 342) = 10.58$, $p < .001$, suggesting that the main effect of modality on the combined dependent variables was robust. The results of MANOVA, post-hoc test, and MANCOVA provided partial support for H3.

H4: Main effect of modality on perceived vividness. Modality used in extra-text accompaniments (i.e., multimedia enhancements) was a single factor with three levels. The dependent variable was perceived vividness with higher scores indicating higher levels of vividness. A one-way ANOVA was conducted to evaluate the relationship between modality used in extra-text enhancements and vividness perceived by participants.

The analysis was conducted with 180 cases. Descriptive statistics on the dependent variable for the three groups were presented in Table 13. Overall, the requirements for ANOVA were satisfactorily met. Participants were randomly sampled from young online audiences and the scores on the dependent variable were independent of each other. There were no missing data. All values were within range for the variable. For the most part, scores on the dependent variable were normally distributed in each group. One group (low) had a skewness ratio above the ± 3 criterion. However, ANOVA is a relatively robust test with large sample sizes (Field, 2009). With equal sample sizes in each condition, the distributions of errors within the groups were assumed to have equal variances. The Levene's test was not significant, confirming homogeneity of variance.

The ANOVA was significant, $F(2,177) = 53.904$, $p < .001$. The strength of relationship between modality and perceived vividness, as assessed by partial η^2 , was quite strong, with the modality factor accounting for 38% of the variance of the dependent variable.

The results of Tukey's HSD post-hoc test were straightforward. Significant differences in the means existed between all three groups. Greater use of modality in multimedia accompaniment led to higher level of perceived vividness (see Figure 3). The pairwise differences in means, as well as p values, for the three modality groups were reported in Table 14.

To further verify the results, a one-way ANCOVA was conducted to see if the main effect of modality on perceived vividness would remain significant after controlling for demographic variables (i.e., age, race, gender) and Internet use. One case had a missing value on a covariate and SPSS automatically excluded it from the analysis. The ANCOVA was significant, $F(2, 172) = 56.307$, $MSE = 1.98$, partial $\eta^2 = .40$, indicating that modality impacted perceived vividness, while other possible influences being held constant. According to the results of ANOVA, post-hoc test, and ANCOVA, strong support was found for H4.

H5: Interaction of representation and modality: Immediate effect on issue perception. Multimedia representation (i.e., exemplar representation) and modality use (i.e., exemplar modality) were two factors with three levels of representation and three levels of modality. The dependent variables were immediate assessments ($Assessment_{Immediate}$) and immediate inferences ($Inference_{Immediate}$). Issue familiarity, international knowledge, foreign travel, direct contact³ with countries/regions mentioned in the reports, gender, race, age, and Internet use served as covariates. A factorial MANCOVA, followed up with post-hoc test, was performed to evaluate the effects of three representation conditions and modality uses on two dependent variables. The purpose of this analysis was twofold. First, the author explored the interaction between representation and modality in inducing effects on the outcome variables.

³ In the questionnaire, two items were used for direct contact (travel to Africa and travel to the Philippines). However, only one participant in this study reported to have had direct contact with the Philippines. Therefore, only responses to the "travel to Africa" question were included in the analysis.

Second, by taking covariates into account, the MANCOVA served to further verify the main effect of representation as indicated in H1 results.

Table 15 provided descriptive statistics for each group in the 3x3 factorial design. Overall, the data met assumptions for the MANCOVA and no data transformations were made. No missing data were found on the dependent variables. One group (one side-low modality) had a skewness ratio (skewness/standard error) and kurtosis ratio (kurtosis/standard error) above the ± 3 criterion. Sample sizes were medium and approximately equal in the nine groups to assume multivariate normality of the sampling distribution of means. There was no extreme univariate or multivariate outlier, using Mahalanobis Distance with $p < .001$. No problem of linearity or multicollinearity was found. The assumption of homogeneity of regression was satisfactorily met with non-significant F test on the interaction between the independent variable and the covariates. The covariates were judged to be sufficiently reliable. One case had a missing value on some covariates and SPSS automatically excluded it from the analysis. Levene's test was not significant on $\text{Assessment}_{\text{Immediate}}$, but significant on $\text{Inference}_{\text{Immediate}}$. The Box's M test was not significant, confirming homogeneity of variance-covariance matrices.

The MANCOVA was conducted on 179 cases. The results showed a significant main effect for representation, Pillai's Trace = .13, $F(4, 324) = 5.42$, $p < .001$; a non-significant effect for modality, Pillai's Trace = .007, $F(4, 324) = .27$, $p = .894$; and a significant interaction between representation and modality, Pillai's Trace = .096, $F(8, 324) = 2.03$, $p = .042$. With the covariates being held constant, the main effect of representation on the combined dependent variables remained robust. Because the interaction between representation and modality was significant, follow-up tests focused on simple main effects

for both factors. To explore the multivariate effects, raw and standardized canonical coefficients were manually computed by the syntax command in SPSS. As indicated in Table 16, the first function weighed $\text{Assessment}_{\text{Immediate}}$ most heavily, while the second function demonstrated a stronger relationship with $\text{Inference}_{\text{Immediate}}$. Using the raw canonical coefficients, two linear composites were generated for follow-up tests:

$$\text{LDF1} = (.753 * \text{Assessment}_{\text{Immediate}}) + (.233 * \text{Inference}_{\text{Immediate}})$$

$$\text{LDF2} = (-.586 * \text{Assessment}_{\text{Immediate}}) + (.706 * \text{Inference}_{\text{Immediate}})$$

Factorial ANOVAs, conducted on the two variates, showed a significant main effect of representation, $F(2,171) = 9.002, p < .01$, and a significant interaction effect of representation and modality on the first linear composite (LDF1), $F(4,171) = 2.992, p = .02$, while yielding non-significant results on the second linear composite (LDF2). Pairwise comparisons evaluated differences among the means and found some significant results (see Tables 17 and 18). For those assigned to the “one side” (negative) and “other side” (positive) groups, the manipulation of modality as high or low led to different responses (see Figure 4) within each group. As suggested by Figure 5, in the high-modality condition (pull quote+picture+video), negative exemplars (one side) led to more negative responses than either positive (other side) or mixed (both sides) exemplars. In the moderate-modality condition (pull quote+picture), the manipulation of exemplars as either negative or positive exemplars induced different responses. In the low-modality condition, issue representation in multimedia exemplars did not generate different responses among groups. Figure 6 showed appreciable differences due to the use of high modality and moderate modality across all representation groups as opposed to a null effect of representation in low-modality exemplars. These findings were significant at the .05 level. A more conservative standard can be set to

control for Type I error. With alpha of .05 and using the Bonferroni approach for post-hoc analysis, significant differences were found in the high-modality condition between the “One side” group with either the “other side” group or the “both sides” group.

Taken together, the results of MANCOVA and follow-up tests suggested that the impact of partiality in exemplars was more consequential when they were presented in rich modality. In addition, the interaction effect of representation and modality was only observed in participants’ immediate assessments of the consequences of the reported issues. Thus, H5 was partially supported.

RQ: Interaction of representation and modality: Enduring effect on issue perception.

A 3x3 factorial MANCOVA, followed up with post- hoc test, was conducted on two dependent variables, namely delayed assessments (Assessment_{Delayed}) and delayed inferences (Inference_{Delayed}). The purpose of the analysis was to examine the effects of exemplar representation and exemplar modality on the outcome variables. Eight covariates (i.e., issue familiarity, international knowledge, foreign travel, direct contact with Africa, gender, race, age, and Internet us) were included in the analysis.

All assumptions for the MANCOVA were satisfactorily met and no data transformations were necessary. No missing data were found on the dependent variables. All values were within range for the variables. Skewness and kurtosis were present, but not extreme. Descriptive statistics for each group were presented in Table 19. Sample sizes were medium and approximately equal in the nine groups to assume multivariate normality of the sampling distribution of means. There was no extreme univariate or multivariate outlier, using Mahalanobis Distance with $p < .001$. No problem of linearity or multicollinearity was found. The assumption of homogeneity of regression was met with non-significant F test on

the interaction between the independent variable and the covariates. The covariates were judged to be sufficiently reliable. One case had missing data on some covariates and SPSS automatically excluded it from the analysis. Both Levene's and Box's M tests were not significant, confirming homogeneity of variance-covariance matrices.

The 3x3 factorial MANCOVA was performed on 179 cases. The analysis did not find significant main effects for either representation, Pillai's Trace = .022, $F(4, 324) = .902$, $p = .463$, or modality, Pillai's Trace = .007, $F(4, 324) = .27$, $p = .898$. No significant interaction was detected between representation and modality, Pillai's Trace = .074, $F(8, 324) = 1.56$, $p = .136$. No further test was conducted. According to the results, effects of representation as well as its interaction with modality as seen in immediate responses did not persist over an extended period of time. Several participants reported they did not recall much information about the reported issues when responding to the questionnaire in the second study session.

H6a: Null effect of representation on content evaluation. A one-way MANOVA was conducted with multimedia representation (i.e., exemplar representation) serving as a single factor with three categories. The dependent variables were content evaluation of the Africa story (Content_{AF}) and content evaluation of Mindanao (Content_{MI}) with higher scores indicating more positive responses. The purpose of the analysis was to examine whether participants could detect misrepresentations in the multimedia content (i.e., extra-text exemplars), thereby evaluating the story content less favorably.

Overall, the data met the assumptions underlying MANOVA. Table 20 provides the univariate descriptive statistics of the three groups. There were no missing data. All values were within range for the variables. One group (both sides) had a skewness ratio and a kurtosis well beyond the ± 3 criterion. Sample sizes were sufficiently large and equal in the

three groups to assume multivariate normality of the sampling distribution of means. Based on Mahalanobis Distance with $p < .001$, one multivariate within-cell outlier was found and deleted. No problem of linearity or multicollinearity was detected. Both Levene's and Box's M test were not significant, confirming homogeneity of variance-covariance matrices.

One-way MANOVA, conducted on 179 cases, did not find significant differences among the groups on the two outcome variables, Pillai's Trace = .034, $F(4, 352) = 1.523$, $p = .195$. In order to verify the results, the MANOVA was repeated with the outlier that had been deleted. The null effect of representation remained consistent, Pillai's Trace = .036, $F(4, 354) = 1.637$, $p = .164$. Participants did not appear to notice partiality in multimedia accompaniments (i.e., extra-text exemplars) and their evaluations of the content of both stories were not significantly different across conditions. Thus, H6a was fully supported.

H6b: Null effect of representation on site perception and perceived credibility. To investigate whether participants could detect misrepresentations embedded in multimedia enhancements (i.e., extra-text exemplars), thereby perceiving the news site as less favorable or less credible, a one-way MANOVA was performed on three outcome variables: attitudes toward the Web site (Attitudes_{Site}), behavioral Intentions (Intentions_{Site}), and perceived news credibility (Credibility). Multimedia representation (i.e., exemplar representation) served as the independent variable.

Data screening indicated a good fit between the data and the assumptions of MANOVA. One case with missing data on Credibility and Intentions_{Site} was excluded from the analysis. All values were within range for the variables (see Table 21). One group (both sides) had a skewness ratios and a kurtosis ratio well above the ± 3 criterion. Sample sizes were large and approximately equal in the three groups to assume multivariate normality of

the sampling distribution of means. Based on Mahalanobis Distance with $p < .001$, one multivariate within-cell outlier was found and deleted. There was no problem with linearity or multicollinearity. Both Levene's and Box's M tests were not significant, confirming homogeneity of variance-covariance matrices.

The MANOVA was performed on 178 cases. No significant differences were found among the groups on the three outcome measures, Pillai's Trace = .017, $F(6, 348) = 4.9$, $p = .816$. In order to verify the results, one-way MANOVA was repeated with 179 cases, including the outlier. Again, responses with respect to Attitudes_{Site}, Intentions_{Site}, and Credibility did not vary as a function of representation manipulations. In other words, participants did not seem to detect or question distortions embedded in the multimedia content (i.e., extra-text exemplars). Therefore, H6b received strong support.

Summary of Findings

Having tested with the data in different ways, this analysis found partial support for H1, H3, H5 and full support for H4, H6a, and H6b. The results did not support H2 and the data provided some tentative evidence to answer the study question. Table 22 provides a summary of the study findings.

First, as indicated in the findings, multimedia representation (i.e., exemplar representation) had a main effect on immediate assessments of consequences. Extra-text exemplars loaded with negativity immediately led to more negative assessments than either positive or mixed exemplars did. However, this effect did not seem to be an enduring one. Delayed assessments of consequences were not significantly different among the groups. In addition, the impact of representation was not exhibited in either immediate or delayed responses regarding inferences about the future of the reported issues.

Second, there existed a significant interaction effect of representation and modality on immediate assessments of consequences. Modality, as predicted, worked in concert with representation in generating exemplification effects. Modality-rich exemplars biased responses. Heavy multimedia content (i.e., high-modality exemplars) exemplifying negativity induced more negative assessments of consequences than did highly enhanced multimedia carrying either positive or mixed exemplars. This interaction effect was not observed in participants' inferences about the future of the reported issues. Moreover, the interplay of representation and modality did not show an impact on delayed assessments or delayed inferences. Thus, there was no concrete evidence of an enduring effect of this interaction.

Third, modality use in extra-text enhancements (i.e., multimedia accompaniments) did influence respondents' perceptions of vividness and the effect was additive. Perceived vividness progressively increased with greater use of modality in extra-text accompaniments. In addition, the adoption of multimodality for news enhancements induced more favorable attitudes toward the Web site than did the employment of mono-modality. This main effect of modality, meanwhile, was not seen in behavioral intentions.

Finally, the analysis of the relationship between representation (or the lack thereof) by multimedia enhancements and content evaluations, attitudes toward the site, behavioral intentions, and news credibility was consistent with predictions. The presence of partiality – even misrepresentations– in multimedia accompaniments (i.e., extra-text exemplars) did not affect perceptions of the site, its content, or its credibility.

CHAPTER 5

DISCUSSION

This dissertation examined multimedia effects through the lens of exemplification theory. The author set out to test whether multimedia enhancements in news Web sites could act as exemplars and influence the way people perceive issues reported in the accompanying stories. The study's unique contribution was the introduction of modality as a moderating variable of exemplification. Because modality is an expression of vividness, this research provided tentative evidence regarding the role of exemplar vividness in exemplar influence. The following subsections discuss the study findings, theoretical and practical implications, limitations, and directions for future research.

Interpretations of Findings

A primary proposition in this research was that the multimedia content could create a shift in issue perception irrespective of what was reported in the textual content. The results suggested a significant effect of multimedia representation. In responses that immediately followed exposure to the stimuli, the group given negative (one side) multimedia assessed the issues more negatively than did the groups assigned to either positive (other side) or mixed (both sides) multimedia. This happened in the presence of identical, balanced news text across all conditions.

The finding is consistent with research of extra-text exemplars in traditional news. It has been shown that the inclusion of visual elements to enhance text presentations (e.g.,

extracted quote, picture) could add specific exemplifying information that pulls attention away from the focal point of a story and, consequently, impacts perceptions of the reported issue (Gibson, Hester, & Stewart, 2001; Gibson, Smith, & Hester, 2008; Gibson & Zillmann, 2000; Zillmann & Gibson, & Sargent, 1999). This phenomenon can be explained by the availability and representation heuristics (see Zillmann & Brosius, 2000, for a review). Extra-text elements employed to engage audiences tend to stick out and avail themselves more readily. News consumers may rely on them as a basal form of representation to avoid a more careful consideration of the text (Zillmann, 2002; Zillmann & Brosius, 2000). In the online news environment, multimedia enhancements can act as extra-text exemplars and, therefore, the information they reinforce greatly influences the way users assess the issues addressed in the accompanying stories.

The most intriguing postulation in this dissertation pertained to the role of vividness in exemplification. The author sought to operationalize vividness in terms of modality and argued that exemplar modality could interact with exemplar representation in affecting issue perception. Two important pieces of information should be established. First, at the operational level, modality induces vividness. Second, modality moderates exemplification.

The results indicated a relatively direct link between modality and vividness. Perceived vividness progressively increased with greater use of modality in extra-text enhancements (i.e., multimedia). According to Steuer (1992), vividness depends on two variables: sensory breadth and sensory depth. Sensory breadth, in particular, corresponds to modality because it refers to the quantity of perceptual channels that a presentation seeks to engage. As such, greater use of modality in a presentation makes it more vivid.

The more significant and interesting finding was concerned with an interplay between exemplar representation and exemplar modality. The employment of high modality served to heighten the impact of multimedia representation on immediate assessments. When exemplars were provided in a modality-rich format (pull quote+picture+video), the group presented with information stressing the negative side (one side) of the issues assessed them more negatively than did groups exposed to either positive (other side) or mixed (both sides) exemplifying information. Meanwhile, no significant differences were found among the groups given low-modality exemplars (pull quote only) no matter which side of the stories they emphasized. These results provided some tentative evidence of the role of modality—an expression of vividness—in exemplification.

Modality effects research suggests that information presented in multiple modalities is more memorable and more likely to “get across” (Baddeley, 1992; Daft & Lengel, 1984, 1986; Paivio, 1986; Penny, 1989; Sweller, van Merienboer, & Pass, 1998). The display of exemplars in a modality-rich format makes them more cognitively obtrusive. Therefore, people are more likely to rely on multimodal exemplars as shortcuts in reasoning. Since modality is a property of vividness (Coupey & Sandgathe, 2000; Smith & Shaffer, 2000; Steuer, 1992), the moderating role of exemplar modality in exemplar influence can be related to the hypothesis that vividness could be a determinant of exemplification (Brosius, 2003; Zillmann, 1999; Zillmann & Brosius, 2000).

While the aforementioned findings were substantial to provide new insight into the mechanisms underlying exemplification, the present study could only yield partial support for some of its important hypotheses. It should be noted that the main effect of multimedia representation and the interaction effect of multimedia representation and modality were not

observed in immediate inferences about the future of the reported issues – the second issue perception measure examined in this dissertation. This null effect may be due to the fact that the stimulus materials focused on single events at one moment in time. Moreover, the issues reported in the manipulated stories were highly unobtrusive to the American audience. Respondents might not have sufficient background information about the issues to draw inferences.

Psycholinguistic research offers a tentative explanation for the insignificant outcomes pertaining to inferences in this study. Theories of inferring suggest that inferences about upcoming events –forward or predictive inferences– are more likely to be drawn if they are readily available based on general world knowledge and when the focal event and the prior text are sufficient for a particular consequence (Klin, Guzmán, & Levine, 1999; Klin et al., 1999). In the present research, several respondents reported that they were uninformed due to the obscure nature of the issues in the United States. Perhaps, a single exposure to news about unfamiliar current events was not adequate for them to draw any inferences about the future of the reported issues.

The complete lack of significant results in every aspect of issue perception in the second session (delayed response) seems surprising. This dissertation failed to detect either the main effect of multimedia representation or the interaction effect of multimedia representation and modality on delayed assessments and delayed inferences about the reported issues. Between 10 and 14 days after being exposed to the stimuli, groups no longer showed appreciable differences. These findings were somewhat counter-intuitive, considering evidence established in past research about the lasting impact of exemplification. Numerous studies indicated a normal duration of exemplar influence of one to two weeks

(Zillmann, 2006; Zillmann & Brosius, 2000). Zillmann et al. (1996) demonstrated that exemplification could be prolonged if an issue was not associated with well-defined prior beliefs. In some cases, exemplars even produced sleeper effects (Gibson & Zillmann, 1994; Zillmann, Gibson, & Sargent, 1999).

Failure to document the enduring exemplar influence in this study, however, should not be interpreted as evidence to suggest that multimedia exemplification is short-lived in nature. Rather, the results reported here might have been influenced by the selection of stories for experimental purposes. In an attempt to extend exemplification research to international news, this dissertation probed perceptions of issues that are highly unobtrusive and unfamiliar to the respondents (i.e., Mindanao conflict and African development). For that reason, they might not find the issues addressed in the stories even remotely related to them, thereby feeling no need to retain information for future use. Zillmann (2000) argued that among other things, the immediacy of the threat or incentive conveyed in the information makes it more significant to the individual. The concept of informational utility can be related to the selective retention perspective, which states that people are more likely to retain information that is most important and meaningful to them (Baran & Davis, 2006). According to a recent study, stories conveying a low degree of informational utility scored low in free recall (Dillman Carpentier, 2008). The present research focused on two international issues that have a low degree of informational utility for the American audience. Several participants indicated that they did not recall much about the reported issues when responding to the second questionnaire. In retrospect, this helps explain null effects of multimedia exemplification on delayed responses.

Other findings in the study are also noteworthy. As suggested by the data, the use of multimodality in extra-text enhancements led to more positive attitudes toward the Web site. Adding either high-modality (pull quote+picture+video) or moderate-modality (pull quote+picture) accompaniments to the site generated more favorable evaluations than did using a low-modality addition (pull quote only). In other words, a combined use of both verbal and non-verbal channels to present information would make it more appealing to news audiences. This finding is consistent with recent research of online advertising and online news (Appiah, 2006; Coyle & Thorson, 2001; Lee et al., 2004; Li, Daugherty & Biocca, 2003). Meanwhile, the present study did not find the effect of modality on behavioral intentions. A plausible explanation may be that the stimulus Web site was introduced to participants as an outlet merely reporting international issues. Such a news site is not easily available in the current media landscape. Even though participants assigned to different versions of the site might see it as more or less attractive (due to multimodality functionality), they still regarded this Web site as a new source of foreign news that other media outlets often ignore. Consequently, the desire to revisit or recommend the site might not be strongly influenced by its multimedia features.

In addition, multimedia representation did not affect evaluations of the content quality of each story. Despite the presence of partiality and misrepresentation (i.e., overly negative or overly positive exemplars), respondents did not question the accuracy of such information. Moreover, their perceptions of the site were not undermined by distortions embedded in multimedia enhancements. Both attitudes and intentions toward the site were similar among the groups regardless of the match or mismatch between the multimedia content and the textual content. Importantly, representation or the lack thereof in multimedia enhancements

(i.e., extra-text exemplars) did not lead to differences in how respondents perceived the credibility of the site. All groups rated it as fairly reliable, no matter how the multimedia content was manipulated. Considering the substantial impact of multimedia representation on immediate assessments, these findings reaffirmed the argument that the biasing effect of exemplars often goes undetected (Gibson, Hester, & Stewart, 2001; Gibson & Zillmann, 1994; Zillmann, Gibson, & Sargent, 1999). In other words, non-representative exemplars potentially foster misperceptions, while news consumers may not find them undesirable and inappropriate.

Theoretical Implications

In retrospect, this dissertation makes a number of theoretical contributions to the study of news at the intersection of exemplification, multimedia effects, and effects of international news. While previous research has examined each of the three areas, relatively few studies, if any, have linked them together in a concerted project. The current research, therefore, provides new insight into what is termed as “multimedia exemplification” in the context of issues with which audiences have little experience.

An important premise of exemplification theory is that the vividness of exemplars triggers heuristic processing and thereby gives it an advantage over base-rate data in influencing judgment (Brosius, 2003; Zillmann & Brosius, 2000). Meanwhile, past research has rarely examined how exemplar vividness contributes to exemplar influence. The null effect found in two studies manipulating vividness in terms of exemplar language (Baesler & Burgoon, 1994; Brosius & Bathelt, 1994) was quite perplexing, leading to an argument that exemplification is not completely based on the vivid nature of exemplars (Brosius, 2003). Based on vividness effects and telepresence research (Smith & Shaffer, 2000; Steuer, 1992),

this author suggests that vividness can also be expressed in terms of modality. The present study's finding regarding the interaction effect of representation and modality on immediate assessments has important implications for exemplification research. First, the present study explores another means to operationalize exemplar vividness. Second, it suggests tentatively that vividness can help explain exemplar influence. Taken as a whole, this dissertation opens up a new research direction to better understand how exemplification takes place.

In considering modality a measurable dimension of vividness, the current research examines a moderator of exemplification. While the extant literature has studied exemplars in various forms, little work has been done to examine the possibility that presenting exemplars in different formats or combinations of formats could produce differential effects. This dissertation is among the first to apply theoretical frameworks in modality effects research to explore whether adding modality to exemplars would enhance exemplification effects. The results indicate that modality-rich exemplars have a stronger impact than that of mono-modal exemplars. In other words, it can be argued that exemplification is contingent on the presentational format of exemplars. As such, the current undertaking breaks a new ground, contributing to theory development.

Exemplification is a relatively new theory of media effects. Since its inception in the early 1990s, the theoretical perspective has received support from a healthy number of empirical studies (Zillmann & Brosius, 2000). The accumulation of data on exemplification indicates that the theory has considerable promise in explaining a ubiquitous phenomenon in communication (Zillmann, 1999, 2006). Meanwhile, the majority of existing research has focused on traditional news. With the rise of the Internet as a new mass medium, it is important to investigate whether this theoretical framework is robust when testing with newer

forms of media presentations. The dissertation began to unearth the effects of exemplars in the online news environment. In examining multimedia exemplification, the present study extends research of additional exemplars in traditional news (e.g., extracted quotes, pictures, news-cast closing items) to multimedia enhancements on news site. Thus, this work touches on a new line of research that has hardly been considered before.

Moreover, the current study helps advance our understanding of multimedia effects. Previous investigations tend to invoke modality effects theories to study the psychological importance of multimedia. Several studies focused on outcome variables such as memory, perception, or intention toward Web sites (Appiah, 2006; Coyle & Thorson, 2001; Kalyanaraman & Ivory, 2009; Kioussis, 2006; Lee et al., 2004; Li, Daugherty, & Biocca, 2003; Pippas et al., 2009; Sundar, 2000; Sundar, Kalyanaraman, & Jones, 2000). The present work takes a different approach by addressing multimedia effects from the perspective of exemplification. News sites often use multimedia enhancements to embellish the text and appeal to online audiences (Dimitrova & Neznanski, 2006). The present study hypothesizes that the display of vivid multimedia accompaniments may convey incongruent information that potentially undermines the processing of messages. According to the results reported here, adding such multimedia to media presentations influences social judgments irrespective of the textual content. In identifying issue perception as a dependent variable, the dissertation generates new insight into possible consequences of multimedia functionality.

In addition, the current undertaking corroborates prior studies in applying the concept of code to examine modality effects in Web-based mass communication (Kalyanaraman & Ivory, 2009; Kalyanaraman & Sundar, 2008; Sundar, Kalyanaraman, & Jones, 2000). This research indicates that the adoption of multimodality to enhance online information content

could produce an affective effect by which users favor a multimodal information platform over a mono-modal platform. This effect, however, is not necessarily additive. The employment of rich modality versus moderate modality may not lead to differences in attitudes toward a Web site. It is also noteworthy that modality effects may not exhibit in behavioral intentions if users find the content of a Web site relatively novel. The possible moderating role of content features is an interesting venue for future inquiries about modality effects in online communication.

Finally, the present study is a step toward developing a more coherent line of research to investigate the effects of media presentations on the perception of international issues. The argument that foreign news is the “international image former” has been widely asserted since the 1960s (Galtung & Ruge, 1965). Meanwhile, this research area has been largely ignored (Perry, Melson, & Howard, 1997). The current research responds to the call for a greater emphasis on theory-guided work to document specific outcomes and consequences of news coverage of foreign affairs. This dissertation proposes using exemplification as a theoretical framework to study how the news influences our mental picture of the world. In addition, the exemplification hypothesis argues that exemplar influence could be more pronounced when news consumers have limited experience with relevant occurrences (Zillmann, 1999; Zillmann & Brosius, 2000). By experimenting with international issues, this dissertation provides a means to test this assumption.

Practical Implications

In addition to the aforementioned theoretical contributions, the research also has practical implications for journalists, news organizations, Web designers, and online news audiences. Multimedia capability is a unique feature of the Web. It allows a wide range of

modes and variables to choose from in presenting and receiving information (De Jong & Van Der Geest, 2000). Most Web sites, including those representing the news media, embrace multimedia in hopes of communicating information more effectively. Meanwhile, the actual effects of adding multimedia to online content have not been well understood. The project reported here constitutes a reality check of the benefits and limitations of this practice. Several useful suggestions can be drawn from the data.

First, this study sends a strong signal to journalists and news organizations about the adoption of multimedia to enhance news content. One conclusion from the analysis is that adding vivid multimedia elements to text-based news could make a news site more attractive to online audiences, at least in terms of their attitudes toward the Web site. On the other hand, the research shows that multimedia can also add extra-focal information that strongly affects the formation of perceptions of the reported issues. It is no longer valid to claim that balanced reporting in the textual content of news stories would be sufficient. The use of extracted quotes, pictures, and video can translate into additional reporting that potentially eclipses the focal information communicated through the text. Partiality in the multimedia content may bias the perception of issues, regardless of how comprehensive the textual content is. Given that news organizations usually use multimedia accompaniments as a means to make news presentations more interesting, this dissertation informs journalists about unintended side effects of such practice. It should be noted that the inclusion of unrepresentative details in multimedia might obstruct an effective transmission of news information, leading to possible misperceptions. This finding well brings attention to online news producers about the need to balance between serving the audience with well-packaged news and serving the public with accurate news.

Highly relevant to the above-mentioned implications for the news industry are suggestions for Web designers in general. Easy broadband access enables designers to integrate complex multimedia into Web sites. The advantage of multimedia functionality is its ability to adopt innovative design strategies to appeal to online audiences. The disadvantage, however, is a challenge in communicating a coherent message through multiple modes of presentation (Schumacher, 2005). In the context of news, the vivid display of multimedia as “grabbers” may lead users to give these extra-text enhancements favored attention, thereby preventing a more thorough processing of the focal information in the text. This may also be the case in other contexts pertaining to persuasive communication such as Web campaigning or online advertising. In light of the findings reported here, it can be argued that inappropriate integration of multimedia into a Web site may cause distraction, pull attention away from the argumentation line, and consequently weaken the strength of persuasive messages. Therefore, this study encourages a careful consideration of multimedia incorporation into Web design. Designers are charged with the responsibility to engage online audiences with vivid multimedia elements. However, they need to put themselves in the position of the user when he or she processes complex information. Ultimately, the goal of online communication is to get the intended message across. Multimedia enhancements should be the means, but not the end.

This dissertation also brings some greater sense of awareness to the audience of multimedia news. It demonstrates that well-packaged information enabled by multimedia functionality may impact the way people process news and make judgments about relevant happenings. Unrepresentative information conveyed by seemingly interesting and innocuous enhancements potentially misleads the perception of social issues reported in the

accompanying stories. The social consequences of what can be termed as “inappropriate multimedia enhancements” are even more alarming when considering the power of media images in shaping our mental pictures of the world. The study corroborates earlier findings (Perry 1985, 1987a, 1987b), showing that unrepresentative news can reduce the accuracy of generalizations about other nations and their problems. Notably, the current research found the effect of partiality in multimedia accompaniments on a sample of journalism students, who are media literate and internationally travelled (86% of the participants reported to have travelled outside of the United States). Even this select group of news consumers was unable to detect distortions embedded in multimedia enhancements or raise questions about their content. This finding reminds general news audiences of how susceptible they are to the influence of vivid stimuli in media presentations, especially when they deal with complex, almost inaccessible foreign affairs.

Limitations

Although this dissertation has important implications, caution must be taken in interpreting the study findings. As in any experimental research, the current undertaking has limitations. Concerns may be associated with the use of student sample, experimental treatment, measure, and a media-centered approach.

Acknowledged is the fact that the use of a convenience sample was not an ideal method to test and draw inferences about effects of multimedia news on general audiences. On the one hand, data collected from students, particularly journalism students, help eliminate novelty effects. On the other hand, the results based on such data may be confounded by their insights into news reporting.

The artificial nature of a controlled-lab experiment also limits the generalizability of the research findings. In this study, participants were specifically asked to access the video content if they were assigned to the high modality condition (i.e., pull quote+picture+video). This instruction created a form of forced attention that may not be the case under natural circumstances. In reality, the Web is a user-controlled environment in which users have almost complete control over what information they choose to receive or disregard.

The selection of stimulus materials may be a factor leading to null-effects that have been discussed earlier. Although the two manipulated stories (i.e., Mindanao conflict and African development) were appropriate to examine exemplar influence on the perception of highly mediated events, they appeared to have a low level of informational utility. Non-significant results pertaining to immediate inferences and both delayed assessments and delayed inferences might have been confounded by the floor effect, by which participants did not have adequate background information to make judgments about the reported issues.

In retrospect, index validation procedure revealed some issues with measurement. First, the scales measuring estimates of the magnitude of issues failed to collapse. The poor performance of the scales excluded from the analysis an important measure of issue perception. Second, since no validated scale is available for perceived vividness, an attempt was made to develop a multi-item scale. However, this study has not succeeded in doing so. Consequently, vividness was measured by a combined use of two single items adapted from past research. The reliability of this index is somewhat open to interpretation.

Another limitation of the current study is its “top-down” approach to media effects research (Zillmann & Brosius, 2000). This dissertation only focused on media variables (multimedia representation and modality use) as key factors affecting human responses.

Meanwhile, several important non-media variables that possibly moderate or even mediate the observed effects have not been taken into account.

Future Research

Given the widespread adoption of multimedia enhancements in online communication, it is striking that little is known about the advantages and disadvantages of such practice. This dissertation addresses multimedia exemplification in an initial step toward investigating the conditions under which multimedia integration into Web sites enhances or undermines information processing. The findings reported here warrant future consideration of several interesting questions for scholars studying exemplification and multimedia effects.

The current research is among the first to present tentative evidence about the role of vividness in exemplification. Vividness –expressed strictly in terms of modality– potentially contributes exemplar influence. This finding needs to be replicated and further verified with samples other than journalism students.

According to Zillmann (1999), exemplification is associated with limited access to relevant occurrences. Several studies have demonstrated the enduring effect of exemplars when it comes to issues involving little prior beliefs (Gibson & Zillmann, 1994; Zillman, Gibson, & Sargent, 1999; Zillmann et al., 1996). This study found that exemplification might not be prolonged in cases where the addressed issues have low levels of informational utility. In the current research, informational utility and selective retention were used as a post-hoc interpretation of the null-effects with respect to delayed measures of issue perception. But it is worthwhile exploring informational utility as a moderator of exemplification.

A direct extension of this work may further examine the role of content features and motivational factors affecting exemplar influence. It would be interesting to probe the

interplay of exemplars, story complexity, and content involvement as evidenced through outcome variables such as memory for the news content, and issue perception.

Future research may well extend to both media and non-media factors as intervening variables of multimedia effects. Specifically, the way various multimedia elements are presented in relation to time (simultaneous vs. consequential) and space (integrated vs. separate) may determine how people process, store, and perceive multimedia information. The degree to which different multimedia components reinforce coherent information (congruent vs. incongruent) and the extent to which users have control over the flow of multiple information sources (streaming vs. non-streaming) are some other potential moderators of multimedia effects. Mass communication research, particularly media effects research, tends to focus on a relatively direct message-response relationship, while ignoring human factors that help explain such a relationship. Multimedia research should also include situational variables (e.g., time pressure), motivational variables (e.g., need for cognition, salience, task importance), and individual differences (e.g., cognitive resource, processing style, disposition) in detecting effects. An underlying theme of this inquiry is the importance of close analysis of contingent conditions of multimedia effects from a “bottom-up” approach.

Another direction for subsequent studies is to examine how and under which conditions multimedia influence selective exposure. While effects on memory, perception, and behavior are important, we cannot overlook the central role of information selection in the processing of media messages. Exposure to media is always selective, and this is especially true with the Web environment, where users have much more control over information selection. Thus, the study of selective exposure as the dependent variable in

multimedia effects research is necessary to advance our knowledge of benefits and disadvantages of using multimedia enhancements to appeal to online audiences.

In summary, several directions appear promising for future studies. This dissertation is the first step toward a coherent research program focusing on multimedia effects.

Systematic investigations will help expand our ability to understand the intriguing connection between multimedia presentation, information processing, and perception of social reality.

APPENDIX A

TABLES AND FIGURES

I. Tables

Table 1. Summary of ANOVAs for Manipulation Check (Africa Story)

| | | Sum of Squares | Df | Mean Square | F |
|---------------------|----------------|-------------------|----|----------------|----------|
| Quote | Between groups | 93.724 | 2 | 46.862 | 27.976** |
| | Within groups | 28.476 | 17 | 1.675 | |
| | Total | 122.200 | 19 | | |
| Picture | Between groups | 92.986 | 2 | 46.493 | 29.043** |
| | Within groups | 27.214 | 17 | 1.601 | |
| | Total | 120.200 | 19 | | |
| Video | Between groups | 104.652 | 2 | 52.326 | 33.508** |
| | Within groups | 26.548 | 17 | 1.562 | |
| | Total | 131.200 | 19 | | |
| Quote+picture | Between groups | 98.702 | 2 | 49.351 | 28.883** |
| | Within groups | 29.048 | 17 | 1.709 | |
| | Total | 127.750 | 19 | | |
| Quote+picture+video | Between groups | 110.943 | 2 | 55.471 | 28.700** |
| | Within groups | 32.857 | 17 | 1.933 | |
| | Total | 143.800 | 19 | | |

Note. ** $p < .01$

Table 2. Tukey HSD Comparison for Manipulation Check (Africa Story)

| | (I) Representation | (J) Representation | Mean Difference (I-J) | Sig. |
|---------------------|--------------------|--------------------|-----------------------------|------|
| Quote | Negative | Balanced | -3.09524(*) | .001 |
| | | Positive | -5.38095(*) | .000 |
| | Balanced | Negative | 3.09524(*) | .001 |
| | | Positive | -2.28571(*) | .011 |
| | Positive | Negative | 5.38095(*) | .000 |
| | | Balanced | 2.28571(*) | .011 |
| Picture | Negative | Balanced | -2.64286(*) | .004 |
| | | Positive | -5.35714(*) | .000 |
| | Balanced | Negative | 2.64286(*) | .004 |
| | | Positive | -2.71429(*) | .002 |
| | Positive | Negative | 5.35714(*) | .000 |
| | | Balanced | 2.71429(*) | .002 |
| Video | Negative | Balanced | -2.97619(*) | .001 |
| | | Positive | -5.69048(*) | .000 |
| | Balanced | Negative | 2.97619(*) | .001 |
| | | Positive | -2.71429(*) | .002 |
| | Positive | Negative | 5.69048(*) | .000 |
| | | Balanced | 2.71429(*) | .002 |
| Quote+picture | Negative | Balanced | -2.80952(*) | .003 |
| | | Positive | -5.52381(*) | .000 |
| | Balanced | Negative | 2.80952(*) | .003 |
| | | Positive | -2.71429(*) | .003 |
| | Positive | Negative | 5.52381(*) | .000 |
| | | Balanced | 2.71429(*) | .003 |
| Quote+picture+video | Negative | Balanced | -3.00000(*) | .003 |
| | | Positive | -5.85714(*) | .000 |
| | Balanced | Negative | 3.00000(*) | .003 |
| | | Positive | -2.85714(*) | .004 |
| | Positive | Negative | 5.85714(*) | .000 |
| | | Balanced | 2.85714(*) | .004 |

Table 3. Summary of ANOVAs for Manipulation Check (Mindanao Story)

| | | Sum of Squares | Df | Mean Square | F |
|---------------------|----------------|-------------------|----|----------------|-----------|
| Quote | Between groups | 130.474 | 2 | 65.237 | 41.888** |
| | Within groups | 26.476 | 17 | 1.557 | |
| | Total | 156.950 | 19 | | |
| Picture | Between groups | 159.157 | 2 | 79.579 | 203.653** |
| | Within groups | 6.643 | 17 | .391 | |
| | Total | 165.800 | 19 | | |
| Video | Between groups | 71.395 | 2 | 35.698 | 64.527** |
| | Within groups | 9.405 | 17 | .553 | |
| | Total | 80.800 | 19 | | |
| Quote+picture | Between groups | 129.252 | 2 | 64.626 | 87.558** |
| | Within groups | 12.548 | 17 | .738 | |
| | Total | 141.800 | 19 | | |
| Quote+picture+video | Between groups | 79.095 | 2 | 39.548 | 37.549** |
| | Within groups | 17.905 | 17 | 1.053 | |
| | Total | 97.000 | 19 | | |

Note. $p < .01$

Table 4. Tukey HSD Comparison for Manipulation Check (Mindanao Story)

| Dependent Variable | (I) Representation | (J) Representation | Mean Difference (I-J) | Sig. |
|---------------------|--------------------|--------------------|-----------------------|------|
| Quote | Negative | Balanced | -4.38095(*) | .000 |
| | | Positive | -6.23810(*) | .000 |
| | Balanced | Negative | 4.38095(*) | .000 |
| | | Positive | -1.85714(*) | .032 |
| | Positive | Negative | 6.23810(*) | .000 |
| | | Balanced | 1.85714(*) | .032 |
| Picture | Negative | Balanced | -2.78571(*) | .000 |
| | | Positive | -6.92857(*) | .000 |
| | Balanced | Negative | 2.78571(*) | .000 |
| | | Positive | -4.14286(*) | .000 |
| | Positive | Negative | 6.92857(*) | .000 |
| | | Balanced | 4.14286(*) | .000 |
| Video | Negative | Balanced | -2.26190(*) | .000 |
| | | Positive | -4.69048(*) | .000 |
| | Balanced | Negative | 2.26190(*) | .000 |
| | | Positive | -2.42857(*) | .000 |
| | Positive | Negative | 4.69048(*) | .000 |
| | | Balanced | 2.42857(*) | .000 |
| Quote+picture | Negative | Balanced | -3.02381(*) | .000 |
| | | Positive | -6.30952(*) | .000 |
| | Balanced | Negative | 3.02381(*) | .000 |
| | | Positive | -3.28571(*) | .000 |
| | Positive | Negative | 6.30952(*) | .000 |
| | | Balanced | 3.28571(*) | .000 |
| Quote+picture+video | Negative | Balanced | -3.19048(*) | .000 |
| | | Positive | -4.90476(*) | .000 |
| | Balanced | Negative | 3.19048(*) | .000 |
| | | Positive | -1.71429(*) | .016 |
| | Positive | Negative | 4.90476(*) | .000 |
| | | Balanced | 1.71429(*) | .016 |

Table 5. Descriptive Statistics

| Variable | | | |
|-----------------------------------|-----------|----------------|------------------------|
| Continuous measures | | | |
| | Mean | Std. Deviation | Range |
| Assessment _{Immediate} | 3.99 | 1.17 | 1.7-7.8 ^a |
| Assessment _{Delayed} | 4.04 | 1.09 | 1.8-7 ^a |
| Inference _{Immediate} | 5.28 | 1.45 | 2.3 -8.8 ^a |
| Inference _{Delayed} | 5.09 | 1.40 | 2-8.5 ^a |
| Estimate _{Immediate} | 50.42 | 14.44 | 18.3-91.7 ^a |
| Estimate _{Delayed} | 53.45 | 13.41 | 16.7-87.3 ^a |
| Attitudes _{Site} | 5.23 | 1.54 | 1.4-8 ^b |
| Intentions _{Site} | 4.37 | 1.79 | 1-9 ^b |
| Credibility | 6.84 | 1.26 | 1.5-9 ^b |
| Content _{AF} | 6.09 | 1.67 | 1.3-8.9 ^c |
| Content _{MI} | 6.01 | 1.52 | 1.1-8.6 ^c |
| Vividness | 4.29 | 1.79 | 1-8.5 ^d |
| International knowledge | 5.44 | 1.38 | 2-9 ^e |
| Familiarity | 7.79 | 1.42 | 1-9 ^f |
| Familiarity with Africa | 7.12 | 2.00 | 1-9 ^f |
| Familiarity with Mindanao | 8.47 | 1.33 | 1-9 ^f |
| Online hours per day | 3.81 | 1.67 | 1-12 |
| Age | 20.36 | 1.22 | 18-28 |
| Categorical variables | | | |
| Ever traveled to Africa | Yes | No | |
| | 9.5% | 90.5% | |
| Ever traveled to Mindanao | Yes | No | |
| | .6% | 99.4% | |
| Ever traveled outside of the U.S. | Yes | No | |
| | 86% | 14% | |
| Gender | Female | Male | |
| | 78.3% | 21.7% | |
| Race | Caucasian | Other | |
| | 78.8% | 21.2% | |

Note. a. Higher scores indicate more negative perceptions.
b. Higher scores indicate more positive responses.
c. Higher scores indicate more positive evaluations.
d. Higher scores indicate higher levels of vividness.
e. Higher scores indicate greater international knowledge.
f. Higher scores indicate lower levels of familiarity.

Table 6. Assessment_{Immediate} and Inference_{Immediate} by Representation

| Representation | Mean | Std. Deviation | Range | Skewness | Kurtosis |
|---------------------------------|------|----------------|---------|----------|----------|
| One side (negative) | | | | | |
| Assessment _{Immediate} | 4.4 | 1.15 | 2.5-7 | .43 | -.46 |
| Inference _{Immediate} | 5.7 | 1.29 | 3-8 | -.08 | -.92 |
| Other side (positive) | | | | | |
| Assessment _{Immediate} | 3.6 | 1.16 | 1.7-7.8 | 1.14 | 2.26 |
| Inference _{Immediate} | 4.9 | 1.66 | 2.3-7.8 | .26 | -1.23 |
| Both sides (mixed) | | | | | |
| Assessment _{Immediate} | 3.9 | 1.08 | 2-6.5 | .06 | -.74 |
| Inference _{Immediate} | 5.3 | 1.31 | 3-8.8 | .25 | -.38 |

Note. Higher means on the dependent variables indicate more negative perceptions.

Table 7. Standardized Canonical Coefficients and Correlations of Discriminating Variables with the Two Discriminant Functions (H1 Testing)

| Outcome measures | Correlation coefficients with discriminant functions | | Standardized coefficients for discriminant functions | |
|---------------------------------|---|------------|---|------------|
| | Function 1 | Function 2 | Function 1 | Function 2 |
| Assessment _{Immediate} | .95 | -.31 | .82 | -.71 |
| Inference _{Immediate} | .65 | .76 | .33 | 1.04 |

Table 8. Pairwise Differences in Group Means on Issue Perception (Immediate Effect)

| Representation | LDF1 | | LDF2 | |
|----------------|----------|-------------------|---------------------|---------------------|
| | One side | Other side | One side | Other side |
| Other side | .82** | | .0003 ^{ns} | |
| Both sides | .46* | .37 ^{ns} | .0024 ^{ns} | .0026 ^{ns} |

Note. LDF = linear discriminant function; ** $p < .001$; * $p < .05$; ns = non-significant.

Table 9. Assessment_{Delayed} and Inference_{Delayed} by Representation

| Representation | Mean | Std. Deviation | Range | Skewness | Kurtosis |
|-------------------------------|------|----------------|---------|----------|----------|
| One side (negative) | | | | | |
| Assessment _{Delayed} | 4.1 | 1.14 | 1.8-7 | .52 | .05 |
| Inference _{Delayed} | 5.0 | 1.49 | 2-8.5 | .21 | -.41 |
| Other side (positive) | | | | | |
| Assessment _{Delayed} | 3.9 | 1.06 | 1.8-7 | .31 | .12 |
| Inference _{Delayed} | 5.1 | 1.43 | 2-8.3 | -.13 | -.49 |
| Both sides (mixed) | | | | | |
| Assessment _{Delayed} | 4.1 | 1.09 | 2.2-7 | .47 | -.27 |
| Inference _{Delayed} | 5.2 | 1.28 | 2.8-8.5 | .25 | -.08 |

Note. Higher means on the dependent variables indicate more negative perceptions.

Table 10. Attitudes_{Site} and Intentions_{Site} by Modality

| Modality | Mean | Std. Deviation | Range | Skewness | Kurtosis |
|----------------------------|------|----------------|---------|----------|----------|
| Low | | | | | |
| Attitudes _{Site} | 4.3 | 1.52 | 1.4-7.8 | .23 | -.70 |
| Intentions _{Site} | 3.9 | 1.89 | 1-8.7 | .47 | -.47 |
| Moderate | | | | | |
| Attitudes _{Site} | 5.8 | 1.30 | 1.8-8 | -.68 | .75 |
| Intentions _{Site} | 4.7 | 1.67 | 1-9 | .23 | -.02 |
| High | | | | | |
| Attitudes _{Site} | 5.7 | 1.31 | 2.3-8 | -.64 | .15 |
| Intentions _{Site} | 4.5 | 1.76 | 1-7.7 | -.04 | -.71 |

Note. Higher means on the dependent variables indicate more positive perceptions.

Table 11. Standardized Canonical Coefficients and Correlations of Discriminating Variables with the Two Discriminant Functions (H3 Testing)

| Outcome measures | Correlation coefficients with discriminant functions | | Standardized coefficients for discriminant functions | |
|----------------------------|---|------------|---|------------|
| | Function 1 | Function 2 | Function 1 | Function 2 |
| Attitudes _{Site} | .97 | .25 | 1.14 | -.44 |
| Intentions _{Site} | .36 | .93 | -.30 | 1.19 |

Table 12. Pairwise Differences in Group Means on Site Perception (H3 Testing)

| Modality | LDF1 | | LDF2 | |
|----------|---------|--------------------|--------------------|--------------------|
| | Low | Moderate | Low | Moderate |
| Moderate | 1.12 ** | | .038 ^{ns} | |
| High | 1.08 ** | .044 ^{ns} | .044 ^{ns} | .082 ^{ns} |

Note. LDF = linear discriminant function; ** $p < .001$; ns = non-significant.

Table 13. Perceived Vividness by Modality

| Modality | Mean | Std. Deviation | Range | Skewness | Kurtosis |
|----------|------|----------------|---------|----------|----------|
| Low | 2.87 | 1.59 | 1-7 | .97 | .15 |
| Moderate | 4.48 | 1.45 | 1.5-8.5 | .18 | -.28 |
| High | 5.54 | 1.19 | 2-8 | -.32 | .14 |

Note. Higher means on the dependent variable indicate higher levels of vividness.

Table 14. Pairwise Differences in Group Means on Perceived Vividness (H4 Testing)

| Modality | Low | Moderate | p |
|----------|------|----------|--------|
| Moderate | 1.62 | | < .001 |
| High | 2.68 | 1.06 | < .001 |

Table 15. Assessment_{Immediate} and Inference_{Immediate} by Representation and Modality

| Group | Mean | Std. Deviation | Range | Skewness | Kurtosis |
|---------------------------------|------|----------------|---------|----------|----------|
| One side/Low modality | | | | | |
| Assessment _{Immediate} | 4.0 | .77 | 3-6.3 | 1.58 | 3.26 |
| Inference _{Immediate} | 5.5 | 1.39 | 3-8 | -.18 | -.40 |
| One side/Moderate modality | | | | | |
| Assessment _{Immediate} | 4.3 | 1.49 | 2.5-6.8 | .34 | -1.25 |
| Inference _{Immediate} | 5.5 | 1.15 | 3.8-7.5 | .23 | -.91 |
| One side/High modality | | | | | |
| Assessment _{Immediate} | 4.9 | .93 | 3.2-7 | .43 | .14 |
| Inference _{Immediate} | 6.1 | 1.28 | 4.3-7.8 | -.26 | -1.60 |
| Other side/Low modality | | | | | |
| Assessment _{Immediate} | 3.8 | 1.40 | 2.3-7.8 | 1.41 | 1.90 |
| Inference _{Immediate} | 5.3 | 1.70 | 2.6-7.8 | .01 | -1.49 |
| Other side/Moderate modality | | | | | |
| Assessment _{Immediate} | 3.6 | 1.03 | 1.8-6.3 | .65 | 1.56 |
| Inference _{Immediate} | 4.9 | 1.68 | 2.8-7.8 | .41 | -1.30 |
| Other side/High modality | | | | | |
| Assessment _{Immediate} | 3.3 | .97 | 1.7-4.8 | .20 | -1.15 |
| Inference _{Immediate} | 4.5 | 1.57 | 2.3-7.5 | .36 | -.81 |
| Both sides/Low modality | | | | | |
| Assessment _{Immediate} | 4.2 | .94 | 2.3-5.7 | -.17 | -.63 |
| Inference _{Immediate} | 5.4 | 1.38 | 3-8 | -.18 | -.37 |
| Both sides/Moderate modality | | | | | |
| Assessment _{Immediate} | 3.9 | 1.12 | 2.2-6.5 | .56 | .09 |
| Inference _{Immediate} | 5.2 | 1.05 | 3.8-7 | .30 | -1.02 |
| Both sides/High modality | | | | | |
| Assessment _{Immediate} | 3.8 | 1.17 | 2-5.7 | -.02 | -1.31 |
| Inference _{Immediate} | 5.2 | 1.51 | 3-8.8 | .55 | -.26 |

Note. Higher means on the dependent variables indicate more negative perceptions.

Table 16. Raw and Standardized Canonical Coefficients (H5 Testing)

| Outcome measures | Raw coefficients | | Standardized coefficients for | |
|---------------------------------|------------------|------------|-------------------------------|------------|
| | Function 1 | Function 2 | Function 1 | Function 2 |
| Assessment _{Immediate} | .753 | -.586 | .838 | -.652 |
| Inference _{Immediate} | .233 | .706 | .332 | 1.008 |

Table 17. Mean Differences on LDF1 for Representation and Modality (Immediate Effect)

| Representation | Modality Use | |
|-----------------------|--------------------|-------------------|
| | Low | Moderate |
| One side (negative) | | |
| Moderate | .20 ^{ns} | |
| High | .78 ($p = .015$) | .57 ^{ns} |
| Other side (positive) | | |
| Moderate | .41 ^{ns} | |
| High | .70 ($p = .029$) | .29 ^{ns} |
| Both sides (mixed) | | |
| Moderate | .28 ^{ns} | |
| High | .36 ^{ns} | .08 ^{ns} |

Note. LDF1 = first linear discriminant function; ns = non-significant.

Table 18. Mean Differences on LDF1 for Modality and Representation (Immediate Effect)

| Modality | Representation | |
|-----------------------|---------------------|-----------------------|
| | One side (negative) | Other side (positive) |
| Low | | |
| Other side (positive) | .08 ^{ns} | |
| Both sides (mixed) | .08 ^{ns} | .16 ^{ns} |
| Moderate | | |
| Other side (positive) | .69 ($p = .031$) | |
| Both sides (mixed) | .40 ^{ns} | .29 ^{ns} |
| High | | |
| Other side (positive) | 1.55 ($p < .001$) | |
| Both sides (mixed) | 1.05 ($p = .001$) | .50 ^{ns} |

Note. LDF1 = first linear discriminant function; ns = non-significant.

Table 19. Assessment_{Delayed} and Inference_{Delayed} by Representation and Modality

| Group | Mean | Std. Deviation | Range | Skewness | Kurtosis |
|-------------------------------|------|----------------|---------|----------|----------|
| One side/Low modality | | | | | |
| Assessment _{Delayed} | 3.9 | .99 | 2.3-6 | .70 | .67 |
| Inference _{Delayed} | 5.1 | 1.57 | 2.5-8.3 | .12 | -.76 |
| One side/Moderate modality | | | | | |
| Assessment _{Delayed} | 4.0 | .95 | 2-6 | .08 | .28 |
| Inference _{Delayed} | 4.6 | 1.16 | 2.8-8 | 1.26 | 2.56 |
| One side/High modality | | | | | |
| Assessment _{Delayed} | 4.4 | 1.41 | 1.8-7 | .25 | -.68 |
| Inference _{Delayed} | 5.2 | 1.69 | 2-8.5 | -.35 | -.36 |
| Other side/Low modality | | | | | |
| Assessment _{Delayed} | 4.1 | 1.03 | 2-5.8 | .12 | -.52 |
| Inference _{Delayed} | 5.0 | 1.43 | 2-7 | -.72 | -.15 |
| Other side/Moderate modality | | | | | |
| Assessment _{Delayed} | 3.9 | .83 | 2.3-5.7 | .40 | .04 |
| Inference _{Delayed} | 5.6 | 1.39 | 3.3-8.3 | -.05 | -.49 |
| Other side/High modality | | | | | |
| Assessment _{Delayed} | 3.9 | 1.30 | 1.8-7 | .41 | .20 |
| Inference _{Delayed} | 4.8 | 1.45 | 2.5-8 | .37 | -.49 |
| Both sides/Low modality | | | | | |
| Assessment _{Delayed} | 3.9 | .96 | 2.2-5.7 | -.20 | -.95 |
| Inference _{Delayed} | 5.3 | 1.57 | 3-8.5 | .26 | -.56 |
| Both sides/Moderate modality | | | | | |
| Assessment _{Delayed} | 4.4 | 1.24 | 2.3-7 | .53 | -.27 |
| Inference _{Delayed} | 5.1 | 1.16 | 2.8-7.5 | -.04 | -.19 |
| Both sides/High modality | | | | | |
| Assessment _{Delayed} | 4.0 | 1.05 | 2.7-6 | .59 | -.79 |
| Inference _{Delayed} | 5.1 | 1.13 | 2.8-7.8 | .20 | .75 |

Note. Higher means on the dependent variables indicate more negative perceptions.

Table 20. Content_{AF} and Content_{MI} by Representation

| Representation | Mean | Std. Deviation | Range | Skewness | Kurtosis |
|-----------------------|------|----------------|---------|----------|----------|
| One side (negative) | | | | | |
| Content _{AF} | 5.9 | 1.65 | 2-8 | -.81 | -.35 |
| Content _{MI} | 5.9 | 1.41 | 2.1-8.5 | -.70 | .16 |
| Other side (positive) | | | | | |
| Content _{AF} | 6.1 | 1.79 | 1.5-8.9 | -.80 | -.03 |
| Content _{MI} | 6.2 | 1.54 | 1.8-8.6 | -.77 | .12 |
| Both sides (mixed) | | | | | |
| Content _{AF} | 6.3 | 1.59 | 1.3-8.8 | -1.21 | 2.11 |
| Content _{MI} | 6.0 | 1.63 | 1.1-8.5 | -.89 | .57 |

Note. Higher means on the dependent variables indicate more positive responses.

Table 21. Attitudes_{Site}, Intentions_{Site}, Credibility by Representation

| Representation | Mean | Std. Deviation | Range | Skewness | Kurtosis |
|----------------------------|------|----------------|---------|----------|----------|
| One side (negative) | | | | | |
| Attitudes _{Site} | 5.3 | 1.48 | 2.5-8 | -.32 | -.77 |
| Intentions _{Site} | 4.6 | 1.77 | 1.3-8.3 | .26 | -.57 |
| Credibility | 6.9 | 1.03 | 4.9-8.8 | -.26 | -1.11 |
| Other side (positive) | | | | | |
| Attitudes _{Site} | 5.3 | 1.56 | 1.8-8 | -.26 | -.64 |
| Intentions _{Site} | 4.3 | 1.82 | 1-8.7 | .14 | -.61 |
| Credibility | 6.9 | 1.11 | 4.2-9 | -.43 | -.25 |
| Both sides (mixed) | | | | | |
| Attitudes _{Site} | 5.1 | 1.60 | 1.4-7.7 | -.63 | -.31 |
| Intentions _{Site} | 4.2 | 1.80 | 1-9 | .13 | -.46 |
| Credibility | 6.7 | 1.58 | 1.5-8.9 | -1.40 | 2.64 |

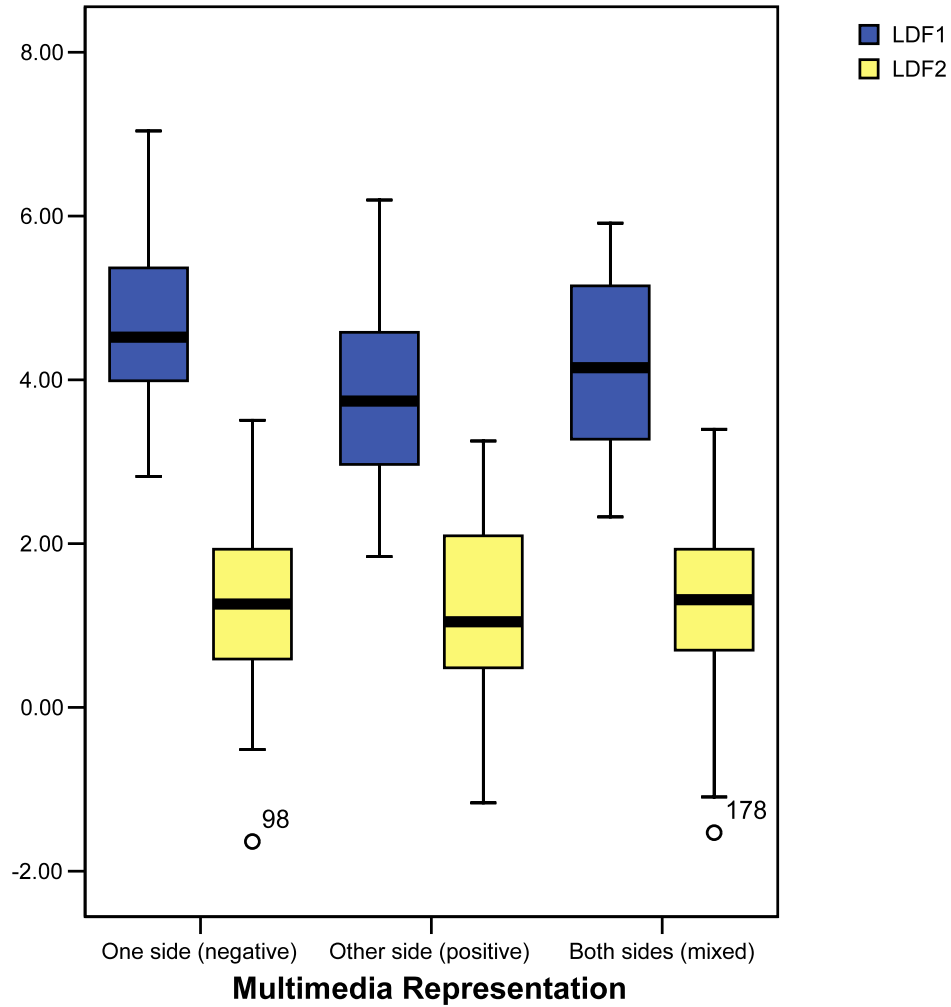
Note. Higher means on the dependent variables indicate more positive responses.

Table 22. Summary of Findings

| No. | Finding | Hypothesis/Research question | Rationale |
|-----|---|--|--|
| H1 | Partially supported (main effect of representation on immediate assessments) | Multimedia representation will affect immediate response such that issue perception will vary in the direction suggested by the multimedia content regardless of the textual content | Examines impact of multimedia enhancements as extra-text exemplars |
| H2 | Not supported | The impact of multimedia representation on the perception of issues addressed in the accompanying stories will persist, even grow over time | Assesses duration of exemplar influence on judgment |
| H3 | Partially supported (main effect on attitudes toward the site) | Greater use of modality in multimedia enhancements will elicit higher levels of positive perceptions toward the Web site | Tests modality effects in terms of multimedia enhancements, thereby making the case for the appeal of extra-text exemplars |
| H4 | Fully supported (additive, main effect of modality on perceived vividness) | Greater use of modality in multimedia enhancements will elicit higher levels of vividness as perceived by users interacting with online news reports | Demonstrates vividness can be expressed in terms of modality |
| H5 | Partially supported (interaction effect of representation and modality on immediate assessments) | There will be an interaction between multimedia representation and modality use on immediate response such that the higher the modality, the stronger the effect of representation on issue perception | Examines exemplar modality as a moderator of exemplar influence, thereby providing insight into the role of vividness in exemplification |
| RQ | Not significant | Will the interaction effect of multimedia representation and modality use on issue perception remain stable, increase, or decrease over time? | Assesses duration of exemplification effects as moderated by exemplar modality – an expression of exemplar vividness |
| H6a | Fully supported | Partiality in multimedia representation will not affect evaluation of the quality of story content | Demonstrates biasing effects of unrepresentative exemplars can go unrecognized |
| H6b | Fully supported | Partiality in multimedia representation will not affect perceptions of the Web site or its credibility | Demonstrates biasing effects of unrepresentative exemplars can go undetected |

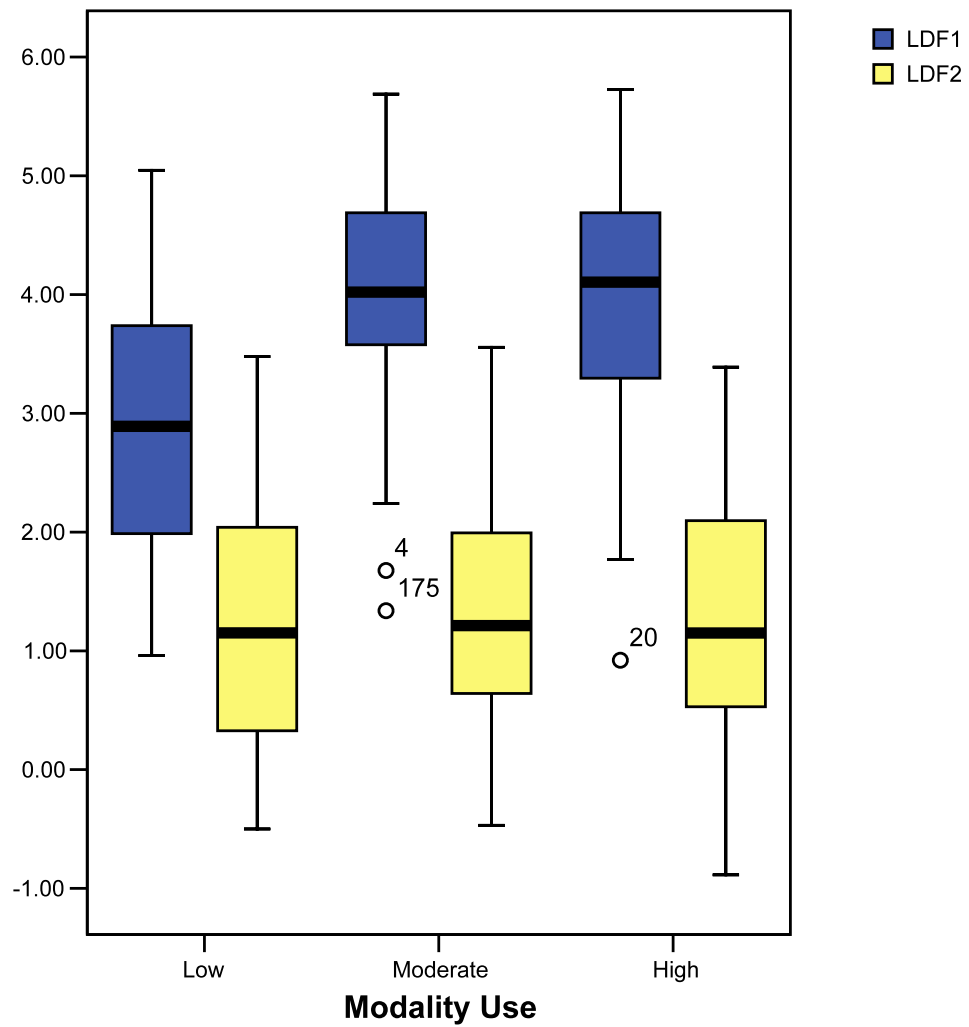
II. Figures

Figure 1. Distributions of LDF Scores by Multimedia Representation (H1 Testing)



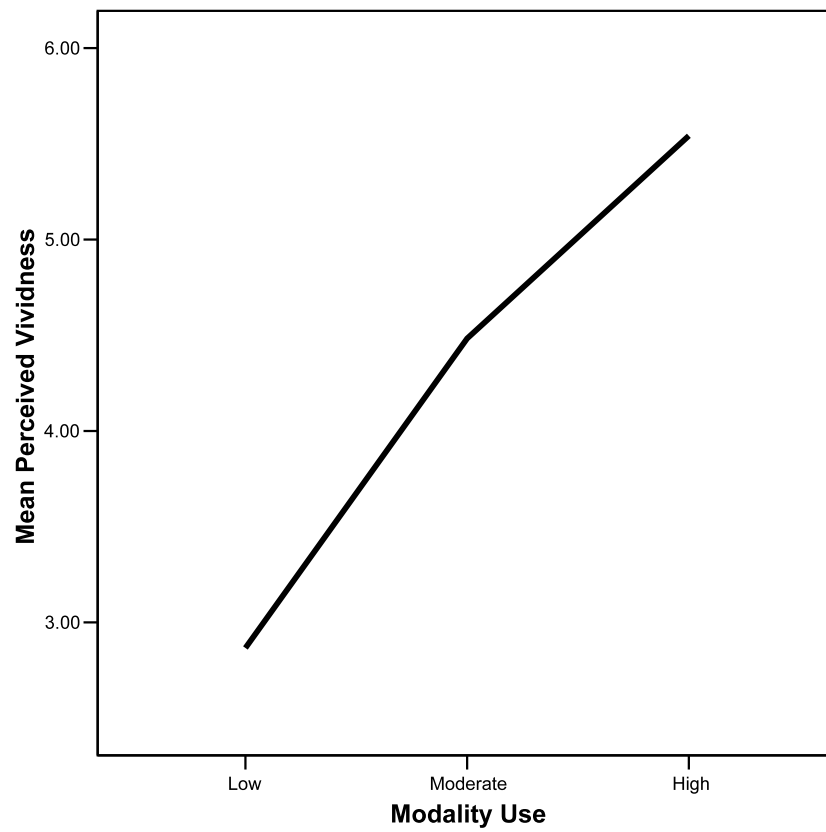
Note. LDF = linear discriminant function; higher LDF scores indicate more negative perceptions.

Figure 2. Distributions of LDF Scores by Modality (H3 Testing)



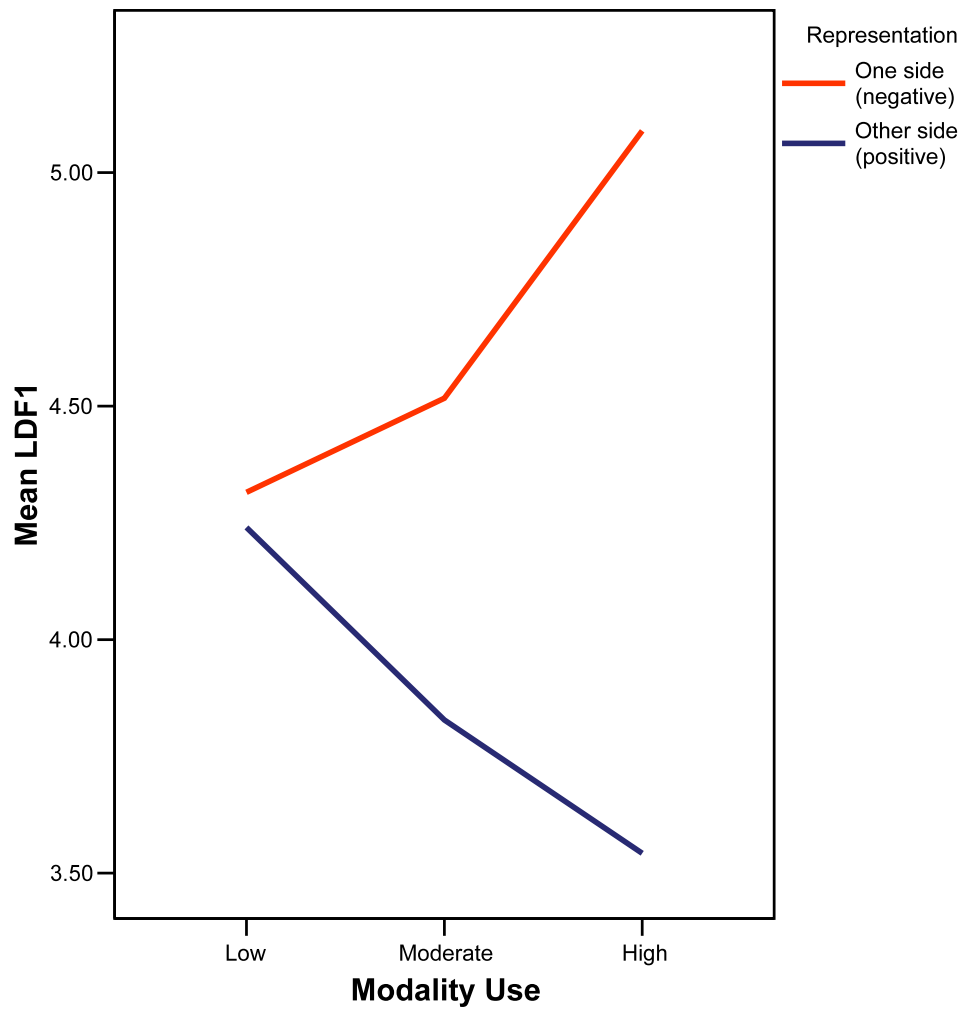
Note. LDF = linear discriminant function; higher LDF scores indicate more positive perceptions.

Figure 3. Main Effect of Modality on Perceived Vividness (H4 Testing)



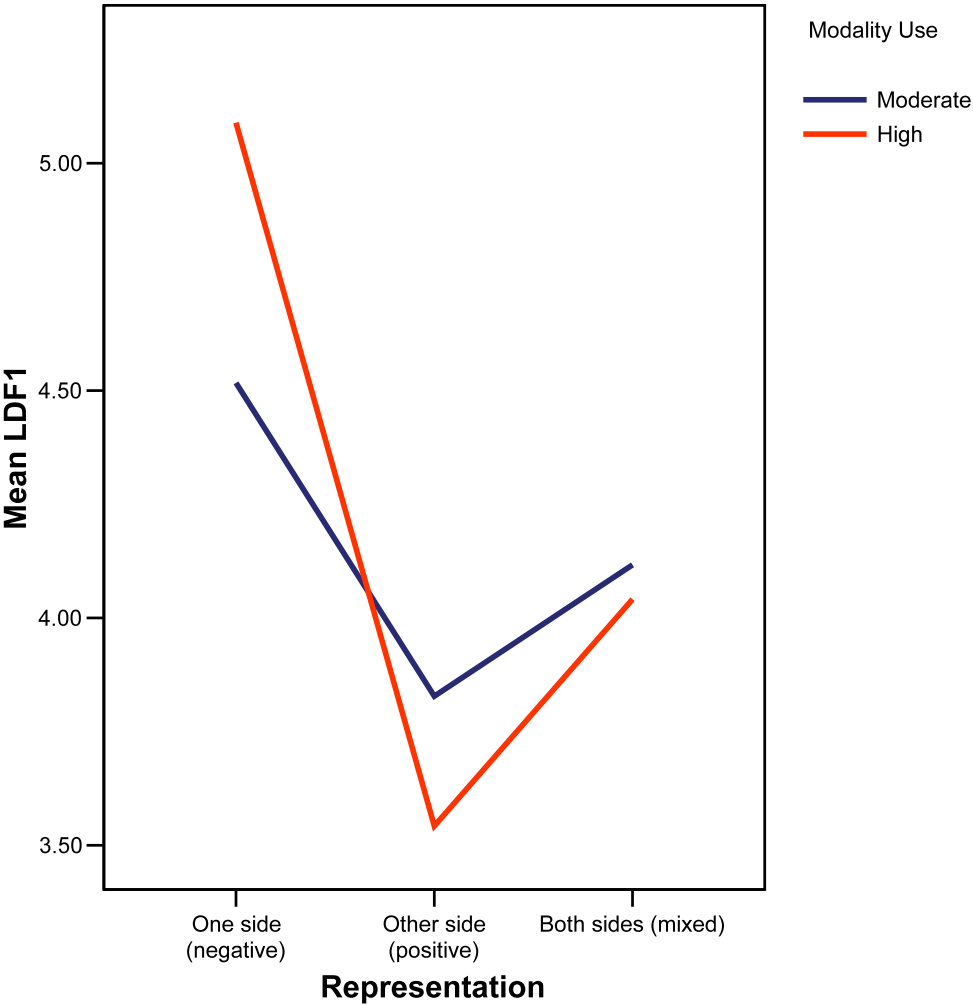
Note. Higher scores indicate higher levels of vividness.

Figure 4. Means for “One side” and “Other side” Groups across Modality Conditions (H5 Testing)



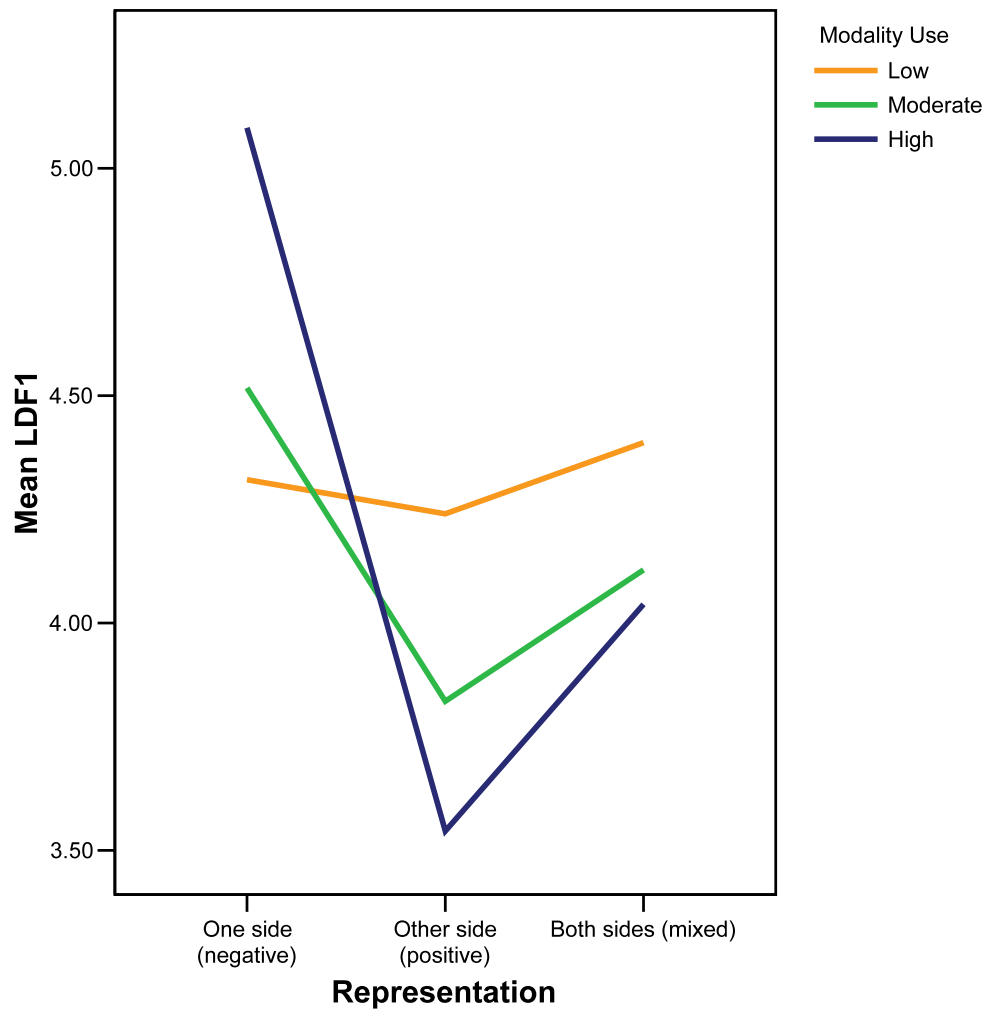
Note. LDF1 = first linear discriminant function; higher scores indicate more negative perceptions.

Figure 5. Means for High and Moderate Modality Groups across Representation Conditions (H5 Testing)



Note. LDF1 = first linear discriminant function; higher scores indicate more negative perceptions.


Figure 6. Means for the Three Modality Groups across Representation Conditions (H5 Testing)



Note. LDF1 = first linear discriminant function; higher scores indicate more negative perceptions.

APPENDIX B

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World Press Photo of the Day

(James Stanfield/National Geographic)



The dusty-orange, beehive-shaped huts of Tall Mardikh, Syria, were built some 200 years ago by an ancient method which has since been lost. The shape and materials of these mud-brick dwellings help them remain cool in summer and warm in winter.

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I. “Mindanao” Story

1. News Text

Peace Paths, War Paths in Mindanao

By Cherlin Docena

Published: 25 minutes ago

MANILA, Philippines

The president of the Philippines has called for the resumption of peace talks with the Moro Islamic Liberation Front separatist group.

President Gloria Macapagal-Arroyo said Wednesday that while new talks will not take place at gunpoint, the newly reconstituted government peace panel is ready to resume the stalled negotiations with Moro Muslim leaders.

"There is no alternative to peace," Arroyo said in a statement. "We are confident it (peace) will happen."

Meanwhile, the Moro Islamic Liberation Front has indicated that it would only go back to the negotiating table if the government returns to the issue of a larger Muslim autonomous zone on Mindanao, something that seems unlikely at this point.

"We are heading toward a situation where the peace process has no future," Haji al-Murad Ebrahim, the chairman of the separatist group, said. "Things are going from bad to worse. Talks will not prosper unless they start off where they stopped."

Ebrahim claimed that Arroyo sought to keep international opinion on her side by suggesting the peace process remained open, "but the truth is she does not have any intention of resolving the conflict."

For almost 40 years now, Mindanao has been home to one of the most tenacious insurgencies in Asia. Fighting under various names, the Moros have confronted the Philippine army since the 1960s.

The 12,000-strong Moro Islamic Liberation Front has been running the largest campaign for a Muslim homeland in this predominantly Christian country. In addition, there is a "revolutionary war" waged by the New People's Army of the outlawed Communist Party of the Philippines. The Abu Sayyaf, an al-Qaeda-linked terror group, is also based in Mindanao.

After decades of violence, the conflict has claimed more than 160,000 lives. The International Committee of the Red Cross said fighting displaces about 100,000 people every year.

Most parties have acknowledged that the use of force can never resolve Mindanao's problems. In 1996, a peace deal creating a small autonomous zone for a rebel group was signed. But elsewhere on the island, conflicts continued. In 2000, the government tried an all-out war but failed to stamp out the Moro Islamic Liberation Front.

Last year marked a turning point in the peace process. A product of arduous negotiations, the plan to create an expanded Muslim area was supposed to be signed by the Moro Islamic Liberation Front and the government. However, the Philippine Supreme Court, on the objections of Christian communities, blocked the deal, ruling it unconstitutional.

The move angered Moro Islamic Liberation Front fighters, who went on the rampage, shooting or hacking to death 37 people in Mindanao. Government forces have launched air and ground offensives targeting three rebel commanders who allegedly led hundreds of their men in the brutal raids.

The rebel attacks and subsequent military assaults killed 100 civilians and displaced about 600,000 people.

The escalation of violence has raised fears of a fierce war that may go out of control in the near future. Experts said the conflict has reached its worst level in five years.

Meanwhile, Manila insists that its dispute with the Moro Islamic Liberation Front over the failed agreement can be resolved by talking, not by fighting.

A spokesperson for the Philippine Embassy in Washington said his "government has not deviated from its commitment of pursuing enduring peace and progress in Mindanao within the framework of Philippine laws and the constitution."

The Moro Islamic Liberation Front stresses that clashes would worsen unless Manila changes its strategy in reviving negotiations with the Moros.

"Failure to honor the all-but-done deal adds to our mistrust," Mohagher Iqbal, the group's chief peace negotiator, said. "If we are forced to defend ourselves, peace will be all the more elusive."

As of now, nobody knows how a political solution can be achieved. But the International Crisis Group recommended that the stalled peace talks with the Moro Islamic Liberation Front resume quickly to prevent intensified hostilities.

"Peace is not around the corner in Mindanao," John Virgoe of the international think tank, said. "But getting a cease-fire here would be an important achievement in humanitarian terms alone."

2. Low Modality Exemplar (pull quote only)

a. One side (negative)

Peace Paths, War Paths in Mindanao

“We are heading to a situation where the peace process has no future. Things are going from bad to worse”

- Haji al-Murad Ebrahim, Moro leader

By [CHERLIN DOCENA](#)

Updated: 25 minutes ago

MANILA, PHILIPPINES -- The president of the Philippines has called for the resumption of peace talks with the Moro Islamic Liberation Front separatist group.

President Gloria Macapagal-Arroyo said Wednesday that while new talks will not take place at gunpoint, the newly reconstituted government peace panel is ready to resume the stalled negotiations with Moro Muslim leaders.

"There is no alternative to peace," Arroyo said in a statement. "We are confident it (peace) will happen."

b. Other side (positive)

Peace Paths, War Paths in Mindanao

“There is no alternative to peace. We are confident it (peace) will happen”

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c. Both sides (mixed)

Peace Paths, War Paths in Mindanao

“Peace is not around the corner in Mindanao. But getting a cease-fire here would be an important achievement”

- John Virgoe, International Crisis Group

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"There is no alternative to peace," Arroyo said in a statement. "We are confident it (peace) will happen."

Meanwhile, the Moro Islamic Liberation Front has indicated that it would only go back to the negotiating table if the government returns to the issue of a larger Muslim autonomous zone on Mindanao, something that seems unlikely at this point.

3. Moderate Modality Exemplar (pull quote plus picture)

a. One side (negative)

Peace Paths, War Paths in Mindanao

“We are heading to a situation where the peace process has no future. Things are going from bad to worse”

- Haji al-Murad Ebrahim, Moro leader

By [CHERLIN DOCENA](#)

Updated: 25 minutes ago

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Loreto Alipala/AFP. The UNICEF has accused the Moro separatist group of using child soldiers, citing as evidence photographs captured in recent fighting

b. Other side (positive)

Peace Paths, War Paths in Mindanao

“There is no alternative to peace. We are confident it (peace) will happen” - President Gloria Macapagal-Arroyo

By [CHERLIN DOCENA](#)

Updated: 25 minutes ago

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President Gloria Macapagal-Arroyo said Wednesday that while new talks will not take place at gunpoint, the newly reconstituted government peace panel is ready to resume the stalled negotiations with Moro Muslim leaders.



Loreto Alipala/AFP. Filipino Muslim children wave peace signs in a march for peace in Central Mindanao

b. Both sides (mixed)

Peace Paths, War Paths in Mindanao

“Peace is not around the corner in Mindanao. But getting a cease-fire here would be an important achievement” - John Virgoe, International Crisis Group

By [CHERLIN DOCENA](#)

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Meanwhile, the Moro Islamic Liberation Front has indicated that it would only go back to the negotiating table if the government returns to the issue of a larger Muslim autonomous zone on Mindanao, something that seems unlikely at this point.

"We are heading toward a situation where the peace process has no future," Haji al-Murad Ebrahim, the chairman of the separatist group, said. "Things are going from bad to worse. Talks will not prosper unless they start off where they stopped."

Ebrahim claimed that Arroyo sought to keep international opinion on her side by suggesting the peace process remained open, "but the truth is she does not have any intention of resolving the conflict."

Photos by Loreto Alipala/AFP. **Peace and war for the future generations in Mindanao**



4. High Modality Exemplar (pull quote plus picture plus video)

a. One side (negative)

Peace Paths, War Paths in Mindanao

“We are heading to a situation where the peace process has no future. Things are going from bad to worse”

- Haji al-Murad Ebrahim, Moro leader

By [CHERLIN DOCENA](#)

Updated: 25 minutes ago

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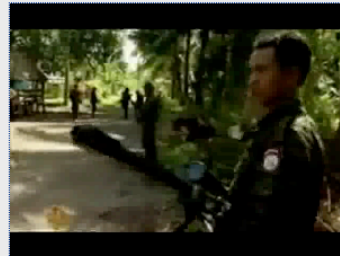
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For almost 40 years now, Mindanao has been home to one of the most tenacious insurgencies in Asia. Fighting under various names, the Moros have confronted the Philippine army since the 1960s.



Loreto Alipala/AFP. The UNICEF has accused the Moro separatist group of using child soldiers, citing as evidence photographs captured in recent fighting

[Related Video. Click to Play](#)



b. Other side (positive)

Peace Paths, War Paths in Mindanao

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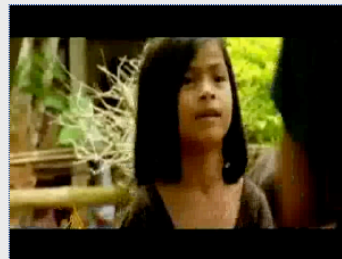
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Loreto Alipala/AFP. **Filipino Muslim children wave peace signs in a march for peace in Central Mindanao**

[Related Video. Click to Play](#)



b. Both sides (mixed)

Peace Paths, War Paths in Mindanao

“Peace is not around the corner in Mindanao. But getting a cease-fire here would be an important achievement”

-John Virgoe, International Crisis Group

By [CHERLIN DOCENA](#)

Updated: 25 minutes ago

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For almost 40 years now, Mindanao has been home to one of the most tenacious insurgencies in Asia. Fighting under various names, the Moros have confronted the Philippine army since the 1960s.

The 12,000-strong Moro Islamic Liberation Front has been running the largest campaign for a Muslim homeland in this predominantly Christian country. In addition, there is a "revolutionary war" waged by the New People's Army of the outlawed Communist Party of the Philippines. The Abu Sayyaf, an al-Qaeda-linked terror group, is also based in Mindanao.

After decades of violence, the conflict has claimed more than 160,000 lives. The International Committee of the Red Cross said fighting displaces about 100,000 people every year.

Most parties have acknowledged that the use of force can never resolve Mindanao's problems. In 1996, a peace deal creating a small autonomous zone for a rebel group was signed. But elsewhere on the island, conflicts continued. In 2000, the government tried an all-out war but failed to stamp out the Moro Islamic Liberation Front.

Photos by Loreto Alipala/AFP. **War and peace for the future generations in Mindanao**



Related Video. Click to Play



5. Video Transcript

a. One side (negative)

(Duration: 1 minute 33’')

(Military helicopter – Voice over)

The frontline of Mindanao’s forgotten war. This monsoon season is seeing the most serious test so far of the cease-fire between the Moro Islamic Liberation Front and the Philippine government. This decades-long conflict is born of complexity: centuries of ethnic, clan, and religious rivalries.

This northern side of the island is preparing for the worst. One town mayor said he’s been warned the MILF could retaliate to a military attack by striking soft targets in the town. It’s a very volatile situation, any confrontation could set off all out war and already stalled peace talks could break down completely.

(Interview – Haji Al-Murad Ebrahim, chairman of MILF)

“It’s very unfortunate. But we are pushed to the wall. We have no alternative. They are conducting military operations against any MILF. We have no way out, except for defend ourselves. And in defending ourselves, it will escalate disagreement.”

(Shooting scene)

Villagers were attacked by MILF fighters and the military quickly retaliated. The armed exchange hasn’t stopped since. But the longer that takes, the more people are growing pessimistic and frustrated. Many are now feeling betrayed by both sides.

(Check point and sad faces)

They say they are innocent victims trapped, and wondering why their chances at a fragile peace seem to blow away every time the winds change.

b. Other side (positive)

(Duration: 1 minute 38’)

(Military helicopter – Voice over)

The frontline of Mindanao’s forgotten war. This monsoon season is seeing the most serious test so far of the cease-fire between the Moro Islamic Liberation Front and the Philippine government.

While troops on both sides remain battle ready, the leaders insist that they are serious about returning to the negotiating table once more.

(Interview – Hermogenes Esperon)

There were difficulties, admittedly, but can we give up on peace itself? No, no, no, no. We will not give up on the peace process. We'll continue negotiations until we would get the final peace agreement."

(Interview – Haji Al-Murad Ebrahim, chairman of MILF)

"As far as the MILF, we are still restraining our people. We still believe the best solution is going back to the peace process. Because we always believe that peace could achieve not only through the negotiating table. We have to build peace on the ground"

(Interview – President Gloria Macapagal-Arroyo)

"There is peace on the ground. There's peace on the ground for almost four years now. And our peace agreement is about political settlement. The thing is there's peace on the ground and it's holding. It's been successful. And it's been successful because this broad coalition has been able to keep the peace. It's been able to isolate the general security threat and it's been able to uplift the lives of the people, Christian and Muslim alike, in this area."

(Pigeon and cheerful children)

Evening prayer begins and there is still hope that both sides can get back to the negotiating table.

c. Both sides (mixed)

(Duration: 1 minute 39")

(Military helicopter – Voice over)

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This northern side of the island is preparing for the worst. Villagers were attacked by MILF fighters and the military quickly retaliated. The armed exchange hasn't stopped since. The conflict now appears further from resolution than for over a decade.

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“We still believe that the best solution is going back to the peace process. We are still restraining our people. But we have no way out, except for defend ourselves.”

Along with the call for peace, a warning: Leading locals to their peace is still a far-off reality.

For many here, Christian and Muslim alike, any government will do, so long they can live in peace and put food on the table.

II. "Africa" Story

1. News Text

Poll Shows Snapshot of African Psyche

By Gari Adamson

Published: 50 minutes ago

NAIROBI, Kenya

Amidst a thicket of troubles, from deadly illnesses like AIDS and malaria to corrupt politicians and deep-seated poverty, Africans say they are better off today than they were five years ago and are optimistic about their future and that of the next generation, according to a poll conducted in 10 sub-Saharan countries by the Global Development Project.

The results offer an unusual and complex portrait of a continent in flux -- a snapshot of 10 modern African states as they struggle to build accountable governments, manage violent conflict and turn their natural resources into wealth for the population.

The poll found that in the main, Africans are satisfied with their national governments, and a majority of respondents in 7 of the 10 countries said their economic situation was at least somewhat good. But many said they faced a wide array of difficult and sometimes life-threatening problems, from illegal drug trafficking to political corruption, from the lack of clean water to inadequate schools for their children, from ethnic and political violence to deadly disease.

The results showed that the struggle for democracy and good governing in Africa is more like a patchwork of gains and setbacks than a steady tide of progress across a continent that has suffered some of the worst instances of misrule. While all of the countries polled are nominally democracies, half of them have suffered serious rollbacks of multiparty representational government in recent years. A majority in each country said corrupt political leaders were a big problem.

Electoral trouble has even tinged Senegal, often seen as a beacon in the volatile West African region because it has never had a coup and has a long tradition of democracy. This year, opposition parties boycotted legislative elections there over accusations of election fraud.

In Nigeria, Africa's most populous nation and top oil producer, the poll results reflect frustration with the way things were going in their country -- 87 percent of those interviewed for the survey said they were dissatisfied. Yet Nigerians were the most optimistic of all the nations surveyed -- 69 percent said they expected that children growing up in Nigeria would be better off than people today.

"We have seen significant strides for democratic liberty and practices here in Africa," said Lewis Lens, director of African Studies at Johns Hopkins University. "It is also a fact that in Africa, average citizens have not seen a significant improvement in their living condition and their material circumstances."

The economic data in the poll give a mixed picture. A plurality of respondents said that their financial situation had improved in the last five years, with the exception of Ivory Coast, Tanzania and Uganda. Many African economies are growing rapidly thanks to oil production.

But more resource wealth has not necessarily led to broad prosperity. Of the respondents in Nigeria, 82 percent said average people were not benefiting from the country's oil wealth.

Salimata Mbengue, a 21-year-old shopkeeper in Ngor, a village at the edge of Dakar, said that she had high hopes for the future of her business but was very worried about the current economic situation of her family.

"I have five brothers, and only two are employed," she said, sitting outside the small convenience store where she sells sodas, candy, biscuits and cartons of milk. "Our parents are retired, and we have to support them. I am hopeful, but it is very hard to get ahead here."

Getting access to clean drinking water was seen as a big problem for a majority in all 10 countries, ranging from 86 percent in Ethiopia to 58 percent in urban South Africa. About half or more in eight countries said that they had been unable to pay for medical care.

But hunger seemed less of a problem -- a majority of respondents in all but Uganda, Kenya and Tanzania said that they had enough money to buy food their family needed.

"The poll found people wary and hopeful," said Lens. "It expresses a complex mix of challenges and opportunities for African development."

2. Low Modality Exemplar (pull quote only)

a. One side (negative)

Poll Shows Snapshot of African Psyche

“In Africa, average citizens have not seen a significant improvement in their living condition”

- Lewis Lens, John Hopkins University

By GARI ADAMSON

Updated: 50 minutes ago

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b. Other side (positive)

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c. Both sides (mixed)

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3. *Moderate Modality Exemplar (pull quote plus picture)*

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Angela Muula/AP: AIDS and extreme poverty continue to threaten the lives of Africans

b. Other side (positive)

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Angela Muula/AP. With a bright smile on her face, Filbert Mwinyi dreams of becoming the very next female president in Africa

c. Both sides (mixed)

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Photos by Angela Muula/AP. Despair and hope in Africa



3. High Modality Exemplar (pull quote plus picture plus video)

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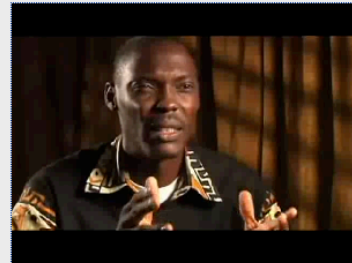
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[Related Video. Click to Play](#)



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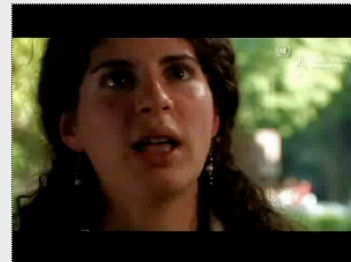
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[Related Video. Click to Play](#)



c. Both sides (mixed)

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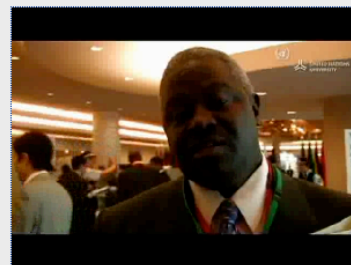
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Photos by Angela Muula/AP. Hope and despair in Africa



Related Video. Click to Play



5. Video Transcript

a. One side (negative)

(Duration: 1 minute 31’')

(Interview Mark Kolo – Mission Supporters League)

The challenges in Africa are great. They are immense, they are diverse, they are numerous. We have issues confronting the continent on many areas.

(Interview Dambisa Moyo – Author “Dead Aid”)

There’s dire poverty. They walk long distances for water. Their lives have become worse, not better. In many countries, people live under either despotic rule. Failed states as you’re aware exist. And the basic... lot of things that people in the West take for granted such as education, health care, infrastructure, even security are things that are not taken for granted at all, in fact, barely exist.

(Interview Esme Bowers – Human Rights Activist)

We also have the problem of woman abuse, of people not being exposed to the world as we know it, being interconnected with each other. There is very poor telecommunication system.

(Jeffrey Sachs, Economist, Columbia University)

Economics was doing things to improve people’s lives. In Africa you see more than any other part of the world the struggle for survival before your eyes. Most of that kind of scourge of extreme poverty has been lifted from most of the rest of the world. So, Africa remains the epicenter of the true human disaster right now. The one thing that surely accompanies extreme poverty is powerlessness, voicelessness. I mean, these people have no voice, we don’t see them.

b. Other side (positive)

(Duration: 1 minute 30’')

(Interview Abdelrahim Khalil – Director Inter Governmental Authority on Development)

I think Africans are capable now to make use of resources that are available and also make use of the foreign aid that they receive. And now Africa is asking for more trade than aid, because there are now potentials in Africa for social development.

(Interview – Virginie Aimard – UNU Capacity Building and Strategic Planning Expert)

So, this shows that it's really possible. It's just a matter of giving it emphasis, giving it priority, giving it the possibility to unfold itself. I have the feeling that what most Africans need is their belief in what they can do and what they can achieve and a lot of resources lie within themselves.

(Interview Mark Kolo – Mission Supporters League)

We need to reinstate hope in the heart of our own people. There's so much potentials buried in the people of Africa, there's so much wealth and resources buried in the soil of Africa. And these things need to be utilized by Africans to meet the needs of Africa and even to the rest of the world. We have so much to offer, I believe so.

(Interview Obiguali Ezekwesili – VP World Bank, Africa)

I think the most important thing about Africa is the trend. This is the best time that we've seen positive trend coming out of the continent, which is the hallmark of the level of engagement that the citizens and the governments are beginning to apply themselves vigorously to. Africa's time has come. And this is the time when Africa is at a tipping point, a tipping to move along with other countries that have taken the benefits of development.

c. Both sides

(Duration: 1 minute 26")

(Interview Wasawa Biriggwa – Ambassador of Uganda)

People believe that Africa is one country. Africa is a very big continent, like Asia and has many countries. And various countries are at different stages of development and also have different types of problems.

(Interview Dambisa Moyo – Author "Dead Aid")

There's dire poverty. They walk long distances for water. Their lives have become worse, not better. In many countries, people live under either despotic rule. Failed states as you're aware exist. And the basic... lot of things that people in the West take for granted such as education, health care, infrastructure, even security are things that are not taken for granted at all, in fact, barely exist. I think there're stories there that.. again, it's challenging for sure, but there're some positive things happening.

(Interview Mark Kolo – Mission Supporters League)

The challenges in Africa are great. They are immense, they are diverse, they are numerous. We have issues confronting the continent on many areas. We've often been painted as the people who largely depend on the rest of the world. And we need to reinstate hope in the

heart of our own people. There's so much potentials buried in the people of Africa, there's so much wealth and resources buried in the soil of Africa. And these things need to be utilized by Africans to meet the needs of Africa.

III. "Emissions" Story (Disguise)

1. News Text

Richest Nations Agree Gas Emissions Cuts

By Christie Dundee

Published: (Date)

TOKYO, Japan

Leaders of the world's richest nations pledged Tuesday to "move toward a low-carbon society" by cutting 80 percent of greenhouse gas emissions by 2050, but they failed to set a goal for cutting emissions over the next decade, and drew sharp criticism from environmentalists, who called it a missed opportunity.

The declaration by the Group of 8 -- the United States, Japan, Germany, Britain, France, Italy, Canada and Russia -- was the first time that industrialized countries had publicly backed an explicit long-term target for eliminating the gases that scientists have said are warming the planet.

"This is a strong signal to citizens around the world," the president of the European Commission, Jose Manuel Barroso, told reporters. "The science is clear, the economic case for action is stronger than ever. Now we need to go the extra mile to secure a global deal in Copenhagen."

The statement left unclear, for instance, if the cuts made by 2050 would be pegged to current emissions levels, or 1990 levels, as many advocates had hoped.

The leaders of the eight industrialized countries, who gathered on the northern Japanese island of Hokkaido for their annual meeting, spent months debating the language of Tuesday's communique in lower-level talks. Critics said it was short on specifics, and that developed and developing countries would need to make much sharper cuts in emissions to head off the worst effects of global warming.

The move came after the world's leading scientific panel released its 1,572-page report on the effects of climate change driven by human activities. The panel predicted widening droughts in southern Europe and the Middle East, sub-Saharan Africa, the American Southwest and Mexico, and flooding that could imperil low-lying islands and the crowded river deltas of southern Asia. It stressed that many of the regions facing the greatest risks were among the world's poorest.

And it said that while limits on smokestack and tailpipe emissions could lower the long-term risks, vulnerable regions must adjust promptly to shifting weather patterns, climatic and coastal hazards, and rising seas.

Without such adaptations, it said, a rise of 3 to 5 degrees Fahrenheit over the next century could lead to the inundation of coasts and islands inhabited by hundreds of millions of people. But if steady investments are made in seawalls and other coastal protections, vulnerability could be sharply reduced.

The leaders of the Group of 8 have been meeting this week in Sapporo, also on the island of Hokkaido, and on Tuesday they issued their own declaration, pledging, without specifics, to work toward reducing emissions in "a deviation from business as usual" if developing countries offered them financial assistance to do so.

"This is a positive answer to the G-8 leaders' demand for action by all major emitters," said David Doniger of the Natural Resources Defense Council in Washington. "That's news."

Tuesday's communique was not the end of the discussion here. On Wednesday, the Outreach Five leaders and their counterparts in South Korea, Indonesia and Australia joined the Group of 8 for a second round of talks and a declaration from the entire group was issued suggesting they believed developed countries should share the biggest portion of the climate change burden.

Alden Meyer, who is tracking the negotiations for the Union of Concerned Scientists, said Tuesday evening, "Developing countries want the industrialized world to do more."

On Wednesday, leaders of developing nations took up the climate change issue and said that they too supported "a long-term global goal for emission reductions," but they were not specific and fell short of supporting the Group of 8 declaration.

"It is good that the developing countries have embraced the principle of a global target that they will participate in," Mr. Clapp said. "It would have been better if the United States and the other G-8 countries would have been willing to step up to the plate and make a strong commitment about what they would do over the next 10 years."

2. Multimedia Accompaniment

Richest Nations Agree on Gas Emissions Cuts

“This is a strong signal to citizens around the world... Now we need to go the extra mile to secure a global deal”

- Jose Manuel Barroso, European Commission

By [CHRISTIE DUNDEE](#)

Updated: 3 hours ago

TOKYO, JAPAN -- Leaders of the world's richest nations pledged today to "move toward a low-carbon society" by cutting 80 percent of greenhouse gas emissions by 2050, but they failed to set a goal for cutting emissions over the next decade, and drew sharp criticism from environmentalists, who called it a missed opportunity.

The declaration by the Group of 8 -- the United States, Japan, Germany, Britain, France, Italy, Canada and Russia -- was the first time that industrialized countries had publicly backed an explicit long-term target for eliminating the gases that scientists have said are warming the planet.

"This is a strong signal to citizens around the world," the president of the European Commission, Jose Manuel Barroso, told reporters. "The science is clear, the economic case for action is stronger than ever. Now we need to go the extra mile to secure a global deal in Copenhagen."

The statement left unclear, for instance, if the cuts made by 2050 would be pegged to current emissions levels, or 1990 levels, as many advocates had hoped.

The leaders of the eight industrialized countries, who gathered on the northern Japanese island of Hokkaido for their annual meeting, spent months debating the language of Tuesday's communique in lower-level talks. Critics said it was short on specifics, and that developed and developing countries would need to make much sharper cuts in emissions to head off the worst effects of global warming.



Cole Mitchell/Reuters. Klaus Töpfer, UN Environment Program, urged faster and deeper cuts in greenhouse gas emissions

[Related Video. Click to Play](#)



4. Video Transcript

(Duration: 52'')

(Interview – James E. Hansen, NASA)

If I could speak with the leaders at the G-8 meeting, I would tell them that the strategy of trying to identify a target for reducing CO₂ emissions is, I think, doomed to failure. You need to look at the basic facts, the basic physics of the problem, the fossil fuel sources, or carbon dioxide. The most important thing is for them to recognize the key role of coal. And unless we have a moratorium that phases out of coal, except for the CO₂ is captured, then we're not gonna solve the problem. Because what has become clear in just the last few years is that the dangerous level of carbon dioxide is a lot lower than what we have been thinking several years ago.

APPENDIX C

QUESTIONNAIRES

I. Pretest Questionnaire I (Version I)

Thank you for your time and participation.

- Please access the two story pages that have been opened on the computer screen. Spend as much time as you need to process the two stories and accompanying multimedia elements such as highlighted quotes, pictures, and video.
- Please put the headphones on, read the text of each story carefully, look at all highlighted quotes and pictures, and click on the video player to watch the related video.
- When you finish accessing the stories, please proceed to the next two pages and answer all questions.
- You can come back and review the stories and multimedia elements when answering the questions.

Please response to all questions listed below

Peace Paths, War Paths in Mindanao

1. Based on your reading of the **text** of the “Peace Paths, War Paths in Mindanao” story, please indicate your level of agreement with the following statements using a scale from 1 to 9 with “1” being “strongly disagree” and “9” being “strongly agree”

a. The text of the report presents both negative and positive sides of the story

| | | | | | | | | | | |
|-------------------|---|---|---|---|---|---|---|---|---|----------------|
| Strongly Disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly Agree |
|-------------------|---|---|---|---|---|---|---|---|---|----------------|

b. The text discusses both hopes and challenges in the Mindanao peace process

| | | | | | | | | | | |
|-------------------|---|---|---|---|---|---|---|---|---|----------------|
| Strongly Disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly Agree |
|-------------------|---|---|---|---|---|---|---|---|---|----------------|

2. Think about the content of **multimedia** elements such as highlighted quotes, pictures, and video that accompany the text of the “Peace Paths, War Paths in Mindanao” story for a minute. On a scale from 1 to 9 with “1” being “extremely negative” and “9” being “extremely positive” please circle the number that best describes the information provided in these multimedia elements.

a. Considering what was reported in the text, the highlighted quote, “We are heading toward a situation where the peace process has no future. Things are going from bad to worse,” is

| | | | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|
| Extremely Negative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Extremely Positive |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|

b. Considering what was reported in the text, the pictorial display of child soldiers in the story is

| | | | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|
| Extremely Negative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Extremely Positive |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|

c. Considering what was reported in the text, the content of the related video is

| | | | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|
| Extremely Negative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Extremely Positive |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|

d. Taken as a whole, the information reinforced in the highlighted quote and the pictorial display is

| | | | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|
| Extremely Negative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Extremely Positive |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|

e. Taken as a whole, the information reinforced in the highlighted quote, pictorial display, and video is

| | | | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|
| Extremely Negative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Extremely Positive |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|

Poll Shows Snapshot of African Psyche

3. Based on your reading of the **text** of the “Polls Shows Snapshot of African Psyche” story, please indicate your level of agreement with the following statements using a scale from 1 to 9 with “1” being “strongly disagree” and “9” being “strongly agree”

a. The text of the report presents both negative and positive sides of the story

| | | | | | | | | | | |
|-------------------|---|---|---|---|---|---|---|---|---|----------------|
| Strongly Disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly Agree |
|-------------------|---|---|---|---|---|---|---|---|---|----------------|

b. The text discusses both gains and setbacks in African development

| | | | | | | | | | | |
|-------------------|---|---|---|---|---|---|---|---|---|----------------|
| Strongly Disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly Agree |
|-------------------|---|---|---|---|---|---|---|---|---|----------------|

4. Think about the content of **multimedia** elements such as highlighted quotes, pictures, and video that accompany the text of the “Poll Shows Snapshot of Africa Psyche” story for a minute. On a scale from 1 to 9 with “1” being “extremely negative” and “9” being “extremely positive” please circle the number that best describes the information provided in these multimedia elements.

a. Considering what was reported in the text, the highlighted quote, “In Africa, average citizens have not seen a significant improvement in their living condition,” is

| | | | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|
| Extremely Negative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Extremely Positive |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|

b. Considering what was reported in the text, the pictorial display of poor women and children in the story is

| | | | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|
| Extremely Negative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Extremely Positive |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|

c. Considering what was reported in the text, the content of the related video is

| | | | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|
| Extremely Negative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Extremely Positive |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|

d. Taken as a whole, the information reinforced in the highlighted quote and the pictorial display is

| | | | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|
| Extremely Negative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Extremely Positive |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|

e. Taken as a whole, the information reinforced in the highlighted quote, pictorial display, and video is

| | | | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|
| Extremely Negative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Extremely Positive |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|

II. Pretest Questionnaire II (Version II)

Thank you for your time and participation.

- Please access the two story pages that have been opened on the computer screen. Spend as much time as you need to process the two stories and accompanying multimedia elements such as highlighted quotes, pictures, and video.
- Please put the headphones on, read the text of each story carefully, look at all highlighted quotes and pictures, and click on the video player to watch the related video.
- When you finish accessing the stories, please proceed to the next two pages and answer all questions.
- You can come back and review the stories and multimedia elements when answering the questions.

Please response to all questions listed below

Peace Paths, War Paths in Mindanao

1. Based on your reading of the **text** of the “Peace Paths, War Paths in Mindanao” story, please indicate your level of agreement with the following statements using a scale from 1 to 9 with “1” being “strongly disagree” and “9” being “strongly agree”

a. The text of the report presents both negative and positive sides of the story

| | | | | | | | | | | |
|-------------------|---|---|---|---|---|---|---|---|---|----------------|
| Strongly Disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly Agree |
|-------------------|---|---|---|---|---|---|---|---|---|----------------|

b. The text discusses both hopes and challenges in the Mindanao peace process

| | | | | | | | | | | |
|-------------------|---|---|---|---|---|---|---|---|---|----------------|
| Strongly Disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly Agree |
|-------------------|---|---|---|---|---|---|---|---|---|----------------|

2. Think about the content of **multimedia** elements such as highlighted quotes, pictures, and video that accompany the text of the “Peace Paths, War Paths in Mindanao” story for a minute. On a scale from 1 to 9 with “1” being “extremely negative” and “9” being “extremely positive” please circle the number that best describes the information provided in these multimedia elements.

a. Considering what was reported in the text, the highlighted quote, “**There is no alternative to peace. We are confident it (peace) will happen,**” is

| | | | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|
| Extremely Negative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Extremely Positive |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|

b. Considering what was reported in the text, the pictorial display of children waving peace signs in the story is

| | | | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|
| Extremely Negative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Extremely Positive |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|

c. Considering what was reported in the text, the content of the related video is

| | | | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|
| Extremely Negative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Extremely Positive |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|

d. Taken as a whole, the information reinforced in the highlighted quote and the pictorial display is

| | | | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|
| Extremely Negative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Extremely Positive |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|

e. Taken as a whole, the information reinforced in the highlighted quote, pictorial display, and video is

| | | | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|
| Extremely Negative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Extremely Positive |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|

Poll Shows Snapshot of African Psyche

3. Based on your reading of the **text** of the “Polls Shows Snapshot of African Psyche” story, please indicate your level of agreement with the following statements using a scale from 1 to 9 with “1” being “strongly disagree” and “9” being “strongly agree”

a. The text of the report presents both negative and positive sides of the story

| | | | | | | | | | | |
|-------------------|---|---|---|---|---|---|---|---|---|----------------|
| Strongly Disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly Agree |
|-------------------|---|---|---|---|---|---|---|---|---|----------------|

b. The text discusses both gains and setbacks in African development

| | | | | | | | | | | |
|-------------------|---|---|---|---|---|---|---|---|---|----------------|
| Strongly Disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly Agree |
|-------------------|---|---|---|---|---|---|---|---|---|----------------|

4. Think about the content of **multimedia** elements such as highlighted quotes, pictures, and video that accompany the text of the “Poll Shows Snapshot of Africa Psyche” story for a minute. On a scale from 1 to 9 with “1” being “extremely negative” and “9” being “extremely positive” please circle the number that best describes the information provided in these multimedia elements.

a. Considering what was reported in the text, the highlighted quote, “We have seen significant strides for democratic liberty and practices here in Africa,” is

| | | | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|
| Extremely Negative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Extremely Positive |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|

b. Considering what was reported in the text, the pictorial display of a girl with a beaming smile in the story is

| | | | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|
| Extremely Negative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Extremely Positive |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|

c. Considering what was reported in the text, the content of the related video is

| | | | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|
| Extremely Negative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Extremely Positive |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|

d. Taken as a whole, the information reinforced in the highlighted quote and the pictorial display is

| | | | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|
| Extremely Negative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Extremely Positive |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|

e. Taken as a whole, the information reinforced in the highlighted quote, pictorial display, and video is

| | | | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|
| Extremely Negative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Extremely Positive |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|

III. Pretest Questionnaire III (Version III)

Thank you for your time and participation.

- Please access the two story pages that have been opened on the computer screen. Spend as much time as you need to process the two stories and accompanying multimedia elements such as highlighted quotes, pictures, and video.
- Please put the headphones on, read the text of each story carefully, look at all highlighted quotes and pictures, and click on the video player to watch the related video.
- When you finish accessing the stories, please proceed to the next two pages and answer all questions.
- You can come back and review the stories and multimedia elements when answering the questions.

Please response to all questions listed below

Peace Paths, War Paths in Mindanao

1. Based on your reading of the **text** of the “Peace Paths, War Paths in Mindanao” story, please indicate your level of agreement with the following statements using a scale from 1 to 9 with “1” being “strongly disagree” and “9” being “strongly agree”

a. The text of the report presents both negative and positive sides of the story

| | | | | | | | | | | |
|-------------------|---|---|---|---|---|---|---|---|---|----------------|
| Strongly Disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly Agree |
|-------------------|---|---|---|---|---|---|---|---|---|----------------|

b. The text discusses both hopes and challenges in the Mindanao peace process

| | | | | | | | | | | |
|-------------------|---|---|---|---|---|---|---|---|---|----------------|
| Strongly Disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly Agree |
|-------------------|---|---|---|---|---|---|---|---|---|----------------|

2. Think about the content of **multimedia** elements such as highlighted quotes, pictures, and video that accompany the text of the “Peace Paths, War Paths in Mindanao” story for a minute. On a scale from 1 to 9 with “1” being “extremely negative” and “9” being “extremely positive” please circle the number that best describes the information provided in these multimedia elements.

a. Considering what was reported in the text, the highlighted quote, “Peace is not around the corner in Mindanao. But getting a cease-fire here would be an important achievement,” is

| | | | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|
| Extremely Negative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Extremely Positive |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|

b. Considering what was reported in the text, the pictorial display of children waving peace signs and holding guns and in the story is

| | | | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|
| Extremely Negative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Extremely Positive |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|

c. Considering what was reported in the text, the content of the related video is

| | | | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|
| Extremely Negative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Extremely Positive |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|

d. Taken as a whole, the information reinforced in the highlighted quote and the pictorial display is

| | | | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|
| Extremely Negative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Extremely Positive |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|

e. Taken as a whole, the information reinforced in the highlighted quote, pictorial display, and video is

| | | | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|
| Extremely Negative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Extremely Positive |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|

Poll Shows Snapshot of African Psyche

3. Based on your reading of the **text** of the “Polls Shows Snapshot of African Psyche” story, please indicate your level of agreement with the following statements using a scale from 1 to 9 with “1” being “strongly disagree” and “9” being “strongly agree”

a. The text of the report presents both negative and positive sides of the story

| | | | | | | | | | | |
|-------------------|---|---|---|---|---|---|---|---|---|----------------|
| Strongly Disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly Agree |
|-------------------|---|---|---|---|---|---|---|---|---|----------------|

b. The text discusses both gains and setbacks in African development

| | | | | | | | | | | |
|-------------------|---|---|---|---|---|---|---|---|---|----------------|
| Strongly Disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly Agree |
|-------------------|---|---|---|---|---|---|---|---|---|----------------|

4. Think about the content of **multimedia** elements such as highlighted quotes, pictures, and video that accompany the text of the “Poll Shows Snapshot of Africa Psyche” story for a minute. On a scale from 1 to 9 with “1” being “extremely negative” and “9” being “extremely positive” please circle the number that best describes the information provided in these multimedia elements.

a. Considering what was reported in the text, the highlighted quote, “The poll found people wary and hopeful. It expresses a complex mix of challenges and opportunities for African development,” is

| | | | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|
| Extremely Negative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Extremely Positive |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|

b. Considering what was reported in the text, the pictorial display of both hopeless and hopeful women in the story is

| | | | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|
| Extremely Negative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Extremely Positive |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|

c. Considering what was reported in the text, the content of the related video is

| | | | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|
| Extremely Negative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Extremely Positive |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|

d. Taken as a whole, the information reinforced in the highlighted quote and the pictorial display is

| | | | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|
| Extremely Negative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Extremely Positive |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|

e. Taken as a whole, the information reinforced in the highlighted quote, pictorial display, and video is

| | | | | | | | | | | |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|
| Extremely Negative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Extremely Positive |
|--------------------|---|---|---|---|---|---|---|---|---|--------------------|

IV. Study Questionnaire I (Version I)

Part I (Session 1)

Thank you for participating in “The Global Journalist” Project 2009

- Please access three news reports on this Web site by clicking on the headlines under ‘TOP STORIES.’
- Take your time viewing each story. If you find a related video on a story page, please put the headphones on and click the play button to watch it.
- When you are finished with accessing the three stories, please turn off the computer screen and go on to the next page to fill out a questionnaire.
- Once you have completed the questionnaire, please hand it in along with your informed consent form.

Please respond to every question in this questionnaire

1. Thinking about what was reported in “The Global Journalist” today, how do you personally feel about the Mindanao conflict in the Philippines? Give your answer as a percentage.

a. Considering unfolding events, what is the possibility of Mindanao facing all-out war?
%

b. Given developments since the 1996 cease-fire, what is the chance of the two sides getting back to the peace process?
%

c. Of all steps taken by both sides this month, what percent do you estimate are triggering more confrontation between the government and the Muslim Moros?
%

2. Please indicate your assessments of the situation in Mindanao. Circle the number that represents your level of agreement with the following statements on a scale from 1 to 9 with “1” being “strongly agree” and “9” being “strongly disagree.”

a. In my opinion, the peace process is dead in Mindanao.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

b. In my opinion, the peace process is well and alive in Mindanao.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

c. In my opinion, the Mindanao conflict is unsolvable.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

d. In my opinion, the Mindanao conflict is solvable.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

e. In my opinion, the current situation in Mindanao is hopeless.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

f. In my opinion, the current situation in Mindanao is hopeful.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

3. Based on your projection, what will happen next to the Mindanao conflict? Please circle the appropriate number to indicate how likely you think it is that each of the following

scenarios will become reality. Use a scale from 1 to 9 with “1” indicating “not at all likely” and “9” being “most likely.”

a. The Mindanao conflict will get worse in the next two years.

| | | | | | | | | | | |
|-------------------|---|---|---|---|---|---|---|---|---|-------------|
| Not at all likely | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Most likely |
|-------------------|---|---|---|---|---|---|---|---|---|-------------|

b. The Mindanao conflict will end with a peaceful solution in the next two years.

| | | | | | | | | | | |
|-------------------|---|---|---|---|---|---|---|---|---|-------------|
| Not at all likely | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Most likely |
|-------------------|---|---|---|---|---|---|---|---|---|-------------|

c. Tension in Mindanao will escalate in the next two years.

| | | | | | | | | | | |
|-------------------|---|---|---|---|---|---|---|---|---|-------------|
| Not at all likely | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Most likely |
|-------------------|---|---|---|---|---|---|---|---|---|-------------|

d. Tension in Mindanao will die down in the next two years.

| | | | | | | | | | | |
|-------------------|---|---|---|---|---|---|---|---|---|-------------|
| Not at all likely | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Most likely |
|-------------------|---|---|---|---|---|---|---|---|---|-------------|

4. Thinking about what was reported in “The Global Journalist” today, how do you personally feel about the declaration by the Group of 8 to cut greenhouse gas emissions by 80% by 2050? Circle the number that represents your level of agreement with the following statements on a scale from 1 to 9 with “1” being “strongly agree” and “9” being “strongly disagree.”

a. In my opinion, the Group of 8 has not done enough.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

b. In my opinion, the Group of 8 took a bold action toward addressing the effects of climate change.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

5. Please indicate your assessments of the climate change issue. Circle the number that represents your level of agreement with the following statements on a scale from 1 to 9 with “1” being “strongly agree” and “9” being “strongly disagree.”

a. Even sharp cuts in emissions at this point are too little and too late.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

b. The situation is not as bad as many people think.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

6. Think about the use of graphical and audio-visual elements on this Web site for a minute. On a scale from 1 to 9, please circle the number that best describes your overall impressions.

| | | | | | | | | | | |
|------------------|---|---|---|---|---|---|---|---|---|-----------------|
| Not at all vivid | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Extremely vivid |
|------------------|---|---|---|---|---|---|---|---|---|-----------------|

7. Think about the combination of text and multimedia such as graphical and audio-visual elements or the lack thereof. On a scale from 1 to 9 for pairs of adjectives at the endpoints, please circle the appropriate number to describe how the Web site delivers information to your mind.

| | | | | | | | | | | |
|------------------|---|---|---|---|---|---|---|---|---|------------------|
| Graphic | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Plain |
| Lively | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Lifeless |
| Vibrant | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Dull |
| Dynamic | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Static |
| Colorful | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Colorless |
| Energetic | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Flat |

8. Think about the use of multimedia or the lack thereof. Please indicate your level of agreement with the following statements, using a scale from 1 to 9 with “1” being “strongly disagree” and “9” being strongly “agree.”

a. I could perceive a lot of dynamism on this Web site.

| | | | | | | | | | | |
|--------------------------|---|---|---|---|---|---|---|---|---|-----------------------|
| Strongly disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly agree |
|--------------------------|---|---|---|---|---|---|---|---|---|-----------------------|

b. There were no sound and no images at all.

| | | | | | | | | | | |
|--------------------------|---|---|---|---|---|---|---|---|---|-----------------------|
| Strongly disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly agree |
|--------------------------|---|---|---|---|---|---|---|---|---|-----------------------|

c. I could feel the stories on this Web site by seeing and listening.

| | | | | | | | | | | |
|--------------------------|---|---|---|---|---|---|---|---|---|-----------------------|
| Strongly disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly agree |
|--------------------------|---|---|---|---|---|---|---|---|---|-----------------------|

9. Based on your experience today, please indicate an overall evaluation of “The Global Journalist” as a Web site providing information about world events. On a scale from 1 to 9 with “1” indicating “describes very poorly” and “9” indicating “describes very well”, please circle the number that indicates how well each adjective describes the “The Global Journalist.”

| | Describes very poorly | | | | | | | | Describes very well |
|---------------------|------------------------------|---|---|---|---|---|---|---|----------------------------|
| Appealing | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Useful | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Positive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Good | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Favorable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Attractive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Exciting | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Pleasing | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Likeable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| High quality | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Interesting | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

10. Based on your experience today, please indicate your perceptions of “The Global Journalist” as a news site reporting on world affairs. On a scale from 1 to 9 for pairs of adjectives at the endpoints, please circle the number that best describes “The Global Journalist.”

a.

| | | | | | | | | | | |
|-------------------|---|---|---|---|---|---|---|---|---|---------------------|
| True | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | False |
| Believable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Unbelievable |
| Probable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Improbable |
| Realistic | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Unrealistic |
| Right | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Wrong |
| Honest | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Dishonest |
| Sincere | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Insincere |

b.

| | | | | | | | | | | |
|----------------------|---|---|---|---|---|---|---|---|---|--------------------|
| Inaccurate | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Accurate |
| Biased | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Unbiased |
| Superficial | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Profound |
| Untrustworthy | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Trustworthy |
| Unreliable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Reliable |
| Nonexpert | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Expert |

11. Please indicate your levels of agreement with the following statements on a scale from 1 to 9 with “1” being “strongly agree” and “9” being strongly “disagree.”

a. It is very likely that I will return to this site.

| | | | | | | | | | | |
|-----------------------|---|---|---|---|---|---|---|---|---|--------------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|-----------------------|---|---|---|---|---|---|---|---|---|--------------------------|

b. I will return to this site the next time I need information about world affairs.

| | | | | | | | | | | |
|-----------------------|---|---|---|---|---|---|---|---|---|--------------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|-----------------------|---|---|---|---|---|---|---|---|---|--------------------------|

12. On a scale from 1 to 9 with “1” being “absolutely” and “9” being “absolutely not,” please circle the number that best reflects your response to the following question: “Suppose that a friend called you last night to get your advice on his/her search for information about nations of the world. Would you recommend him/her to visit this news site?”

| | | | | | | | | | | |
|-------------------|---|---|---|---|---|---|---|---|---|-----------------------|
| Absolutely | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Absolutely not |
|-------------------|---|---|---|---|---|---|---|---|---|-----------------------|

13. Please provide an overall evaluation of the content of each of the three stories. On a scale from 1 to 9, where “1” means “describes very poorly” and “9” means “describes very well”, please circle the number that indicates how well each adjective describes each story.

a. “Poll Shows African Psyche”

| | Describes very poorly | | | | | | | | Describes very well |
|----------------------|--------------------------|---|---|---|---|---|---|---|------------------------|
| Clear | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Comprehensive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Coherent | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Factual | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Fair | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Informative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Objective | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Well-written | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

b. “Peace Paths, War Paths in Mindanao”

| | Describes very poorly | | | | | | | | Describes very well |
|----------------------|--------------------------|---|---|---|---|---|---|---|------------------------|
| Clear | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Comprehensive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Coherent | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Factual | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Fair | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Informative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Objective | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Well-written | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

c. “Richest Nations Agree on Gas Emissions Cuts”

| | Describes very poorly | | | | | | | | Describes very well |
|----------------------|--------------------------|---|---|---|---|---|---|---|------------------------|
| Clear | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Comprehensive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Coherent | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Factual | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Fair | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Informative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Objective | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Well-written | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

14. On a scale from “1” indicating “strongly agree” to “9” indicating “strongly disagree” how would you respond to the following questions

a. Gaza is governed by Fatah leaders.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

b. Venezuela and North Korea are believed to work together to develop a nuclear program.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

15. On a scale from 1 to 9, where “1” means “strongly agree” and “9” means “strongly disagree,” please circle the number that indicates your level of agreement with the following statements

a. Even before reading “The Global Journalist” today, I have been keeping up with news about Africa.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

b. Even before reading “The Global Journalist” today, I have always been informed about what is going on in Mindanao.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

c. Even before reading “The Global Journalist” today, I have been well aware of steps taken by the Group of 8 in dealing with climate changes.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

16. Can you recall any recent events that have a direct relationship with the issues reported by “The Global Journalist” today?

17. What is your age?

18. What is your race?

19. What is your gender? Male Female

20. On an average day, how many hours do you spend online?

21. Have you ever traveled outside of the United States? Yes No

22. Have you ever traveled to the Philippines? Yes No

23. Have you ever traveled to Africa? Yes No

24. Additional comments

PLEASE COME BACK FOR THE NEXT SESSION

Thank you!

Part II (Session 2)

1. Thinking about what was reported in “The Global Journalist” in the previous session, how do you personally feel about development in Africa? Please respond to the following questions. Give your answer as a percentage.

a. Of all the population in Africa, what percent would you estimate are living in extreme poverty and powerlessness?

%

b. Of all countries in Africa, in what percentage of the cases do you estimate has improved their living condition in the last 10 years?

%

c. Of all African nations, what percent would you estimate are getting deeper in trouble?

%

2. Please indicate your assessments of development in Africa. Circle the number that represents your level of agreement with the following statements on a scale from 1 to 9 with “1” being “strongly agree” and “9” being “strongly disagree.”

a. In my opinion, African development runs into deadlock.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

b. In my opinion, African development makes a breakthrough.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

c. In my opinion, African development is unachievable.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

d. In my opinion, African development is achievable.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

e. In my opinion, the situation in Africa is hopeless.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

f. In my opinion, the situation in Africa is hopeful.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

3. Based on your projection, what will happen to Africa in the near future? Please circle the appropriate number to indicate how likely you think it is that each of the following scenarios

will become reality. Use a scale from 1 to 9 with “1” indicating “not at all likely” and “9” being “most likely.”

a. Ten years from now Africa will face a complete failure in development.

| | | | | | | | | | | |
|-------------------|---|---|---|---|---|---|---|---|---|-------------|
| Not at all likely | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Most likely |
|-------------------|---|---|---|---|---|---|---|---|---|-------------|

b. Ten years from now Africa will enter a new era of growth and modernization.

| | | | | | | | | | | |
|-------------------|---|---|---|---|---|---|---|---|---|-------------|
| Not at all likely | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Most likely |
|-------------------|---|---|---|---|---|---|---|---|---|-------------|

c. Ten years from now Africa will fall further behind the rest of the world.

| | | | | | | | | | | |
|-------------------|---|---|---|---|---|---|---|---|---|-------------|
| Not at all likely | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Most likely |
|-------------------|---|---|---|---|---|---|---|---|---|-------------|

d. Ten years from now Africa will start to catch up with the rest of the world.

| | | | | | | | | | | |
|-------------------|---|---|---|---|---|---|---|---|---|-------------|
| Not at all likely | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Most likely |
|-------------------|---|---|---|---|---|---|---|---|---|-------------|

II. Study Questionnaire II (Version II)

Part I (Session 1)

Thank you for participating in “The Global Journalist” Project 2009

- Please access three news reports on this Web site by clicking on the headlines under ‘TOP STORIES.’
- Take your time viewing each story. If you find a related video on a story page, please put the headphones on and click the play button to watch it.
- When you are finished with accessing the three stories, please turn off the computer screen and go on to the next page to fill out a questionnaire.
- Once you have completed the questionnaire, please hand it in along with your informed consent form.

Please respond to every question in this questionnaire

1. Thinking about what was reported in “The Global Journalist” today, how do you personally feel about development in Africa? Please respond to the following questions. Give your answer as a percentage.

a. Of all the population in Africa, what percent would you estimate are living in extreme poverty and powerlessness?

%

b. Of all countries in Africa, in what percentage of the cases do you estimate has improved their living condition in the last 10 years?

%

c. Of all African nations, what percent would you estimate are getting deeper in trouble?

%

2. Please indicate your assessments of development in Africa. Circle the number that represents your level of agreement with the following statements on a scale from 1 to 9 with “1” being “strongly agree” and “9” being “strongly disagree.”

a. In my opinion, African development runs into deadlock.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

b. In my opinion, African development makes a breakthrough.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

c. In my opinion, African development is unachievable.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

d. In my opinion, African development is achievable.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

e. In my opinion, the situation in Africa is hopeless.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

f. In my opinion, the situation in Africa is hopeful.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

3. Based on your projection, what will happen to Africa in the near future? Please circle the appropriate number to indicate how likely you think it is that each of the following scenarios

will become reality. Use a scale from 1 to 9 with “1” indicating “not at all likely” and “9” being “most likely.”

a. Ten years from now Africa will face a complete failure in development.

| | | | | | | | | | | |
|-------------------|---|---|---|---|---|---|---|---|---|-------------|
| Not at all likely | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Most likely |
|-------------------|---|---|---|---|---|---|---|---|---|-------------|

b. Ten years from now Africa will enter a new era of growth and modernization.

| | | | | | | | | | | |
|-------------------|---|---|---|---|---|---|---|---|---|-------------|
| Not at all likely | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Most likely |
|-------------------|---|---|---|---|---|---|---|---|---|-------------|

c. Ten years from now Africa will fall further behind the rest of the world.

| | | | | | | | | | | |
|-------------------|---|---|---|---|---|---|---|---|---|-------------|
| Not at all likely | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Most likely |
|-------------------|---|---|---|---|---|---|---|---|---|-------------|

d. Ten years from now Africa will start to catch up with the rest of the world.

| | | | | | | | | | | |
|-------------------|---|---|---|---|---|---|---|---|---|-------------|
| Not at all likely | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Most likely |
|-------------------|---|---|---|---|---|---|---|---|---|-------------|

4. Thinking about what was reported in “The Global Journalist” today, how do you personally feel about the declaration by the Group of 8 to cut greenhouse gas emissions by 80% by 2050? Circle the number that represents your level of agreement with the following statements on a scale from 1 to 9 with “1” being “strongly agree” and “9” being “strongly disagree.”

a. In my opinion, the Group of 8 has not done enough.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

b. In my opinion, the Group of 8 took a bold action toward addressing the effects of climate change.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

5. Please indicate your assessments of the climate change issue. Circle the number that represents your level of agreement with the following statements on a scale from 1 to 9 with “1” being “strongly agree” and “9” being “strongly disagree.”

a. Even sharp cuts in emissions at this point are too little and too late.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

b. The situation is not as bad as many people think.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

6. Think about the use of graphical and audio-visual elements on this Web site for a minute. On a scale from 1 to 9, please circle the number that best describes your overall impressions.

| | | | | | | | | | | |
|------------------|---|---|---|---|---|---|---|---|---|-----------------|
| Not at all vivid | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Extremely vivid |
|------------------|---|---|---|---|---|---|---|---|---|-----------------|

7. Think about the combination of text and multimedia such as graphical and audio-visual elements or the lack thereof. On a scale from 1 to 9 for pairs of adjectives at the endpoints, please circle the appropriate number to describe how the Web site delivers information to your mind.

| | | | | | | | | | | |
|------------------|---|---|---|---|---|---|---|---|---|------------------|
| Graphic | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Plain |
| Lively | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Lifeless |
| Vibrant | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Dull |
| Dynamic | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Static |
| Colorful | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Colorless |
| Energetic | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Flat |

8. Think about the use of multimedia or the lack thereof. Please indicate your level of agreement with the following statements, using a scale from 1 to 9 with “1” being “strongly disagree” and “9” being strongly “agree.”

a. I could perceive a lot of dynamism on this Web site.

| | | | | | | | | | | |
|--------------------------|---|---|---|---|---|---|---|---|---|-----------------------|
| Strongly disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly agree |
|--------------------------|---|---|---|---|---|---|---|---|---|-----------------------|

b. There were no sound and no images at all.

| | | | | | | | | | | |
|--------------------------|---|---|---|---|---|---|---|---|---|-----------------------|
| Strongly disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly agree |
|--------------------------|---|---|---|---|---|---|---|---|---|-----------------------|

c. I could feel the stories on this Web site by seeing and listening.

| | | | | | | | | | | |
|--------------------------|---|---|---|---|---|---|---|---|---|-----------------------|
| Strongly disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly agree |
|--------------------------|---|---|---|---|---|---|---|---|---|-----------------------|

9. Based on your experience today, please indicate an overall evaluation of “The Global Journalist” as a Web site providing information about world events. On a scale from 1 to 9 with “1” indicating “describes very poorly” and “9” indicating “describes very well”, please circle the number that indicates how well each adjective describes the “The Global Journalist.”

| | Describes very poorly | | | | | | | | Describes very well |
|---------------------|------------------------------|---|---|---|---|---|---|---|----------------------------|
| Appealing | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Useful | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Positive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Good | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Favorable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Attractive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Exciting | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Pleasing | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Likeable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| High quality | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Interesting | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

10. Based on your experience today, please indicate your perceptions of “The Global Journalist” as a news site reporting on world affairs. On a scale from 1 to 9 for pairs of adjectives at the endpoints, please circle the number that best describes “The Global Journalist.”

a.

| | | | | | | | | | | |
|-------------------|---|---|---|---|---|---|---|---|---|---------------------|
| True | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | False |
| Believable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Unbelievable |
| Probable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Improbable |
| Realistic | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Unrealistic |
| Right | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Wrong |
| Honest | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Dishonest |
| Sincere | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Insincere |

b.

| | | | | | | | | | | |
|----------------------|---|---|---|---|---|---|---|---|---|--------------------|
| Inaccurate | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Accurate |
| Biased | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Unbiased |
| Superficial | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Profound |
| Untrustworthy | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Trustworthy |
| Unreliable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Reliable |
| Nonexpert | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Expert |

11. Please indicate your levels of agreement with the following statements on a scale from 1 to 9 with “1” being “strongly agree” and “9” being strongly “disagree.”

a. It is very likely that I will return to this site.

| | | | | | | | | | | |
|-----------------------|---|---|---|---|---|---|---|---|---|--------------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|-----------------------|---|---|---|---|---|---|---|---|---|--------------------------|

b. I will return to this site the next time I need information about world affairs.

| | | | | | | | | | | |
|-----------------------|---|---|---|---|---|---|---|---|---|--------------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|-----------------------|---|---|---|---|---|---|---|---|---|--------------------------|

12. On a scale from 1 to 9 with “1” being “absolutely” and “9” being “absolutely not,” please circle the number that best reflects your response to the following question: “Suppose that a friend called you last night to get your advice on his/her search for information about nations of the world. Would you recommend him/her to visit this news site?”

| | | | | | | | | | | |
|-------------------|---|---|---|---|---|---|---|---|---|-----------------------|
| Absolutely | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Absolutely not |
|-------------------|---|---|---|---|---|---|---|---|---|-----------------------|

13. Please provide an overall evaluation of the content of each of the three stories. On a scale from 1 to 9, where “1” means “describes very poorly” and “9” means “describes very well”, please circle the number that indicates how well each adjective describes each story.

a. “Poll Shows African Psyche”

| | Describes very poorly | | | | | | | | Describes very well |
|----------------------|--------------------------|---|---|---|---|---|---|---|------------------------|
| Clear | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Comprehensive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Coherent | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Factual | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Fair | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Informative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Objective | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Well-written | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

b. “Peace Paths, War Paths in Mindanao”

| | Describes very poorly | | | | | | | | Describes very well |
|----------------------|--------------------------|---|---|---|---|---|---|---|------------------------|
| Clear | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Comprehensive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Coherent | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Factual | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Fair | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Informative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Objective | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Well-written | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

c. “Richest Nations Agree on Gas Emissions Cuts”

| | Describes very poorly | | | | | | | | Describes very well |
|----------------------|--------------------------|---|---|---|---|---|---|---|------------------------|
| Clear | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Comprehensive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Coherent | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Factual | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Fair | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Informative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Objective | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Well-written | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

14. On a scale from “1” indicating “strongly agree” to “9” indicating “strongly disagree” how would you respond to the following questions

a. Gaza is governed by Fatah leaders.

| | | | | | | | | | | |
|-----------------------|---|---|---|---|---|---|---|---|---|--------------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|-----------------------|---|---|---|---|---|---|---|---|---|--------------------------|

b. Venezuela and North Korea are believed to work together to develop a nuclear program.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

15. On a scale from 1 to 9, where “1” means “strongly agree” and “9” means “strongly disagree,” please circle the number that indicates your level of agreement with the following statements

a. Even before reading “The Global Journalist” today, I have been keeping up with news about Africa.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

b. Even before reading “The Global Journalist” today, I have always been informed about what is going on in Mindanao.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

c. Even before reading “The Global Journalist” today, I have been well aware of steps taken by the Group of 8 in dealing with climate changes.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

16. Can you recall any recent events that have a direct relationship with the issues reported by “The Global Journalist” today?

17. What is your age?

18. What is your race?

19. What is your gender? Male Female

20. On an average day, how many hours do you spend online?

21. Have you ever traveled outside of the United States? Yes No

22. Have you ever traveled to the Philippines? Yes No

23. Have you ever traveled to Africa? Yes No

24. Additional comments

PLEASE COME BACK FOR THE NEXT SESSION

Thank you!

Part II (Session 2)

1. Thinking about what was reported in “The Global Journalist” in the previous session, how do you personally feel about the Mindanao conflict in the Philippines? Give your answer as a percentage.

a. Considering unfolding events, what is the possibility of Mindanao facing all-out war?

%

b. Given developments since the 1996 cease-fire, what is the chance of the two sides getting back to the peace process?

%

c. Of all steps taken by both sides this month, what percent do you estimate are triggering more confrontation between the government and the Muslim Moros?

%

2. Please indicate your assessments of the situation in Mindanao. Circle the number that represents your level of agreement with the following statements on a scale from 1 to 9 with “1” being “strongly agree” and “9” being “strongly disagree.”

a. In my opinion, the peace process is dead in Mindanao.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

b. In my opinion, the peace process is well and alive in Mindanao.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

c. In my opinion, the Mindanao conflict is unsolvable.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

d. In my opinion, the Mindanao conflict is solvable.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

e. In my opinion, the current situation in Mindanao is hopeless.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

f. In my opinion, the current situation in Mindanao is hopeful.

| | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|
| Strongly agree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly disagree |
|----------------|---|---|---|---|---|---|---|---|---|-------------------|

3. Based on your projection, what will happen next to the Mindanao conflict? Please circle the appropriate number to indicate how likely you think it is that each of the following scenarios will become reality. Use a scale from 1 to 9 with “1” indicating “not at all likely” and “9” being “most likely.”

a. The Mindanao conflict will get worse in the next two years.

| | | | | | | | | | | |
|-------------------|---|---|---|---|---|---|---|---|---|-------------|
| Not at all likely | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Most likely |
|-------------------|---|---|---|---|---|---|---|---|---|-------------|

b. The Mindanao conflict will end with a peaceful solution in the next two years.

| | | | | | | | | | | |
|-------------------|---|---|---|---|---|---|---|---|---|-------------|
| Not at all likely | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Most likely |
|-------------------|---|---|---|---|---|---|---|---|---|-------------|

c. Tension in Mindanao will escalate in the next two years.

| | | | | | | | | | | |
|-------------------|---|---|---|---|---|---|---|---|---|-------------|
| Not at all likely | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Most likely |
|-------------------|---|---|---|---|---|---|---|---|---|-------------|

d. Tension in Mindanao will die down in the next two years.

| | | | | | | | | | | |
|-------------------|---|---|---|---|---|---|---|---|---|-------------|
| Not at all likely | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Most likely |
|-------------------|---|---|---|---|---|---|---|---|---|-------------|

APPENDIX D

SUPPLIMENTARY MATERIALS

To: Hai Long Tran
Journalism and Mass Communication
CB: 3365

From: Behavioral IRB

Authorized signature on behalf of IRB

Approval Date: 3/30/2009

Expiration Date of Approval: 3/29/2010

RE: Notice of IRB Approval by Expedited Review (under 45 CFR 46.110)

Submission Type: Initial

Expedited Category: 7.Surveys/interviews/focus groups

Study #: 09-0517

Study Title: "The Global Journalist" Project 2009

This submission has been approved by the above IRB for the period indicated. It has been determined that the risk involved in this research is no more than minimal.

Study Description:

Purpose: To understand how the display of attention- grabbing elements on a news Web site influences the way online audiences process new information by looking at the effects of multimedia additions on the perception of international issues reported in the accompanying stories.

Participants: 180 undergraduate students recruited from the research subject pool in the School of Journalism and Mass Communication at UNC-CH.

Procedures (methods): The study involves two sessions. During the initial session, participants will access three news reports and then they will be queried on two stories. In the second session that follows 10 days after the first session, participants will respond to questions concerning the story that they have not been queried about in the previous session.

Regulatory and other findings:

This research meets criteria for a consent procedure which does not include, or which alters, some or all of the elements of informed consent according to 45 CFR 46.116(d) as follows: The study includes deception; specifically, the participants are not informed about the manipulation of stimuli and the creation of experimental and control groups.

Investigator's Responsibilities:

Federal regulations require that all research be reviewed at least annually. It is the Principal Investigator's responsibility to submit for renewal and obtain approval before the expiration date. You may not continue any research activity beyond the expiration date without IRB approval. Failure to receive approval for continuation before the expiration date will result in automatic termination of the approval for this study on the expiration date.

When applicable, enclosed are stamped copies of approved consent documents and other recruitment materials. You must copy the stamped consent forms for use with subjects unless you have approval to do otherwise.

You are required to obtain IRB approval for any changes to any aspect of this study before they can be implemented (use the modification form at ohre.unc.edu/forms). Should any adverse event or unanticipated problem involving risks to subjects or others occur it must be reported immediately to the IRB using the adverse event form at the same web site.

Researchers are reminded that additional approvals may be needed from relevant "gatekeepers" to access subjects (e.g., principals, facility directors, healthcare system).

This study was reviewed in accordance with federal regulations governing human subjects research, including those found at 45 CFR 46 (Common Rule), 45 CFR 164 (HIPAA), 21 CFR 50 & 56 (FDA), and 40 CFR 26 (EPA), where applicable.

Good luck with your interesting research, Hai!

Lawrence B. Rosenfeld, Ph.D.
Office of Human Research Ethics
Co-Chair, Behavioral Institutional Review Board
aa-irb-chair@unc.edu

CC: Rhonda Gibson
Francesca Carpentier, (School of Journalism and Mass Communication), Non-IRB Review
Contact

Consent Form

**University of North Carolina-Chapel Hill
Consent to Participate in a Research Study
Adult Participants Social Behavioral Form**

IRB Study # 09-0517

Consent Form Version Date: 3/26/2009

Title of Study: “The Global Journalist” Project 2009

Principal Investigator: Hai Long Tran

UNC-Chapel Hill Department: School of Journalism and Mass Communication

UNC-Chapel Hill Phone number: xxx-xxx-xxxx

Email Address: hltran@email.unc.edu

Faculty Advisor: Rhonda Gibson

Study Contact telephone number: xxx-xxx-xxxx

Study Contact email: hltran@email.unc.edu

What are some general things you should know about research studies?

You are being asked to take part in a research study. To join the study is voluntary.

You may refuse to join, or you may withdraw your consent to be in the study, for any reason, without penalty.

Research studies are designed to obtain new knowledge. This new information may help people in the future. You may not receive any direct benefit from being in the research study. There also may be risks to being in research studies.

Details about this study are discussed below. It is important that you understand this information so that you can make an informed choice about being in this research study. You will be given a copy of this consent form. You should ask the researchers named above, or staff members who may assist them, any questions you have about this study at any time.

What is the purpose of this study?

The purpose of this research study is to learn about Web users’ responses to online news about international issues.

How many people will take part in this study?

If you decide to be in this study, you will be one of approximately 180 people in this research study.

How long will your part in this study last?

The full study will take an hour to complete. There will be two sessions in this study. The first session will take 40-45 minutes to complete. The second session will follow the first session after 10 days and will take 10-15 minutes to complete. You must complete both sessions to fulfill your participation in this study.

What will happen if you take part in the study?

In this initial session of the study, you will access three stories on a news Web site and fill out a questionnaire. In the second session that will follow this one after 10 days, you will come back and fill out another questionnaire.

What are the possible benefits from being in this study?

Research is designed to benefit society by gaining new knowledge. You may not benefit personally from being in this research study.

What are the possible risks or discomforts involved from being in this study?

There are no known risks in participating in this study. However, there may be uncommon or previously unknown risks. Some discomfort may result from being exposed to information on the news site. You should report any problems to the researchers.

How will your privacy be protected?

Your name will appear on this informed consent form and in the records for the Journalism Subject Pool. Your name will also appear on a temporary list, which will be kept in a safe place and will be destroyed once you complete both study sessions. Names will neither be stored nor used in data analysis. Your responses will only be associated with a code number that we assign, but that number is not and will not be connected in any way with your name. Thus, there will be no way to identify which responses are yours. The data will only be accessible to the researchers, and will be stored separately from consent forms and anything that might identify you. All data collected from this study will be kept on a password-protected computer and paper forms will be kept in a locked cabinet behind a locked door. Data from this study may be kept for seven years, in keeping with the requirements of academic journals, after which time the data may be destroyed. In any presentations, written reports, or publications, no one will be identifiable and only group results will be presented. Although every effort will be made to keep research records private, there may be times when federal or state law requires the disclosure of such records, including personal information. This is very unlikely, but if disclosure is ever required, UNC-Chapel Hill will take steps allowable by law to protect the privacy of personal information. In some cases, your information in this research study could be reviewed by representatives of the University, research sponsors, or government agencies for purposes such as quality control or safety.

Will you receive anything for being in this study?

You will be receiving one hour of departmental research credit for taking part in this study. This includes participating in both sessions, which total 1 hour of your time.

Will it cost you anything to be in this study?

There will be no costs for being in the study. You may choose not to be in the study or to stop being in the study before it is over at any time. This will not affect your class standing or grades at UNC-Chapel Hill.

What if you have questions about this study?

You have the right to ask, and have answered, any questions you may have about this research. If you have questions, or concerns, you should contact the researchers listed on the first page of this form.

What if you have questions about your rights as a research participant?

All research on human volunteers is reviewed by a committee that works to protect your rights and welfare. If you have questions or concerns about your rights as a research subject you may contact, anonymously if you wish, the Institutional Review Board at 919-966-3113 or by email to IRB_subjects@unc.edu.

Title of Study: “The Global Journalist” Project 2009

Principal Investigator: Hai Long Tran

Participant’s Agreement:

I have read the information provided above. I have asked all the questions I have at this time. I voluntarily agree to participate in this research study.

Signature of Research Participant

Date

Printed Name of Research Participant

Signature of Research Team Member Obtaining Consent

Date

Printed Name of Research Team Member Obtaining Consent

“The Global Journalist” Project 2009

INFORMATION SHEET FOR IRB STUDY #: 09-0517

ORIGINATING FROM: School of Journalism & Mass Communication

Principal Investigator: Hai Long Tran

Faculty Advisor: Rhonda Gibson

Phone number: xxx-xxx-xxxx

Phone number: 919-843-8296

Email Address: hltran@email.unc.edu

Email Address: gibsonr@email.unc.edu

Thank you for participating in this experiment. We'd like to share some information about the research design and questions we were seeking to answer.

- Research begins with a compelling question. In this experiment, we wanted to learn
 - how the vivid display of multimedia elements on a news site influences the way you perceive international issues addressed in accompanying news stories.
 - whether such vividly displayed multimedia additions have long-term effects on your issue perception.
- Next, a research design is created to tackle the research questions.
 - First, we created and manipulated the content of a fictitious news Web site to serve our research goal. Only two stories were used to as stimuli, the other served as disguise. The stimulus materials were introduced to you as part of a Web assessment project to ensure that there would be no biasing effects on your responses.
 - Second, we asked you come in for the initial session to access three news stories on the site. You then responded to our questionnaire about your perceptions of the issues addressed in two stories and your evaluations of the Web site and its content.
 - Third, we asked you to come back ten days later to respond to questions about the story that you have not evaluated in the first session.

In order to make sure everyone's responses are not biased by outside influences, **please do not speak with anyone about the study**. It is important that others who may participate in the next couple of weeks **not** know the purpose of this study beforehand.

If you would like to learn more about these topics, you may be interested in reading the following:

Gibson, R., Hester, J. B., Stewart, S. (2001). Pull quotes shape reader perceptions of news stories. *Newspaper Research Journal*, 22(2), 66-78.

Gibson, R., & Zillmann, D. (2000). Reading between the photographs: The influence of incidental pictorial information on issue perception. *Journalism & Mass Communication Quarterly*, 77(2), 355-366.

Zillmann, D., & Brosius, H-B. (2000). *Exemplification in communication: The influence of case reports on the perception of issues*. Mahwah, NJ: Erlbaum.

Zillmann, D., Gibson, R., & Sargent, S. L. (1999). Effects of photographs in news-magazine reports on issue perception. *Media Psychology*, 1(3), 207-228.

Again, thank you for your participation! We appreciate your help!

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