

ABSTRACT

Title of Document: THE EMOTIONS SOCIAL MEDIA BRING TO NEWS: THE EMERGENCE OF EMPATHY AND COMPASSION FOR ELEMENTS OF NEWS MESSAGES.

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This study is an experiment examining qualitative differences of social media as an emerging news platform from traditional main stream media. The study argued a need of the reinterpretation of Marshall McLuhan's notion, "media is the message" in terms of an interaction between news content and media platforms. The study proposed a new concept of users' proximity to news, called "locality," which has been matured by user driven social media environments.

For the study, a laboratory experiment was conducted. A total of 83 college students in a large mid-Atlantic university participated in the laboratory experiment as a representative of young adult news consumers. A main stream media news website and Facebook were assigned as news platforms, while negative and positive news content was provided as news content to subjects. Subjects' responses to news content which was laden in the same directional valence of a platform (negative news on a negative main

stream media news website) and an opposite directional platform (negative news on positive social media) were observed.

Subjects' reaction time and accuracy of memory of news content were measured by psychological software. Subjects also reported their emotions such as valence, intensity, compassion and empathy on negative and positive news content.

Results exhibited an effect of coactivation between news content and media platform. When the valence of news contents and its platform were contradicted, the effect of coactivation such as users' hesitation of decision making was found. The results implicated that users' preoccupied expectation for specific news platform may filter their attention to news stories on a specific platform.

The ambivalent responses of both empathy and compassion on identical negative news contents supported the proposed concept of "locality." It was revealed that media users manipulate their psychological proximity to news within securing safe distances from negative situations in recent user driven communication environments.

Based on the examination, implication of the study for the practice of journalism against confronting challenges was discussed.

**THE EMOTIONS SOCIAL MEDIA BRING TO NEWS: THE EMERGENCE
OF EMPATHY AND COMPASSION AS ELEMENTS IN NEWS MESSAGES**

By

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Dedication

*To my mother and father,
who have guided me to be a lifetime student*

Acknowledgements

Any valuable thing in life cannot be made by one's own will, determination or effort alone. It always can only be realized by the help of others' generosity, sincere friendship, and support which are given without requesting a reward. This is what I have kept reminding myself during my PhD years.

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Dr. Ronald A. Yaros has continuously provided me with a real ground of research. It was in his classes that I have developed my dissertation. Dr. Kalyani Chadha has nourished me with diverse perspectives of communication theories in and outside of the field. Dr. Bo Xie encouraged me to present my first research paper. Her passion for research was exemplary of young researchers to me. Dr. Hong Xiao helped me overcome my lifetime anxiety about statistics. Her office was kindly open to a backward student like myself. Dr. Alan Neustadt had me realize how much interesting and hard Social Network Analysis is. His lecture was filled with sociological imagination. I'd like to extend my special thanks to Dr. Linda Steiner. As my PhD Director, her support has kept me on my way against various difficulties.

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My brother Youngtae has shown me a great courage for life over the past four years. I am proud of him, my sister-in-law and my two adorable nieces. My mother-in-law, who passed away in August 2011, let me know the true dignity of people. My aunt, Soonok Chong has made me strongly believe that good will never vanish.

My mother's relentless diligence and endurance, even in her late 70s, has always served as a wake-up call for me. My last father has taken care of me even in dreams. Memory of his gentleness has soothed me.

My husband Dr. Kyeongdal Choi has been the greatest supporter of my PhD work. His generosity and advice enable me to keep moving. I rediscovered him as a respectful senior researcher during my PhD years.

Over all the fortunes I have had so far, the most priceless free was and is the great company with my daughter Seoyoon and my son Hyeokjae. They are guiding stars of my life. Thanks to their company, I did not get lost. Regardless of their mom's insecurity, they have been growing up as beautiful teens.

Love you, Seoyoon and Hyeokjae!

August 3, 2012

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Chapter 1: Introduction

Marshall McLuhan(1964/1994) made his mark in communication theory with the simple maxim, “medium is the message.” McLuhan’s insight, mainly intended to describe television, had to do with the idea that the form of a medium embeds itself in that it transmits a message, creating a symbiotic relationship by which the medium influences how the message is perceived.

However insightful the maxim was at the time, a half century has passed since he uttered it and society has yet another revolutionary communication technology to understand. Another one of McLuhan’s insights had to do with the idea that a new media system causes the basic assumptions society has about the old one, sometimes implicitly stated, to come under examination. As is the case today.

Media, Message, Contents and Platform

As the term “mass media,” which included newspaper, radio, television, and film has been exchanged with the term “mainstream media,” McLuhan’s “message” has been conflated with the ideas of both “content” and “meaning.” Especially, the development of content analysis methods in social science in the 20th century has accelerated the confusion. Content analysis has been based on massive supplies of mass media messages from newspaper, radio, magazine, movie and television. Berelson (1952) who pioneered content analysis argued that the use of mass communication could be data which provides answers for scientific hypotheses. Regardless of the diverse conceptualization of the idea of “content,” either implicit or

explicit, “a stereotypical aim of mass media content analysis is to describe how a controversial issue is ‘depicted’ in a chosen genre” (Krippendorff, 2004, p. 28)

Content analysis, however, has been challenged by emerging media, if for no other reason than the explosive body of information provided by the Internet. This new technology also brought with it questions about validity and reliability of content analysis as a research method. Challenging natures of the Internet in terms of content analysis rest on the assumptions that:

1) The interactivity between text and users (Kioussis, 2002; McMillan & Hwang, 2002; J. E. Newhagen, Cordes, & Levy, 1995; Rafaeli, 1988; Rafaeli & McCarthy, 2007).

2). The applicability of existing traditional rules of categories, such as units of analysis (Ha & James, 1998; Massey & Levy, 1999; McMillan, 2000).

The challenge of which traditional content analysis confronted with the Internet mirrored the two critical issues of media study which should be addressed: new audiences and media platforms.

Different from traditional audiences of mass media, “new audiences” of the Internet environment are regarded as “users.” They are “active (i.e. selective, self-directed, producers as well as consumers of texts) and as both embedded in and distanced from specific context of use” (Livingstone, 1999, p. 16). Researchers claimed that the end of mass communication, witnessing the transfer of initiative to control text from message senders to users (Shannon & Weaver, 1949), and from the one-way communication to two-way, interactive exchange (S. H. Chaffee & Metzger, 2001).

But more importantly, the new media and corresponding emergence of new audiences have provoked a reexamination of the concepts of both “media” and “message,” just as McLuhan would have predicted.

The Idea of a Media Platform

The flexibility or fungibility of the physical technology used to support the Internet, first the desktop computer, then the laptop, and handheld devices, challenges the traditional notion of an apparatus as medium assumed by McLuhan. It led to the idea that a “platform” has emerged. While without conceptual ragged edges, the idea of a “platform” has come to represent the physical place where content appears. For instance, it is now common to hear the idea that users of diverse media circulate contents “across multiple media platforms” (Jenkins, 2006, p. 2). A recorded song on YouTube can be replayed across laptop computer, MP3 players, and smart phones by the consumers’ active migration of contents. Diverse communication vehicles are regarded as media platform which play the role of the brokerage of content regardless of their unique technological functions or usage.

Originally, the platform was referred to as a unique character of “mash-up” in computer science, which allows the sharing of other applications on the host application by implementing Application Programming Interface (API). The host application plays the role of a platform for other applications (Cormode & Krishnamurthy, 2008; O’Reilly, 2005).

But at the same time, the notion of a “hard” platform frequently seems also to embody the notion of “soft” programming as well. As of this writing, the

representative example of a “platform” is Facebook. Facebook can be displayed on a number of hardware devices. Regardless of the hardware apparatus, if Facebook can be realized, it maintains its unique character.

The connotative meaning of the term “platform” has taken on a political and social frame. Both YouTube and Wikipedia stand out as contemporary examples, which facilitate participation, collaboration and new digital democracy by the average person (Cormode & Krishnamurthy, 2008, p. 9; Han; Song, 2010) .

As mentioned, the issue, the ontology of platform, however, has not definitively delimited to hardware or software and seems to be a hybrid of both. For example, Facebook has been differentiated from the websites of traditional main stream media such as Washington Post.com and CNN.com. However, there has been no technological revolution between Facebook and traditional mainstream media websites, which “alter the fundamental structural elements” (Kuhn, 1970, p. 102) .The revolution which engendered the “media platform” is not a replacement of previous fundamental structures. Rather, it is a more complex ways of interaction between old and new media (Jenkins, 2006, p. 6). If for no other reason than the fact that the emergence of the idea of a “platform” has not been accompanied by an obvious advance or shift in hardware technology, its ontology is, and may well continue to be more subtle and nuanced than has been the case in earlier revolutionary media system transformations.

While McLuhan’s idea of “medium” might not undergo a great deal of stress making the transition to “platform,” the notion of “message,” and “content” do.

The Importance of Ontological Clarity between Message and Content

McLuhan's notion of "medium" may seem straightforward. His ideas of "message" have become more and more problematic as new media systems have emerged. At least two distinct conceptualizations can be considered. The idea of "message" might be considered in terms of narrative theory (Abbott, 2002) . However, in terms of information theory (Shannon & Weaver, 1949), it might be better described by the idea of "content." In the first case content might be the author's intended message, or, for instance it might have cultural underpinnings. In the latter case, that meaning is embedded via some symbol system in a physical object, such as a book, or the image on a computer screen. Although McLuhan probably implied both, a mistake easy to make given the state of the art technology, television, available to him at the time where technology and content were inexorably linked.

But making the distinction becomes important in new media because of the mutability of platforms. Here the door opens for the idea that the "message" may shift or interact with different platforms, even though its physical representation content, does not. Since identical content can be migrated among diverse media platforms, "What we are now seeing is the hardware diverging while the content converges" (Jenkins, 2006, p. 16) . Under this environment, whether the effects of the media attribute to the specific platform or contents or interactions between platform and contents have been questioned.

So far the interaction between platform and contents in news has been mainly dealt with based on content and form. For example, a study found that when tabloid news dealt with calm news items, they were better recognized and recalled than

arousing news items from the same source. (Grabe, Lang, & Zhao, 2003).

Comparing the tabloid TV news magazine genre with a more respectable one, it has been examined that diverse formal technology such as the ability to zoom in and out, photographing with eye witness view and the frequencies of audio effect make audiences perceive each genre differently (Grabe, Zhou, & Barnett, 2001) .

However, the interaction between media platform and content, when it comes to the media effect on users, has not been fully addressed. When McLuhan asserted his unique dichotomy of hot/cool media, he slightly insinuated the interaction between platform and contents which is determined by engagement of audiences. For example, he asserted that if TV had come before Hitler's reign, "there would have been no Hitler." McLuhan argued that Hitler who used the hot medium, radio for his political agitation could not have gained popularity through TV (McLuhan, 1994). As a cool medium, TV rejects hot figures like Hitler who dominate the medium while preventing engagement of audience. In spite of his insights of the interaction of media platform and contents, McLuhan's own definitions of media and contents are still confusing to be employed for examining the interaction between platform and media in this contents migratory communication environments across diverse platforms.

In this regard, the study aims to examine to measure whether users' emotions are affected mainly by platform, content, or by interactions between the two. In chapter 2, to examine the interaction between platform and contents, coactivation theory from Psychology has been employed as a theoretical framework.

Psychological Proximity of Communication

McLuhan made another maxim on human extension by media. He declared that “as electrically contracted, the globe is no more than a village”(1964/1994, p. 5). Since the emergence of the commercial telegraph in 1839, the sense of distance from an event to the media interface has been decreasing in both time and space. The advent of ubiquitous electronic media in the most recent two decades further decreased the user’s sense of distance from the event.

The awareness of one’s location is the basic information for a living organism. For a human who has the traits of an animal as well as an intelligent social being, the sense of locality must be a manageable complexity. Although this project is not been completely separated from geographical and temporal proximity, the sense of locality in new media is mainly based on psychological proximity. Psychological proximity is “imaginary work ” (Lieberman & Trope, 2008). In current society, the production of psychological proximity is mainly supported by globally networked, computer-mediated communication. In the connected environment of recent communication society, the sense of locality is a critical daily project for human agents.

This study claims that the sense of location in current society should be reconceptualized in the context of emergent communication systems and human praxis, that is, “social media” and “users.” To address this issue, “locality” was raised as a focal concept (Chaffe, 1991) of the study. Being built as a focal concept, “locality” should be conceived beyond its lexical definition. In everyday use, locality means “a particular neighborhood, place, or district” or “ the fact or quality of having position in space” (“The American Heritage College Dictionary," 2002). It is different

from the lexical meaning, “locality as a phenomenological property of social life, a structure of feeling which is produced by particular forms of intentional activity and which yields particular sorts of material” (A. Appadurai, 1995). Neighborhoods are situated communities characterized by their actuality, whether spatial or virtual. In this regard, locality should be divided into spatial and contextual dimensions. The contextual dimension includes social relationships, such as family, friendship regardless of the specific physical presence of social actors.

Throughout the 20th century, changes in physical proximity and distance have “dislocated,” “disembedded,” and “disembodied” the individual from local, collective and co-present social relations (Green, 2006). In terms of time, the social implications of the new media technology such as cellular phones and the Internet can be epitomized as “always available” (Green, 2006, P.261). In terms of geography, the present era is the first in which we have the discovery of aspatial simultaneity. As witnessed in everyday life, “the coordination and visualization of events (are) taking place at the same time in different spaces” (Cardoso, 2006, p. 116). While people have gradually discharged themselves from the “tyranny of distance,” they have internalized “aspatial simultaneity” in everyday life. As Gay et al researched with Sony’s Walkman, regardless of the user’s physical presence, individuals reside themselves in their “private, subjective, and emotional geographies ... transforming public space into a continuation of private, subjective experiences” (Green, 2006, p. 1). These private, subjective and emotional geographies can be considered as an psychological proximity of location. Previous studies mainly examine the dislocation of geographical locality corresponding to adapting ubiquitous personalized

communication devices. Yet, the formation of the psychological sense of location, which is based on personal experience and the degree of emotional attachment corresponding to their communication via technology such as social media, has not yet been fully addressed.

To explicate the concept of “locality” in the context of current new media, two key aspects of emotions in social media environments were addressed. In chapter 2, emotions, in particular, compassion and empathy will be examined as the psychological foundation of “locality.” In the media study which majors in the relationship between human psychology and the media effect has been focusing mainly on negative emotions such as anxiety and arousal. However, current prevailing social media are characterized; 1) Web as platform 2) participatory web 3) user initiative 4) connectivity between users 5) openness 6) democratization and 7) ability to post content in diverse forms (Beer & Burrows, 2007; J. T. Cacioppo & Bernston, 1994; Han, 2010b; Millard & Ross, 2006; O'Reilly, 2005; Song, 2010). In short, positive affections such as empathy and compassion are critical motives when people engage in the information on social media rather than negative surveillance such as anxiety and arousal. These relational emotions such as compassion and empathy may work as building blocks of human communication in social media. In this regard, compassion and empathy were used as operational variables which enables to measure subtle nature of psychological proximity, “locality.”

To conclude, the study aimed to reconceptualize problematic and yet fully examined concepts of media study such as media, message, platform and proximity. To argue that what is “new” in new media which makes a substantial

conceptualization of media, message, platform and proximity, the comparison between traditionally dominating mainstream media and recently emerging social media has been conducted. As a starting point of the study, a pretest has been conducted. Chapter 4 includes the results of an exploratory pretest which explicated the nature of social media as emotional media by experimental online survey.

Empirical evidence of the study was elicited from the results of a laboratory experiment in chapter 5 and 6. To achieve ecological validity of the study as well as to examine the imminent crisis of journalism which has been challenged by new media, the study used news on mainstream media and social media. The research probed the current praxis of users while consuming media, which is the driving force of qualitative shift in communication between past and present.

Chapter 2: Emotions and Locality

“The emotions have always been of central concern to men. In every endeavor, in every major human enterprise, the emotions are somehow involved. Almost every great philosopher from Aristotle to Spinoza, from Kant to Dewey, from Bergson to Russell has been concerned with the nature of emotion and has speculated and theorized about its origins, expressions, effects, its place in the economy of human life.”
(Plutchik, 1962, p. 347)

The statement above is ironic because the study of emotion has long been “underprivileged.” It was not included in mainstream academic psychology until the 1960s (Frijda, 1988; Lazarus, 1991). Although scholars of emotions claim that “emotional phenomena are controlled by empirical regularities” (Frijda, 1988, p. 349), a diverse range of definitions of emotions usually accompanying work in the area. This may have to do with the very nature of emotions, where its subtlety has been enumerated for over a century (James, 1961). For example, the emotional process involves diverse variables such as an antecedent, mediating process, and outcomes or responses (the system principle); The orientation of change in emotion (the process principle) and a stable person –environment relationship (the structure principle) all seem to be interdependent; (Lazarus, 1991, p. 39). Recent progress in the field of emotion has revealed that each category of emotion, such as fear, has a “unified biological basis,” composed of subcortical circuits, a specific part of cortical region

and set of behaviors such as a facial expression (Barrett, 2012, p. 413) . However, many scientists still wrestle with the question of whether emotions are real.

Despite the subtlety of its nature, the most generally subscribed perspective on emotion has its foundation in a functional approach: emotion serves to enhance the probability of survival in complex and possibly threatening environments. Although emotion could be represented by diverse “languages” such as “subjective feeling, cognitions, impulses to action, and reaction,” the core function can be epitomized as complex adaptive reactions for survival. At higher levels, emotion is often used to exchange signals or intentions within members of a social group to support maintenance of a society(Plutchik, 1980).

In sum, the functional significance of emotion has been the main domain of emotion research, and this functionalist view on emotion has served as dominant perspective for media study as well. In media research, the role of emotions has been dealt with seriously, since it is intimately associated with the main purpose of media message; “to attract attention, to be remembered, to entertain, and to persuade” (Ravaja, 2009, p. 207).

News and Emotions

Valence and Intensity

From the functionalists’ view, news is most likely bad news. Much like animals, humans monitor their environment to identify potential threats such as crime, accidents and natural disasters. This surveillance function is regarded as the main reason why people are interested in the news (Shoemaker, 1996). As a consequence, the roles of negative emotions, which signal possible danger to users have been most

widely studied in media research. For example, Newhagen & Reeves (1992) showed compelling negative images affect television news viewer memory. Lang & Newhagen (1996) examined the effect of negative video in news stories on audiences' attention, message processing capacity and retrieval of the story. The underlying structure of emotion, from the functionalist's view, has been regarded as "hedonic valence (ranging from negative to positive) and intensity or arousal (ranging from low to high)" (J. E. Newhagen, 2010, p. 11) . However, other competing theories of emotion are also based on categorical schemes based on discrete emotional states, such as empathy and compassion (Lang, 1988).

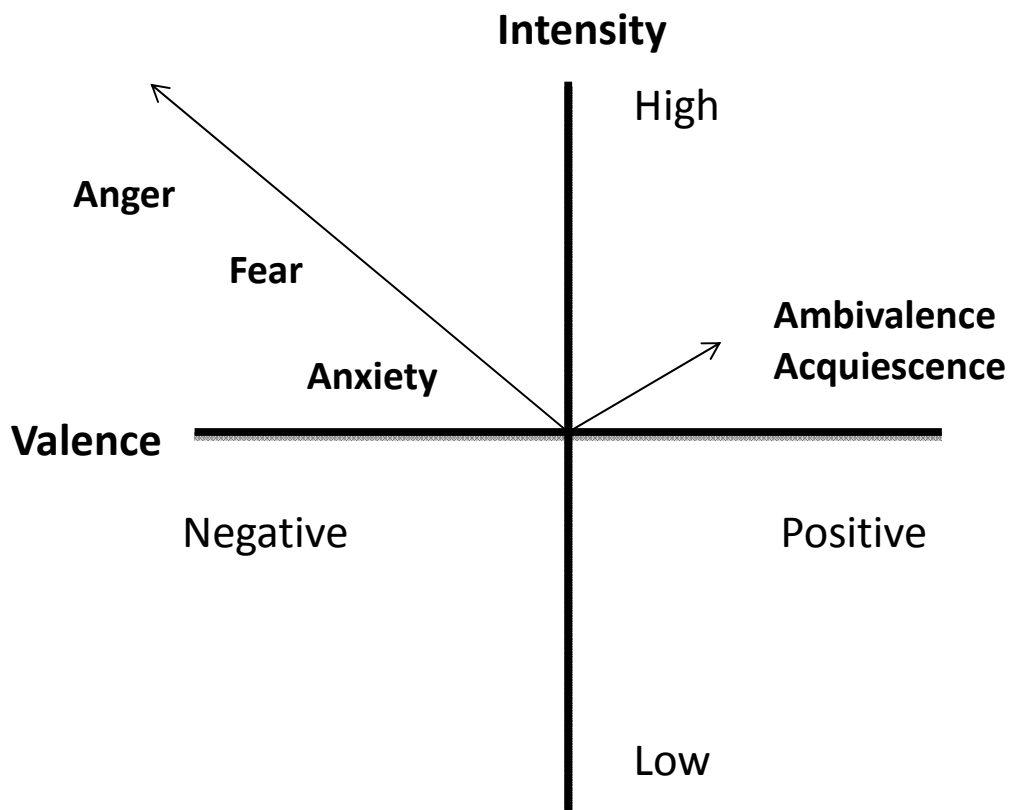
Regarding the influence of valence, there has been reports that under the control of arousal, positive messages are better remembered than negative images among television message (A. Lang, Dhillon, & Dong, 1995). Studies have examined that memory of information is closely related to subjects' emotional status. It was found that the happiness and sadness of subjects were associated with different types of information (Levine & Burgess, 1997).

Intensity or arousal is another important component, which has been regarded as an underlying emotion by media researchers. The intensity of news is often measured by journalism as "(the) combined value of deviance and social significance" (Shoemaker & Cohen, 2006, p. 7). Deviance is usually thought of as an unusual and negative novelty, oddity, or conflict. Social significance is determined by importance or impact (Shoemaker & Cohen, 2006). However, deviance and social significance are not always mutually exclusive. In terms of intensity, news such as celebrities involved in a sex scandal may cross social norms sufficiently labeled deviant, but

does not rank as legitimate news in the same way such a story about a presidential candidate's election campaign might, even though both might draw the user's attention.

Founded on these two basic underlying dimensions, valence and intensity, much about human responses to emotion-laden news media messages can be understood. Valence and intensity are not independent. They can mutually affect each other and produce diverse behavioral outcomes such as ambivalence. Newhagen (2010) visualized the relationship of valence and intensity and their behavioral outcomes on coordinates, shown in figure 1.

Figure 1. Valence and Intensity and Appropriate Behavioral Outcomes



Core emotions can be described well by valence and intensity, but recent research shows those are not sufficient to describe the nature of emotion. While it is certain that emotion has biological underpinnings, research claimed, emotion is realized based on a “socially shared conceptual knowledge” (Barrett, 2012, p. 413). As Mead (1934/1967) argued, human behaviors are determined between the conduct of “biologic individual” as well as the “socially self conscious individual” (p. 347). As social beings, human are never really “alone,” even if they are physically isolated, as long as they “read, listen to the radio, or watch TV; others are still there” (Batson, 1990, p. 336). “Putting oneself in other’s place” is a necessary condition of human existence. In this regard, emotions which enable human to maintain themselves as social beings should be addressed at a “higher phylogenetic level”(Plutchik, 1980) of emotions, endowing an individual with tools needed for membership in a society. These emotions are nurtured by communally consumed socio-cultural artifacts including the news. True, before addressing these higher phylogenetic emotions, “core” or “primal” emotions such as fear and anger have to be understood. But from that understanding a more nuanced model of emotion can be addressed and examined as higher order emotions such as love, fondness, caring, attraction, empathy and compassion (Lazarus, 1991). Two such “higher order” emotions, empathy and compassion, are of particular interest to this project because they might be elicited when the valence of their media platform and content are appositionally coactive. That will be described in greater detail in a subsequent chapter.

Empathy and Compassion

Empathy has been defined as “sharing another’s feeling by placing oneself psychologically in that person’s circumstance,” while compassion has been related as “an altruistic concern for other’s suffering and the desire to alleviate it” (Lazarus, 1991, p. 287). In some daily vernacular usages, the meaning of empathy and compassion are often used interchangeably. However, empathy is more an identification of oneself with others either positively or negatively, while the key of compassion is a willingness to help others who are suffering in negative situation (Goetz, Keltner, & Simon-Thomas, 2010). In the early 1990s, empathy and compassion were both regarded as “problematic emotions” (Lazarus, 1991, p. 287) which cannot be empirically defined as clearly.

Recent research on compassion, however, substantiates it as a distinctive emotion unique from empathy. An academic consensus has emerged, where “compassion as a distinctive affective state” which enhances the welfare of vulnerable offspring, enables desirable mate selection and cooperation between non-kin relationship (Goetz, et al., 2010, p. 364). Evidence supporting this notion has come from come from what?? examines as diverse as measures such as heart rate, respiratory sinus arrhythmia (RSA) and skin conductance along with self-report of compassion of subjects (J. Cacioppo, Berntson, Larsen, Poehlmann, & Ito, 2000; Eisenberg et al., 1988; Eisenberg et al., 1994) .The results of various research have contended for a long time. The implication of psychology of human being as “social egoists,” that presupposes that “we are capable of caring about, ultimately, ourselves.” The evidence of research of compassion has empirically exhibited the

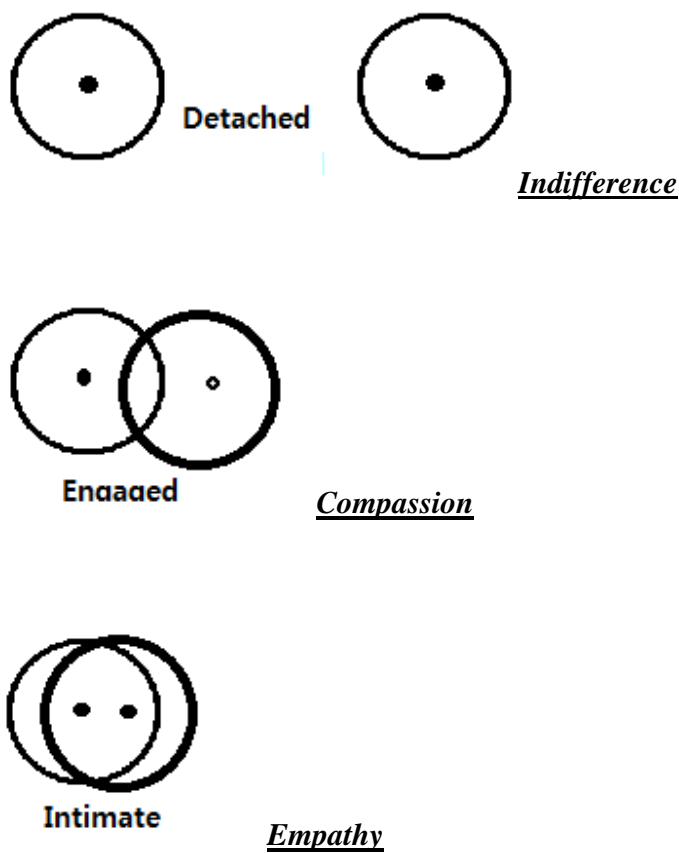
possibility of altruism, “the view that we are capable of valuing and pursuing another person’s welfare as an ultimate goal” (Batson, 1990, p. 336).

However, commitment of compassion is not unbounded or unlimited. The magnitude of compassion is determined by the difference between benefits and costs. Even commitments of compassion enable the avoidance of self-blame which can be a benefit, if it demands oneself to bear too much distress. In this equation, the bottom line of compassion is the “awareness of one’s separateness from the sufferer, as well as recognition that “the bad lot of the sufferer...is, right now, not one’s own” (Goetz, et al., 2010; Nussbaum, 1996) . Psychological proximity is also supported by the psychological concept of “negative bias” (Bar-Anan, Liberman, & Trope, 2006; J. T. Cacioppo & Berntson, 1994; Fujita, Eyal, Chaiken, Trope, & Liberman, 2008). People, exposed to negativity, show stronger responses for proximate negative stimuli than proximate positive or neutral stimuli, according to the principle of “negative bias.” This strong responsiveness can be represented as aversion, negation, and even struggle. On the contrary, when people are exposed to positivity, the approach or exploratory behavior to others or events are reacted. (J. T. Cacioppo & Bernston, 1994, p. 413).

If “negative bias” can be applied to human conduct in general, people can engage in the compassion of suffering only when they could secure a safe distance. In other words, people can be a witness of media depictions of tragic events such as natural disasters and want to share in the suffering of victims. However, they don’t want to identify themselves with victims in the sense that they would prefer to be in their actual position. Vice versa, for positive media depictions such as annual

festivals and family gatherings people might be willing to locate themselves more readily, not to the position of witness, but as an actual participant. Here, they could more readily identify themselves with the objects without any emotional risk. Figure 2 visualized psychological proximities of indifference, compassion and empathy.

Figure 2. Psychological Distance between the Self and Other¹



¹ In figure 2, left dot (•) represents oneself, while right dot (•) depicts other. Each circle represents the social sphere surrounding it. The distance from left dot (oneself) to right dot (other) is representation of one's psychological proximity to other in the psychological states of indifference, compassion and empathy.

The Human Sense of Location in a Mediated Space

The awareness of one's location is basic for a living organism. For humans, as intelligent self-aware social beings, a sense of location must be manageable in the context of complexity. The basic component of sense of location is space or place. According to philosopher Tuan, "places and objects define space, giving it a geometric personality" (1977, p. 17). The physical existence of space is realized by a human-sensed reference to experience.

Humans, however, have not been confined within their reach of senses. Human history, in fact, is an evolutionary history of the extension of sensory experience by diverse tools such as the wheel, telescope and/or airplane. As anthropologist Hall argued "man has elaborated his extensions to such a degree that we are apt to forget that his humanness is rooted in his animal nature" (E. T. Hall, 1966, p. 3). Among tools of human extension, media appeared comparatively recent in human history. However, the impact of media on human extension is tremendous. The impact was metaphorically uttered when McLuhan declared that "as electrically contracted, the globe is no more than a village" (1964/1994, p.5). However, communication tools alone cannot realize human extension. Humans do not always depend on their sensory experiences to gain their values, thoughts and behavior patterns. By modeling in the symbolic human environment, especially, which is made by mass media (Bandura, 2001), humans "can become passionately attached to places of enormous size, such as a nation state" (Tuan, 1977, p. 18), which is abstract as well as far beyond the direct reach of humans.

In the vein of symbol making, 20th century sociology introduces the concept of “situation” into the sense of location. Instead of a structural static definition of social role, Goffman suggested social role is determined by social context of situation. According to him, “a social role will involve one or more parts and that each of these different parts may be presented by the performer on a series of occasions to the same kinds of audience or to an audience of the same persons” (Goffman, 1959, p. 16). This situational view was later adopted by Meyrowitz when he looked at the relationship between television and its viewers. Meyrowitz argued that, “watching television is somewhat like watching people through a one-way mirror” (Meyrowitz, 1985, p. 39). Through this “watching,” media provided viewers with enormous situations in which people learn the notions of appropriate style and action in the absence of real experience.

The wide introduction of electrical mediation such as satellite televisions and mobile phones in the latter half of the 20th century, has brought the tension between physical presence and symbolic self-identification which is created by human’s imaginative work. It has been argued that sense of location is “primarily relational and contextual rather than as scalar or spatial” (Arjun Appadurai, 1996, p. 178)

The main source of this relational and contextual sense of location is imaginative work, which has been supported by nationwide paper, books published in the dialectic of the emergence of a modern nation state (Anderson, 2006). The synergy of mass global media and the human ability of imaginative work allowed people to create a “community of sentiment.” This community of sentiment, such as diverse immigrant societies in foreign countries, is “no longer bounded by territory,

passports, taxes, elections, and other conventional political diacritics, but by access to both the software and hardware that are required to connect to these large international computer networks” (Arjun Appadurai, 1996, p. 195; J. E. Newhagen & Bucy, 2004)

The introduction of the Internet, the most recent tool for mediated human expression, provides new conceptual frameworks for the notion of social interaction. Computers expose users to “several contexts at the same time” (Turkle, 1995, p. 13). An oxymoron, “individualized community” is supported by “the developing personalization, wireless portability, and ubiquitous connectivity of the Internet ” (Wellman, 2001, p. 241). Not only does the Internet reduce the contextual importance of place, but portable communication devices such as mobile phones and laptops have changed the sense of proximity between interface and its users (Xie & Newhagen, 2012).

The globalized ubiquitous computer-mediated communication system has facilitated psychological proximity, which diminishing the relative importance of geographical and temporal proximity. The importance of psychological proximity lies in this resilience of “manipulation” by human beings. Recent empirical study found that if people can manipulate the distance of an emotional scene, “in the mind’s eye,” their sensory experience is also changed. (Davis, J.Gross, & Ochsner, 2011)

In the field of psychology, “distance” has been examined through different dimensions: spatial, temporal, social, and hypothetical (Lieberman & Trope, 2008, p. 1202). Research has found that psychologically generated social distance is an association of “emphasizing high-level personal disposition and underweighting low

level situational factors” (Lieberman & Trope, 2008, p. 1203). It was also found that when temporal distance feels “far” (saying “a long time after”), people are more persuaded by a conflicting issue (Fujita, et al., 2008, p. 569).

Seeing through the ability of “psychological proximity,” individuals could manipulate distance to negative but socially significant events “far” from themselves, giving them more selective choices, while positive and socially less burdened events may be perceived as “close.” Related to this, a group of information scientists have suggested “perceived proximity” as one’s cognitive and affective distance to others. (Wilson, O’Leary, Meitu, & Jett, 2008, p. 985). One of the main findings regarding “perceived proximity” is the paradoxical status of proximity in recent computer mediated society. The paradox is stated as “close-but-far” and “far-but- close” (Wilson, et al., 2008, p. 982). “Close-but-far” illustrates the cognitive perception of proximity which is physically close, but perceived as far. On the other hand, the second state "far-but-close" is physically far, even though it is perceived by an individual as close.

As mentioned, the sense of location is not only supported by geographical and temporal dimension. With the introduction of contemporary media in human society, the impact of psychological dimensions of sense of location has been dramatically increasing. Furthermore, users can transcend different dimensions of locality simultaneously and integrate them into their daily lives.

Locality, Psychological Proximity to News

The traditional concept of a sense of location, which is defined as “proximity” in media studies, has not been nurtured and redefined by psychological sense of location. Neglect of this psychological dimension in constructing human sense of location has been especially evident in journalism, a dominant convention of news media since the advent of mass circulation newspapers nearly 180 years ago.

The traditional sense of proximity in journalism has been identified in the context of geographical distance, since in news making, “identity and cohesion were largely defined in geographical terms” (McQuail, 2005, p. 241). An underlying assumption of making news interesting is to find a way to make it seem geographically close to the reader. In this regard, each news media institution defines its territorial responsibility based on its news mission (G. Tuchman, 1978).

News consumers, however, recognize that proximity is based on physical distance as well as “acts that seemed close to them, having lived through an experience similar to the one involved in the event” (Puente & Mujica, 2006, pp. 136-137). While news may be the social product of journalistic routines, the cognitive concept of newsworthiness is implemented by an individual’s brain (Shoemaker & Cohen, 2006). It means that the negativity or positivity of news message is not possessed in message itself. It is processed in the human brain as meaning making of news consumers. Based on this distinction, researchers have argued that “proximity” of news should be explicated not only by the journalistic credentials, but also its salience to the individual cognitive processor.

Studies from the field of cognitive science have further defined the origins of proximity perception using specific regions of the brain. Researchers found two simultaneous influences for a construction of sense of proximity. One is rational, and emerges from analytical cognition, the other one is emotional, which comes from syncretic cognition. Syncretic cognition means knowledge acquired by acquaintance, while analytical cognition is knowledge gained by description (Chaudhuri & Buck, 1997). Syncretic cognition, generated within the right-hemisphere of brain, is direct and immediate. Proponents of this theory argued that electronic media are associated with syncretic cognitive processing, which determines affective involvement of news (Buck & Powers, 2011, p. 183). Given the explosive expansion of online news through websites operated by newspapers and broadcast outlets and other online sites, changes in the cognitive nature of news consumption should be more fully explicated. For instance, in the United States, according to a recent survey, 57% Americans regularly get news from at least one Internet or digital source (Pew, 2010).

Consuming media content, including news, is not an isolated individual act. It makes each person a “witness of the ways of the world” (Peters, 2001, p. 707). To be a witness means, consequently to be a responsible party of a “witness witnessed” (Peters, 2001, p. 708). Reading news makes people engage in “others” at diverse levels of an “imaginatively” constructed society. These social aspects of news tap two higher levels of emotions: compassion and empathy. As stated, empathy is more an identification of oneself with others either positively or negatively, while compassion means a willingness to help others who are suffering in negative situation. These two emotions are closely related to vicarious performances which are enabled by diverse

media including news media. As examined earlier, the psychological distance of compassion is determined by the magnitude between benefit and cost of compassion of the witnessing of the suffering of others. The bottom line of commitment of compassion is the assurance of separation from the victim, in which one wishes a willingness to help sufferers behind its safe zone. Different from compassion, empathy is a state that people identify themselves with target objects either negatively or positively. Empathy need not and should not request distance from the target object which assures the safety of a subject, since it has to be close enough to identify.

The proposed focal concept of “locality,” the psychological proximity to news, is based on human ability to manipulate the psychological proximity for one’s surveillance in both biological and social contexts. The difference between empathy and compassion could be represented as psychological proximity to news. Although people can witness a news event, the degree of self-engagement is not mainly determined by intensity of news, geographical closeness, or temporal immediacy. Rather, the degree of engagement in others, that is to be a witness of news, is more determined by one’s psychological proximity of news.

Based on this theoretical assumption, a research question was proposed.

Research Question 1: Is locality, one’s psychological proximity to news, manipulated by one’s psychological endeavor to secure self-safety?

Locality, the psychological proximity of news, has been assumed to be operationalized by compassion and empathy. In terms of compassion, it is premised that one’s sense of locality will be manipulated in the range of security from suffering

others. In terms of empathy, whether one will identify oneself with people in only positive situation or in both positive and negative situations is questionable.

In this vein, the pertinence of locality to valence of news was introduced to examine the locality. Two hypotheses were presented.

Hypothesis 1: Compassion is greater than empathy to identical negative news.

Hypothesis 2: Empathy is greater than compassion to identical positive news.

Locality provides the bedrock for a new dimension of news, which challenges the traditional concept of simple geographical and temporal proximity. Online networks of human relationships, especially social media networks, such as Facebook, are an individual initiative and egocentric community rather than collective (Boyd & Ellison, 2007). This nature is different from traditional communication network which has been dominated by traditional main stream media institutions as a source for news. "Locality," then, is really the focal concept of the study, where it will be conceptualized as the notion of the psycho- construction of the relationship between self and news media content.

Chapter 3: The Relationship between Media Platform, News Message and Content

There have been several analogies between the brain and society across multiple disciplines. Beniger (1986) argued that despite an insufficient correlation, a combination of sociality and brain activity seems essential to culture. McLuhan declared, “In the electric age, when our central nervous system is technologically extended to involve us in the whole of mankind”(1994, p. 4). The analogy between the human brain and society is similar to the analogy between the human brain and a computer system (Bolter, 1974; Turkle, 1995) provided the profound understanding of human cognition in the context of the digital computer as a metaphor.

Most recently, cognitive psychology has been challenged to include emotion in its model. Two competing theories have emerged, the dimensions, with arousal and valence, the central dimensions, and categorical approaches, naming long lists of discrete emotional states (Lazarus, 1991). This has been likened to the study of particle and wave theories of physics, which both offer substantial explanatory power, but both are also mutually exclusive (Lang, 1988) . Even though this problem may be nearing resolution (Barrett, 2012), an interesting caveat has emerged from a closer look at hedonic valence, which has come to be known as the theory of coactivation (J. T. Cacioppo & G. Bernston, 1999).

Coactivation as a Model for Media Platform and Content Interaction

The focal point of coactivation theory lies in its challenge to the claim that valence is a bipolar dimension bounded by positive and negative poles in measuring human evaluation such as “favoring” and “unfavoring.” After sociologist Thurstone’s

seminal work for measurement of attitudes had been published(1928), the concept and measure of attitudes has been dominated by bipolar approach. Thurstone's very idea was that attitudes can be measured by linear continuum like price, volume, weight, and age. For example, when it comes to any social or political opinions, the continuum can be represented. Thurstone's concept has been instrumentalized as bipolar rating scales like the Likert scale.

Thurstone's bipolar continuum was then revolutionary idea, since it opened the way of measuring subject components of affection such as opinion and emotion by physical standards. However, this model could not relate some real world phenomena, in particular ambivalent attitudes or evaluations. It was inevitable not to be explicated by the bipolar model, since one of the principles of the bipolar continuum is "positively and negatively valent activation functions have generally opposing effect on attitude (principle of reciprocal evaluative actions)" (J. T. Cacioppo & Berntson, 1994, p. 401). In other words, on one dimensional bipolar continuum, human attitudes can be computed as a net difference between two end points.

In the 1990s, a group of students of the affect system raised different evaluative models which could relate ambivalent attitudes that were yet to be explained. The empirical bedrock of new model for measuring attitudes were findings in cognitive science which indicate "the partial segregation of the positive and negative evaluative channels in the affect system" (J. T. Cacioppo & G. Bernston, 1999, p. 135) . The separability of positive and negative evaluative channels provided

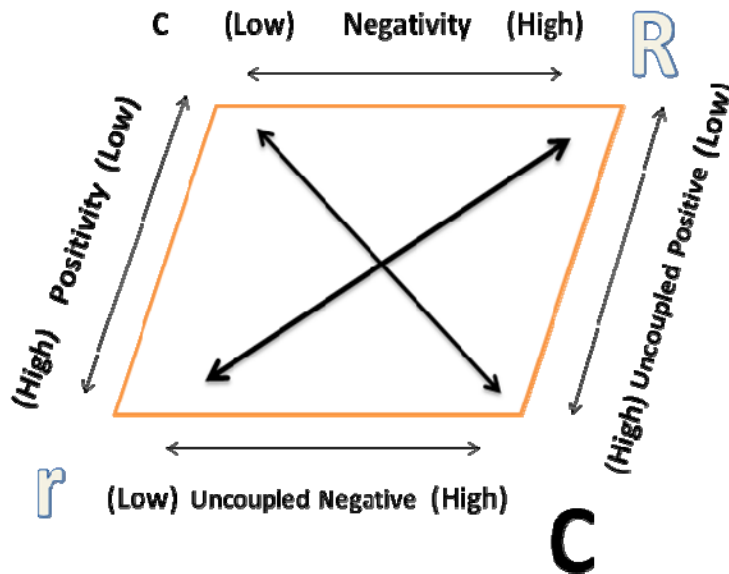
a new architectural structure which enables researchers to understand the human affection system on different horizon.

According to advocates of the new model, measuring attitudes should be conducted as points on a dimensional plane (J. T. Cacioppo & Bernston, 1994). This compelling argument for the dimensional approach was based on an extensive meta-analysis of extant literature on the psychophysiology of emotion and received substantial empirical support since its proposal (J. T. Cacioppo, Klein, Berntson, & Hatfield, 1993).

The “Bivariate Evaluative Plane” is composed of four bipolar segments which are comprised of either negativity or positivity. Figure 3 is a modified graphic of “Bivariate Evaluative Plane” by Cacioppo and Bernston (1994).

The four segments generate two pairs of parallel evaluations. At a vertex of the plane, a positive segment and negative segment (bivariate) cannot meet. The plane can be verbally restated that 1) two valences can be activated reciprocally (mutually exclusive), 2) uncoupled (singularly activated) or 3) non-reciprocally (coactivational) activated.

Figure 3. Bivariate Evaluative Plane



In the plane, the vertex of capital “R” (upper right side) is the place where high negativity meets low positivity. Vice versa, the vertex of the lower case “r” is the place where high positivity meets low negativity. On these points, reciprocal activations are performed. In other words, at these points, either positivity or negativity is maximized. These are the places where the transformed reciprocal activations of the bipolar model exist in the plane, which were previously represented at one end of single bipolar continuum. In human activities, these reciprocal activations are represented by either “strongly unfavoring” or “strongly favoring” to identical object such as specific color and either “strongly opponent” or “strongly proponent” to the identical issue such as health care reform.

The vertex of capital “C” is the place where high negativity meets high positivity. To the contrary, at the point of lower case “c,” low negativity meets low

positivity. A capital “C” represents coactivation, while a lower case “c” indicates coinhibition. On these points, the status of activation is restrained, since the same amount of two opposite directional attitudes are competing. That is, “attractive but offensive” (strongly positive and strongly negative) or “little favoring but unfavoring” (low positive and low negative) attitudes can coexist. On these points, it is possible that the direction of attitudes can be changed, since two opposite attitudes mutually pull and push. Therefore, the directional status is unstable. Apparently, these coactivations including coinhibition can be represented as ambivalence, ambiguity and the inconsistency of human attitudes which could not be measured by a bipolar continuum.

In sum, the contributions of the coactivation theory for measuring human attitudes can be summarized in two notions. First, it provided the theoretical model for the coexistence of two opposite valences. Ambivalence, ambiguity, inconsistency and hesitation which were incorrectly measured by the bipolar scale. Second, the coactivation theory provides the theoretical framework for the phenomena which are represented? by two different dimensional factors. To employ the bivariate evaluative plane, psychological phenomena which have originated from the interaction of two different dimensions can be explicated. The interaction between a dimension of a news platforms and a dimension of news contents, the core research interest of this study, is one of the complex phenomena which can be examined by the coactivation theory.

Coactivation across Contents and Platform in News Messages

Emphasis is given to coactivation in this study because of the problematic nature of matching media platform and content in new media. It is generally assumed that social media is comprised of positive platforms while mainstream media are regarded as negative. Pre-test data in chapter 4 will explain those assumptions. Traditional news media has long been regarded as a vehicle for bad news, such as crime, disaster, war, or imminent social change. On the contrary, social media has been depicted as developments of egocentric personal networks where open space to its members is generally positive in tone. Personal photos, status updates, family events and random chatting have been the dominant user-generated content on social media such as Facebook. However, the line between platforms has been blurred as more and more “hard news” appears in the context of social media.² Online news websites of mainstream media have introduced the channels through which the users of social media can be easily absorbed into their news websites.

For example, CNN.com publicizes the activity of one’s Facebook friends on their websites when a user who has own Facebook account accesses to their web site. At the same time, social media users voluntarily share interesting news from the mainstream media to supply their walls with new or diverse information which catches the attention of their Facebook friends. While hails to social media as a breakthrough for stagnated news media business have been surged, the very nature of change has not been fully addressed. It has to be examined that whether positive personal social media can be or will be regarded as an ordinary news venue. It also

² A case can be made that the very nature of social media has placed substantial stress on traditional concepts of the nature of “news” messages themselves. While this important discussion will be addressed in the conclusion of this work, it is beyond the purview of this study.

should be explored whether personalized news items like comments on individual Facebook will be effective items of traditional news websites to attract young readers who are heavy users of Facebook. Mounting requests of the examination on the interaction between news platform and news contents generated the research question below.

Research question 2: Will there be an interaction between content emotion and platform emotion?

To examine these hybrid phenomena, the study employed coactivation theory. “Bivariate Evaluative Plane” of coactivation theory provides an archetype of the structures which conceptualize the relationship between different emotion laden platform and contents. Table 1 illustrates the conceptualization of the study.

Table 1: Conceptual Framework of the study based on the Coactivation Theory

		Platform	
Image Emotions (Contents)		Main Stream Media/Negative (---)	Social Media/Positive (+)
	Negative (-)	Uncoupled Negative Activation (--- ---)	Coactivation (+ ---)
	Positive (+)	Coactivation (--- +)	Uncoupled Positive Activation (+ +)

Bivariates of the study which include two platforms and two different emotion laden contents yielded four cells. Among these four cells, bad news on a negative platform (--- ---) or good news on a positive platform (+ +) were categorized into uncoupled negative and positive activations. These two cells have been a main

domain of media research for each platform. Remaining two cells such as “mainstream media with positive image emotions” (--- +) and “social media with negative news” (+ ---) were categorized into coactivation. Between the two cells, less studied cells should be “social media as a venue of negative news (+ ---).” Positive news contents on mainstream media has been critically studied as the issues of tabloid journalism, the transition from standard hard news to soft news (Grabe, Zhou, Lang, & Bolls, 2000; Örnebring & Jönsson, 2004; Plasser, 2005; Prior, 2003). The cell of “social media with negative news” (+ ---) should be examined by empirical study. This complex environment which has been operated by diverse media platforms in everyday life proposed another research question.

Research question 3: Will there be evidence of coactivation when platform and news contents are emotionally incongruent?

To conclude, the migratory nature of media convergence in which identical contents can be moved across the media platforms has brought the questions whether emotionally predisposed platform or contents can be affected by opposite directional contents or platform. The coactivation theory emerged, which provided a conceptual architecture of the affect system and enlightened the ways to examine complex dimensional interaction between platform and contents.

Measuring Emotion: Self-Report and Latency

It may be useful to emphasize that emotions are states which exist within subjects, not messages. That is to say a “negative message” is a message that may

contain certain elements that elicit negative emotions in subjects. For example, while journalists select images by the professional credential of newsworthiness such as the deviance or social significance, the cognitive concept of newsworthiness, in fact, is implemented by an individual's brain (Shoemaker & Cohen, 2006). An image of earthquake survivors may cause subjects to experience fear or compassion, while an image of a family gathering might cause subjects to experience positive affect such as empathy. It is critical to remember, however, that the images do not "contain" emotion. They contain elements that elicit emotions in their viewers which might affect other cognitive processes such as memory and attention.

Given that the emotion exists within the subjects and not the stimulus, it cannot be a surprise that the self-report of felt emotion has long been used as a measure of emotion, and has a fairly good track record in terms of both validity and reliability. A lot of research on emotions are based on belief that "Respondents are aware of what they are feeling and can report feeling accurately" (Eisenberg & Fabes, 1990). The merit of verbal instruments of self-report is that rating scales can be assembled to represent any set of discrete emotions. However, translating instruments both within and across cultures is often proved difficult, calling the validity of asking about fine-grained emotional states, such as compassion, into question. One alternative to this problem has been the use of indirect measures. One tactic has been to use non-verbal images, such as the Self-Assessment Manikin (SAM) which provides respondents with multiple choice pictograms instead of verbal accounts, which portray different state of specific emotion (Bradley & Lang, 1994; Desmet, 2005).

While this still technically constitutes a form of self-report, it does at least solve the problem of whether or not subjects can articulate their emotional state in words. It is not enough to repress the possibility of self-deception or distortion when self-reports one's emotion. For example, in the personality study, self-report measure has long been criticized for their susceptibility to various types of distortion by respondents. The representative distortion of self-report is caused by the expectation of Socially Desirable Response (SDR) (J. Newhagen, 2011). It has been found that "A respondent is predisposed or biased to select as self-descriptive the response options for items that are more desirable than warranted by his or her corresponding traits or behaviors" (Paunonen & LeBel, 2012, pp. 158-159) . For compensating the possibility of distortion of self-report responses, psychophysiological measures such as heart rate, facial electromyography, and electrodermal activity have been introduced for media and media interface study (Ravaja, 2009).

Aside from other psychophysiological measures, latency of memory has been utilized to gauge emotions. Initially, latency as Respond Time (RT) to stimuli has been widely accepted to measure mental effort. The premise of latency is that total amount of mental effort can be represented as RT (J. Newhagen, 2011). Recently, studies which relate latency to human attitudes have been made (Bassili, 2000; Fazio, Williams, & Powell, 2000; Feinstein, 2000; J. Newhagen, 2011). It has been also argued that latency less conscious censored than self-report (Feinstein, 2000). These studies have enlightened the possibility that memory can be used as way to measure emotions.

Memory and Emotion

Research into memory spans back well over a century in psychological research. William James (1842-1910) included a chapter on the subject of emotion in his seminal text *Psychology* that virtually set the agenda for American psychology even to this day. Hermann Ebbinghaus's (1850-1909) self-experiments on memory are legendary. Ewald Hering's (1834-1918) interdisciplinary definition of memory claims that memory is "the heart of our sense of personal identity and ability to understand the world in which we exist" (Schacter, 1989, p. 683). Contemporary research has only given more substance to that idea, where emotion appears as a dimension of virtually all high order cognitive processes, including memory. Memory research can lead to the understanding of "how people build their knowledge ; how sensory, motor, and conceptual features of the knowledge are interrelated" (Bower & Clapper, 1998, p. 264).

Latency to respond, which tests the subject's discrimination between a stimulus target and a foil, represents an indirect measure of memory. Along with accuracy which means "percent correctly recalled," speed with which subjects respond to items is employed as useful measure of recognition task. (Bower & Clapper, 1998). It has the advantage of having the capacity to detect memory strength differences with a great deal of precision that is not always present in a self-report.

The reaction time, the latency of a subject's responding to an item, measures memory retrieval. It is assumed that, "If subjects respond more rapidly to one type of item than to another, we can assume that these items are more accessible in memory"

(Bower & Clapper, 1998, p. 268) . This assumption is based on the Limited Capacity theory of information processing. The limited Capacity theory claims that since the information-processing of the brain is limited, the allocation of attentions to various stimuli such as visual and audio resources inputted human sensory organs cannot but be selectively processed (Allport, 1998) .Thus, the stronger the memory, the faster it will be recalled. It is not unusual for the latency to respond measure to detect memory differences well below subject's conscious awareness.

Using the limited capacity theory, diverse empirical studies were conducted in media study: Whether audio component retroactively hinders the memory of visual image of television news or proactively empower the effect of visual component, whether the specific location of diverse audio, visual components in news stories generates different effects on viewers' attention, whether the emotional valence of stimuli such as negative video and positive video in television news stories determine users' memory and attention, whether contents types such as audio only, print only and video only affects the degree of viewers' memory differently, whether subjects' attributes such as gender interacts the specific contents (S. Geiger & Reeves, 1993; Gunter, 1984; Annie Lang & Newhagen, 1996; Annie Lang, Zhou, Schwartz, Bolls, & Potter, 2000; J. E. Newhagen & Reeves, 1992) have been studied.

In particular, the latency of recognition study provides the supplementary or even contradictory results of emotion to that of self-report in media studies. Latency could indirectly address two aspects in emotion research. On the one hand, latency could reveal the hierarchical order of measured emotions. On the other hand, the possibility of distortion of self-report can be detected by latency. The assumption of

the information processing model of communication is that cognitive complexity which demands more mental effort is represented as a longer magnitude of latency. While addressing the human cognitive architecture as interactions of hierarchically multiple levels, Newell (1990) suggested that the time scale of human action corresponding to the hierarchical bands of human actions which ranged from biological, cognitive, rational to social band. In this level system, neurons of the biological band operate about every millisecond (~ 1 ms), while the deliberate act of cognitive band is performed ~ 100 ms. For lower levels of the deliberation of choice occurs at ~ 100 ms, while rational actions need to be processed between minutes and hours. Based on this time scale, biological bands are assumed to take less time than the process of cognitive band.

Along with this hierarchical order of cognition, studies which measures attitude with latency should be considered (Bassili, 2000; Fazio, et al., 2000; Feinstein, 2000; J. Newhagen, 2011). In these studies, it is assumed that psychological discomfort which demands more mental effort is also represented by longer time of latency. Psychological discomfort such as SDR can be originated from a higher order of human cognition than a lower one. It has been experimentally confirmed that in political online surveys, “social desirability biasing can account for up to 4,000 ms of meaning processing depending on the magnitude of the discrepancy between respondents’ perception of social norms and their relationship to them.” (J. Newhagen, 2011, p. 513)

To examine the research questions of the study, four different emotions such as valence, intensity, empathy and compassion have been measured as dependent

variables. Based on existing literature which claimed the measurability of attitude by latency, the study employed latency and accuracy of memory as a measure of four emotion variables. This methodological strategy which utilizes latency and accuracy of memory proposed hypotheses with related to research questions.

As stated, coactivation can be generated by the encounter of two strong opposite directional valences. Based on this, it was assumed that when high negativity (mainstream news media) meets high positivity (positive news), vice versa high positivity (Facebook) meets high negativity (negative news) , coactivation could be generated. The representation of coactivation, that is ambivalence, ambiguity or hesitation could be detected by latency. Ambivalent attitudes require more mental effort than attitudes are dominated by one directional valence either positive or negative. More mental effort could be represented as longer latency. In congruent relationships such as negative news platforms (mainstream media) contains negative news (crime, natural disaster, etc.) or positive news(family gathering, festival) posted on positive platform (Facebook), it would not need as much as mental effort as coactivation. To examine the presence of coactivation in the interaction between media platform and contents, hypotheses were presented.

H3. Latency of the positive news on mainstream media is longer than that of negative news on mainstream media.

H4. Latency of the negative news on Facebook is longer than that of positive news on Facebook.

Since more mental effort should be placed on the site of coactivation, it is assumed that the accuracy of memory could be higher when the two valences coactivated than when the same directional valence of news platform and contents are combined. In this regard, a hypothesis was proposed.

H5. The accuracy of positive news on mainstream media is higher than that of positive news on Facebook.

H6. The accuracy of negative news on Facebook is higher than that of negative news on mainstream media.

For the study, both news images and related texts were used as stimuli. In terms of image, it has been found that even high demanding task of visual processing is completed under 150ms. In an experiment which asked subjects whether they saw animals in the stimuli which had been exposed to them only for 20ms, subjects answered at ~150 ms with 94% of the average correct response rate (Thorpe, Fize, & Marlot, 1996). This result suggests that the difference over 150ms in perceiving diverse images is qualitatively meaningful.

To conclude, the study was designed to employ both self-report and memory as measurements of emotion. To reduce the possibility of distortion or incorrectness of self-report (J. T. Cacioppo & Bernston, 1994), latency and accuracy to both images and texts of stimuli were automatically measured by psychological software along with collecting answers to the self-report questionnaire.

Before proceeding toward the main study, a pretest has been conducted. The purpose of the pretest was to examine a priori assumption which has defined social

media as a positive platform of news. The next chapter addresses the pretest and implications of the results of the pretest on the study.

Chapter 4: An Exploratory Examination of Users' Emotional Assessments of Mainstream Media and Social Media Internet Platforms

Common language used to describe two important advances in the use of the Internet as a communication medium deserve closer conceptual explication on their own terms to fully understand the maturing technology. One has to do with the shift in usage from “mass media” associated with television and the other has to do with so-called “social media.” The first step in the process is to acknowledge that the changes did not fall out of the sky and suddenly enter into vernacular usage for no apparent reason. At the same time it is important to understand that the changes *may seem as though* they did fall from the sky, given the absence of any concrete explanation concerning their appearance. This project has taken on the task of making some sense of this apparent anomaly by taking yet another vague concept, that of “platform,” and examining how the “meaning” of equivalent content appearing on them might shift. Emotion has been selected as the focal dimension of meaning because of its intuitive appeals as the foundation for contrast and its relentless emergence as a key component in the communication process.

The claim that main stream media, steeped in the roots of traditional journalism is perceived as a negative platform, while social media, based largely on their intuitive and vernacular usage, is a positive platform. The first step in an

empirical examination of the interaction between platform and content is then, to valid these two assumptions.

First, the shift in usage between the term “mass media,” and “mainstream media,” which has gone largely unexamined is, nevertheless important. The key may lie in the shift in the use of the word “mass” usually associated with technologies of mass production to “mainstream,” which seems to be more of a social or political comment.

Second, is the fairly late emergence of the idea of “social” being associated with a technology seemingly begging for such a description. One explanation might be that the term “interactive,” which emerged early on as the defining dimension of the Internet ran into its own conceptual difficulties. Questions emerged such as, interacting with what? Users interacting with other users? Users interacting with machines? Both? That discussion inevitably leads to the morass of the Turing Test(1950), proposed by the man who conceptualized the digital computer, or Turing Machine some 70 years ago (Turing, 1936).

This project will not pretend to bring closure to some of these grandiose problems, but will, at least, attempt to validate that different platforms on Universal Turing Machines elicit different emotions while displaying equivalent content, in this case news. This chapter outlines the manner in which these two platforms, mainstream media and social media, were pretested to validate their capacity to elicit either positive or negative emotion in users.

Introduction

The prevalence of social media has been witnessed in recent years. In contrast to the explosive adoption of social media such as Facebook and Twitter, a consensus on the concept of social media has not been reached. Some claim broadly that social media “refers to a set of online tools that supports social interaction between users” (Hansen, Schneiderman, & Smith, 2011, p. 12). In this case, social media includes email, discussion forums, blogs, Wikis, You Tube and social networking sites. Others view social media as “seemingly-interchangeable related concepts of the Web 2.0 and User Generated Content” (Kaplan & Haenlein, 2010, p. 60). Additionally, the term, “Web 2.0” has not been conceptually explicated either. Despite the disagreement of fine definitions of social media, some empirical characteristics of Web 2.0 or social media have been repeatedly referred to: 1) Web as platform 2) participatory web 3) user initiative 4) connectivity between users 5) openness 6) democratization and 7) ability to post content in diverse forms (Beer & Burrows, 2007; J. T. Cacioppo & Bernston, 1994; Han, 2010b; Millard & Ross, 2006; O'Reilly, 2005; Song, 2010)

Given the conceptual ambiguity, investigating the nature of social media was the departing point for this study.

As an exploratory study, one critical aspect of the social media was intuitively predicted. It was that social media has an emotional disposition. Because of the characteristics of the participatory web and connectivity among users, the emergence of social media has brought attention to some emotions which have been otherwise overlooked. For example, compassion has been attentively related to the nature of social media. Compassion is psychologically defined as being moved by another's

suffering and wanting to help (Lazarus, 1991). It has been often found that the use and satisfaction of social media users lies on emotional support from like-minded members other than information acquisition (Joinson, 2008). For teens and young adults, social media, in particular, Facebook has served as a venue of social interaction where they make friends and confirm their identities through peer (Lenhart, 2009; Pempek, Yermolayeva, & Calvert, 2009). Emotional support among like-minded users such as college students, patients has been regarded as main social benefit to individuals for enhancing their self-esteem and social capital (Greene, Choudhry, Kilabuk, & Shrank, 2011). At the same time, negative emotional effects of social media have been discussed. Because of the mutual confirmation system of Facebook (Boyd & Ellison, 2007), emotional discomfort and abuse among Facebook friends such as unwanted contact and disclosure and bullying has made users more often than not in engaging in insecure situations (Christofides, Muise, & Desmarais, 2012). In sum, either positively or negatively, it has been addressed that social media has strong emotional disposition.

Social media as emotional media, however, not have been fully addressed in terms of news platform. Although the increasing numbers of social media users, which access and diffuse news through social media has been discussed (Kwak, Lee, Park, & Moon, 2010; Pew Research Center, 2012a), whether their emotional disposition makes difference when user read news on Facebook from reading that on mainstream media websites has been rarely examined.

In recent natural disasters such as the earthquakes in Haiti and Japan, social media outlets such as Facebook and Twitter have played a role as a legitimate news

source (Smith, 2010). These outlets differ from traditional news distributors. In these social media platforms, news is gathered from individual users who want to help others in the tragedy. These users sympathize themselves with others who are suffering from a first person perspective, rather than reporting from the scene as a third person party. In this regard, social media is rather subjective news platform which is driven by users different from journalists whose performances have been dominated by the ideal of objectivity as professionals (Hackett, 1984; McQuail, 2005; Gaye Tuchman, 1972). In this regard, the examination on social media as news platform could not but be exploratory.

For exploring the nature of social media as news platform, three dimensions were raised as pointers: emotion, control, proximity. Firstly, the relationship between emotion and media has been widely studied regarding newspaper and television, yet this has not been the case for social media. It is worth of examining whether anxiety or attention is critical indicator in social media like mainstream media. Whether different emotions such as intimacy or compassion plays a role when user read news on social media has been questionable. Secondly, it should be examined that whether controllability among users or between users and applications in social media makes a meaningful difference from mainstream media. From the emergence of the Internet, control, in particular interactivity has been addressed as the ontology and epistemology of the Internet (Rafaeli, 1988). However, its theoretical and operational definitions have been scattered and contested (Kioussis, 2002). The emergence of social media brought attention to the issue of “interactivity” compared to that in early

age of the Internet. Whether empowered interactivity of social media affects news reading is worth examining.

Focusing on “news,” an arguably the special category of content, proximity becomes especially useful as a lens to view both mainstream media and social media. Proximity has been regarded as one of the core news values. Newspaper have designated their territorial responsibilities such as local or national paper and covered events in their assumed territorial service area (McQuail, 2005; G. Tuchman, 1978). The introduction of television invited temporal proximity. Real time television news brought the immediacy regardless of the distance of physical locations between spot of news events and news consumers. Ubiquitous communication environment which is supported not only by the Internet but also by the diverse mobile applications raised issue that whether traditional definition of proximity of news is still eligible for social media (see Xie & Newhagen (2012)). In spaceless as well as timeless social media environment, the sense of proximity of users to news events could be experienced differently from traditional mainstream media.

To examine social media as news platform with three pointers, that is emotion, control, and proximity, total 10 indicators were selected. These indicators were measured by 10 rotated multiple choice questions across seven computer mediated communications. Table 2 shows a classification of 10 indicators for this exploratory study.

Table 2: Indicators of Examining Social Media³

Concepts	Indicators
Emotion	Negative, Anxious, Intimate, Positive
Control	Content, Interact, Respond, Transparency
Proximity	Far (Physical), Immediacy (Temporal)

Method

Participants

An exploratory online survey was conducted between March 11 and April 2, 2011. 161 subjects were initially signed up for the survey. Among them, 62 participants were enrolled in different colleges and departments in a large mid Atlantic research university. The instructors of two undergraduate courses agreed to accommodate the survey for the opportunities of extra credits for their students. 99 participants were recruited by student participants by snow ball sampling. Non student participants were included in order to represent the media use of diverse age, cultural group. Since the survey was conducted via online, any family members, friends or acquaintances over the age of 18 were eligible to take the survey. In particular, since the survey was processed during spring break, the participation of family members was evident. The rewards for non-student participants were not tangible. Generally, non-student participants took the survey in order to help their family member or friend. These conditions were explicitly indicated on the consent form on which each participant signed before the beginning of survey. Among 161 initial signers, 152 respondents

³ See Appendix H for the exact working and a complete list of the indicators used.

completed the survey. The mean age of respondents was 24.94 (from 18 to 58). Among the participants 63.8% (97 persons) were female, while 36.2% (55 persons) were male. In terms of racial diversity, White 67.1%, African American 11.2%, Hispanic 3.9%, Asian 9.9%, Multiple race 7.2%. The survey did not exclude non-social media users. To examine the users' perception of social media as news platform, anyone who could use an email was included as respondents. As a result, the mean of daily use of social media was 3.66 hrs.

Procedure

Each participant was given a unique subject number from researcher. In order to be connected to survey websites, participants typed their unique subject numbers into the survey website. First, the online consent form which was approved by The Institutional Review Board was reflected. Only when a participant signed the online consent form, could the participant be directed to the main survey website. They were informed by online consent form that during survey at any time they could discontinue the survey if they wanted. The survey was installed into the mid Atlantic research university's campus wide survey tool which is provided by the university for assisting diverse research of the community. The template of the survey could be customized by the purpose of the survey. For this study, 77 items including open questions were implemented. Instruments were self-reported questionnaires. Appendix A contains questions.

To examine the users' concepts of social media, seven computer-based communication applications were selected and compared: an online newspaper website (The Washington Post.com), Facebook, respondents' Homepage, Twitter, e-

mail, a television news website (CNN.com) and Wikipedia. The newspaper website and television news website were classified as mainstream media. Homepages such as Google, MSN, Comcast.com and Apple.com were included as a mediator either between homepage and social media or between homepage and websites of mainstream media. Facebook, Twitter, Wikipedia represented social media. Although e-mail has been used since the early period of the Internet, it is classified as social media based on its social connectedness. For each application, 10 identical questions were rotated which represented 10 indicators of an exploratory concept. Each question was measured by five point Likert like scales from high to low (1= *Extremely negative*, 5= *Not negative at all*). In addition to demographic questions, participants were asked to fill open questions which would demonstrate their subjective definitions of “news.” Participants were asked to type three expected news topics into the blank for both mainstream media and social media. On average, 20 minutes were taken for the whole process of the survey.

Results

Four statistical analyses were conducted: descriptive, cluster, factor, and discriminant analysis. Especially three multivariate analyses were employed to provide the overview of underlying structure of data (Mertler & Vannatta, 2010) in terms of relating the ambiguous nature of platform, the focal concept of this exploratory research.

Hierarchical cluster analysis was conducted first. Following that, factor analysis was employed to delve into what is the most prominent common entity. Finally, discriminant analysis was conducted.

Cluster analysis is used for grouping cases- either individuals or objects- into homogeneous sub groups. In particular, hierarchical clustering represents the distance from or similarity of every case with every other case in the dataset. Factor analysis enables to measure things which are not directly gauged with diverse facets. Like cluster analysis, factor analysis yields the cluster of inter-correlated variables. These clusters, called factors, enable to reduce diverse variables to smaller number of underlying structure variables. This underlying variables are assumed to share some common entity or construct (Field, 2011; Mertler & Vannatta, 2010). Finally, discriminant analysis enables prediction which subjects (independent variables) serves when groups (dependent variables) are classified. In their own way each technique adds statistical rigor to results. Through three statistical analyses, the nature of social media as a news platform was depicted.

While conducting cluster and factor analysis, dependent variables of homepage was removed, since it is not an end point media but rather, plays a role of a brokerage from a homepage to an online news website or from a homepage to email.

Descriptive Statistics:

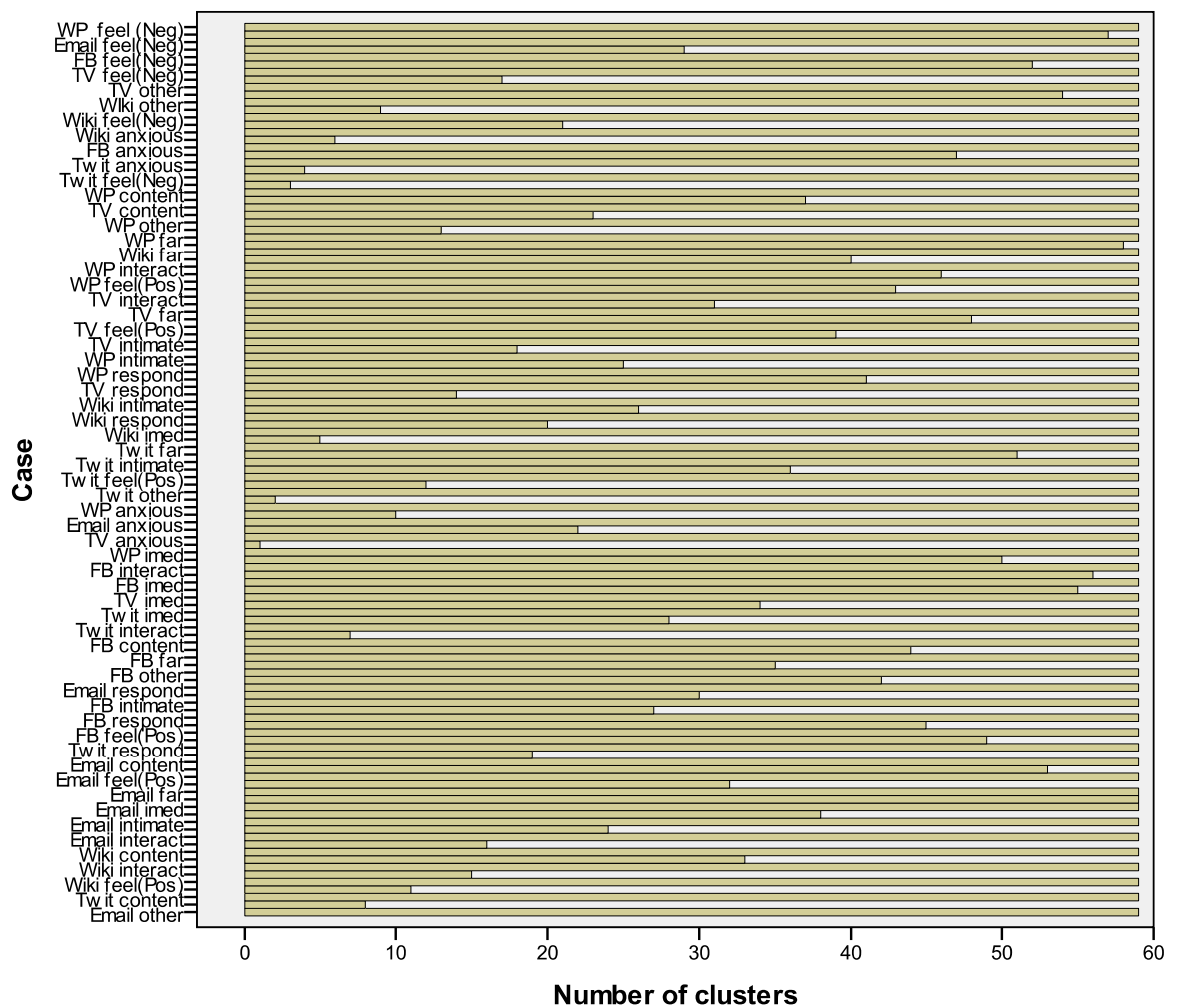
Different from an initial assumption, the mean of negativity, anxious, positivity and intimacy of over seven computer media communication did not exhibit clearly differentiated results between mainstream media and social media. Even for the question of negativity, no respondents answered that a newspaper websites is extremely negative or negative, while for Facebook, extremely negative (2.0%) and negative (3.3%) were scored. This result exhibited that indicators of emotion might not be the strongest in discerning two different channels. These complicated natures

of medium itself invited the multivariate statistical analyses which revealed the underlying structure of the data.

Cluster Analysis

The first division in the data was between mainstream media and social media. Social media such as Facebook, Twitter, email and Wikipedia grouped together, while mainstream media such as Washington Post.com, CNN.com appeared in different clusters.

Figure 4. Cluster Analysis Results



At around 30 clusters, discrete media such as CNN.com and Washington Post.com formed a cluster. At the same time, at around 20 clusters, Facebook, twitter, email were joined. Across the media platforms such as Washington Post.com, CNN.com, Facebook, and email at about 30 iterations, negative feeling cluster emerged. On the other hand, at 18 iterations, positive feeling of Facebook, email and Wikipedia joined. This cluster was closely associated with intimacy and interactivity of Facebook and email. The distance between a cluster of negative feeling and a cluster of positive feeling was farthest among clusters. In sum, hierarchical cluster roughly demonstrated a clear division between mainstream media and social media that was further sustained by emotional states, negative feeling and positive feeling as predicted.

The next step was to look for clearer underlying structure using factor analysis.

Factor Analysis

Principal components analysis utilizing varimax rotation was conducted for 24 indicators related to emotion. When the cutoff point was .500, Table 3 shows factor loadings of emotion variables.

When eigenvalue is over 1, 8 components were generated by 24 variables. In component 1, three variables such as “TV anxious,” (.793) “Newspaper anxious,” (.754) “email anxious” (.744) were over cutoff point. Since the highest two factor loadings were exhibited in mainstream media, component 1 was labeled “mainstream media anxious.” In component 2, “Facebook negative” “Facebook positive” “Facebook anxious” and “Wikipedia anxious.” In this regard, component 1 was labeled “anxiety.” Component 2 included “Facebook negative,” (.751) “Facebook positive,” (-.717) “Facebook anxious,” (.685) “Twitter anxious” (.614) “TV negative”

were scored beyond the cutoff point. Except TV, all other variables were related to social media such as Facebook and twitter. In this regard, component 2 was named “social anxious.”

Table 3: Factor Loadings of Emotion Variables

	MSM Anxious	Social Anxious	Wiki negative	Twit Positive	MSM Positive	e-Mail positive	MSM intimate	FB intimate
TV Anxious	.793	----	---	---	----	----	----	----
WP Anxious	.754	----	---	---	----	----	----	----
Email anxious	.744	----	---	----	----	----	----	----
FB Negative	----	.751	---	---	----	----	----	----
FB Positive	----	-.717	---	---	----	----	---	----
FB Anxious	----	.685	---	---	----	----	----	----
Twit Anxious	----	.614	---	---	----	----	----	----
TV Negative	----	.534	---	---	----	----	----	----
Wiki Positive	----	----	-.837	---	----	----	----	---
Wiki Negative	----	----	.817	---	----	----	----	---
Wiki Anxious	----	----	.579	---	----	----	----	---
Twit Positive	----	----	---	.863	----	----	----	----
Twit Negative	----	----	---	-.859	----	----	----	----
Twit Intimate	----	----	---	.592	----	--	--	----
TV Positive	----	----	---	---	.779	---	---	----
WP Positive	----	---	---	---	.637	---	---	----
Email intimate	----	----	---	---	----	.802	----	----
Email Positive	----	----	---	---	----	.648	----	----
Email Negative	----	----	---	---	----	----	----	---
WP Intimate	----	----	---	---	----	---	.777	---
Wiki Intimate	----	----	---	---	----	---	.556	---
TV Intimate	----	----	---	---	----	---	.514	---
FB Intimate	----	----	---	---	----	---	----	.770
WP Negative	----	----	---	---	---	---	----	---
Eigenvalues	2.59	2.50	2.23	2.06	1.96	1.67	1.58	1.38
% of Variance	10.79	10.43	9.31	8.57	8.15	6.95	6.6	5.75

*Factor loading cutoff point used in the study is .5

**MSM is an abbreviation of mainstream media.

In component 3, three variables related to Wikipedia were over the cutoff point. In this component, negativity of Wikipedia was evident. From the component 4 to component 8, the valence of the components was positive oriented. In component 4, factor loading of high positivity, intimacy, low negativity of twitter were over the cutoff point. In component 5 and component 7, positivity and intimacy of mainstream media such as newspaper and TV were over the cutoff point. In this regard, both components were labeled “mainstream media positive” and “mainstream media intimacy” respectively.

In summary, the implication of the factor analysis of 24 emotion variables was nuanced. First, anxiety was found as still dominant emotion of media effect either mainstream media or social media (component 1 and 2). However, it was expected result. Second, positivity and intimacy, which have not been fully addressed emotions in media study, generated four components. Positive valences were not only related to social media such as twitter. Mainstream media which were considered as a negative platform also generated two components such as mainstream media positivity and intimacy. The results implicated that although traditional mainstream media have been regarded as “hard news” platform, users’ perception to the traditional mainstream media may not only be driven by negative feelings such as an anxiety for their surveillance. Anxiety and intimacy were founded in both mainstream media and social media, those medium gathered each main stream media and social media.

Third, separation between each medium was worth attentive. As it was revealed in cluster analysis, mainstream media and social media did not much join together.

Discriminant Analysis

Discriminant analysis provides the opportunity to specify independent variable(s) which best serve as the predictors of diverse groups of dependent variables (Mertler & Vannatta, 2010). In this exploratory study, discriminant analysis was employed to identify which of three dimensions of concepts was the best predictor of each group. An open ended question asking the subjects to name their homepage, was recorded and used as a grouping variable. Homepages were classified into four categories 1) MSM (such as *The NewYorkTimes.com*, MSNBC); 2) search engine (such as Google, Yahoo); 3) such as social media (Facebook, Twitter, g-mail); and 4) proprietary homepage (such as Apple.com).

The 24 variables related to emotions such as positive feeling, negative feeling, anxiety and intimacy were used as independent variables. A total of 87.7% of all cases were correctly classified. Above all, social media was correctly classified 95.8 % of the time. Following that, proprietary webpage 89.7%, mainstream media 85.2%, and search engine 82.5% of the time were correctly classified. Results exhibited that correct classification, or a *hit rate* of 80 percent or more across all four groups. The solution explained 48.5% of total variance with an effects size or a squared canonical correlation of .63, explaining 63 percent of total variance. Table 4 shows the results of classification.

Table 4: Classification results of Discriminant Analysis (Emotion Indicators)

		Classification Results ^a				
		Predicted Group Membership				
	Numeric HP	MSM	Search Engine	Social media	Proprietary	Total
%	MSM	85.2	3.7	3.7	7.4	100.0
	Search Engine	7.5	82.5	7.5	2.5	100.0
	Social media	.0	.0	95.8	4.2	100.0
	Proprietary	5.1	2.6	2.6	89.7	100.0
	Ungrouped cases	.0	.0	100.0	.0	100.0

a. 87.7% of original grouped cases correctly classified.

Discussion

This pretest was conducted to confirm the intuitive notion that main stream media news web sites are generally perceived to be negative and that social media web sites are generally perceived as positive by their users. This step was necessary to examine assessment of positive and negative news images across those two platforms in order to assess their impact on user meaning, measured as latency, memory, and felt emotions.

In many important ways the conduct of this experiment was no different than similar work done in psychology on cognition and emotion, except for an important shift in what Chaffee (1991) calls a study’s focal variable, that is, the variable of central interest. Much of the work done by psychology in the area which has come to be known as the “information processing paradigm,” focuses on the outcome, or dependent variable. Thus, a psychologists’ study of the effects of memory is more tightly focused on the dependent variable, memory, than the independent variable, a

stimulus which evokes fear. In fact, the “content” of the independent variable is in trivial at a certain level, as long as it has been shown to have high validity and reliability. Thus, an image of a spider or a snake might serve as well as the image of an earthquake victim in such a study. In some ways even better, to the degree the images of spiders and snakes may contain less collateral information that might be processed as “noise” and inflate error terms of the least squares statistics frequently used by them, making them less sensitive to systematic variance.

On the other hand, media effects research is frequently more interested in the content of the independent variable, and make it its focal concept. In this case, for instance a researcher might be explicitly interested in how news images of catastrophes, such as earthquake, might affect user memory. The problem for the media effects researcher is, then, that because their stimuli frequently to come from the real world, they invariably contain a great deal of complexity above and beyond the outcome, such as memory. Therefore the media effects scholar has to proceed in stimulus creation with a great deal of caution. Two bad outcomes can befall a flawed stimulus, a Type II error, where the size of the error term is inflated to the point that masks true variance in key statistical diagnostics, such as F and T scores. The second problem confronting the media scholar might be that some systematic elements in a stimulus is possibly driving least squares ratios and lead to a Type I error, which results in false causal inference. This is violating the key assumption to all least squares statistics, that the variance in the error term is random. One clever way many media effects researchers have dealt with the Type I problem is to include a repeated measure in their design, thus diluting the effects of unintended systematic stimulus

differences. Here, a technique that has usually been employed by psychologists as a tool to examine the effects in time series projects, where the same task may be repeated after experimental treatments has been employed to greatly enhance the validity of experimental research(Lang, 1994). This study did in fact use a repeated measure approach in the selection of images included in the content factor of the design.

However, the project presented yet another level of complexity to the stimulus design. Here the problem has to do with the platform factor of the model. The challenge had to do with the fact that, not only did problematic issues concerning stimuli discussed above had to be addressed, but even more daunting challenge of demonstrating that the theoretically specified variance, emotional valence, existed in platforms at all. As has been discussed in earlier chapters no obvious technological change accompanied the emergence of the classification some platforms as mainstream media and others such as social media. To that end this project employed a pretest.

The logic behind the analysis of the platform pretest data is as follows:

- **Descriptive Population Analysis:** A population of candidates for each theoretical level were preselected and rated. A bank of 77 questions was administered to a pretest population as described above. Measures of central tendency, means, and median, and measures of variance, standard deviations, minimum and maximum values were examined.
- **Cluster Analysis:** Hierarchical cluster analysis was then employed to look at the results from all 77 questions used in the pretest instrument. This form of

cluster analysis represents what is basically a statistical “blunt instrument,” to the degree that it does show similarities between variables, but lends little insight why they might be similar. This can make identifying clear patterns or trends difficult, and it is not unusual to see seemingly unrelated variables appear in unusual locations in the analysis output.

In this particular analysis variables associated with rating mainstream media and variables associated with rating social media groups together on the second analytical integration, making it clear that the two platforms can be clearly differentiated with any three dimensions of indicators. Mid-range iterations further showed that specific examples of platforms in each group do in fact display close relationship with certain platforms. For instance, CNN.com and Washington Post.com emerged as separate clusters fairly early in the analysis. The same can be said for social media platforms such as Facebook, Twitter and email. However, care has to be taken in fine grained inference because of the techniques unpredictable propensity to place a variable with a cluster that seems to have not theoretical orientation to it.

- Factor analysis: Factor analysis, a longtime tool used in social psychology, was then employed. Factor analysis has the advantage of isolating two or three key dimensions in highly dimensional data space, if they exist, and generating variable specific factor loading which are useful in “telling stories” or naming the key components. Hovland & Weiss (1951) demonstrated three factors key to understanding source credibility such as expertise, trustworthiness, and potency. Those results have been replaced time

after time in credibility research during the last 60 years and proved to be a valuable tool in its study. One consideration that has to be taken into account using this technique is that in two or three dimensional solutions, which are generally considered optimal, however, due to the nature of the statistic, the first factor always explains the most variance in a solution, with subsequent variables explaining less and less. This can, and has led to the assumption that the first factor is the most theoretically important, which might be more of a statistical artifact of the algorithm than the underlying nature of the data. Further, the technique relies heavily on the assumption that the variables, and subsequently the factors are independent or orthogonal, which may not be true. This too can lead to inference that has little theoretical foundation. This can be demonstrated fairly easily in a data set with collinear variables by adding and removing variables, and observing fairly dramatic changes in factor structure and variable loadings.

In the case of this particular analysis, when 24 variables of emotions were rotated, eight factors were generated with eigen value of 1 or more and the standard cutoff point .500. Examination of the variable loadings made it clear that the first two factors described the anxiety of main stream media and that of social media. Variable loadings were of further values exhibited more subtle or underestimated emotions such as intimacy and positivity. These factors exhibited that compassion and empathy held predicted loading scores. Overall, it was clear that subjects were distinguishing between platforms when they made their ratings.

- Discriminant analysis: The most powerful statistic employed was discriminant analysis, which allows the researcher to declare a categorical independent variable and test a set of dependent measures' capacity to correctly group cases into those categories. This proved to be exceptionally useful for this study because the statistic correctly classified all four platform categories specified by using pretest questions about their emotional content with 80 percent of higher accuracy. Any discriminant analysis predicting group membership above chance, in this case 25 percent, can be considered worth examination. Thus the results from this analysis were extremely encouraging in the sense it supported the idea that platforms do evoke highly nuanced emotional responses from subjects very uniformly.

While this particular strategy was born out of the nature of the theoretical foundation of the model under scrutiny, such a strategy may well serve other projects to the degree it adds considerable sophistication and precision to the highly complex stimulus material which media researcher regularly deal with.

To conclude, the results of the exploratory study raised two issues. First, the strongest factor which differentiates social media from main stream media as a news platform is emotion. This invites the need to investigate the nature of "emotion" both on social media and main stream media. It should be studied that whether social media can be characterized by specific positive emotions such as compassion or empathy different from negative emotions such as negativity and intensity of

traditional newsworthiness. Second, the interaction between news contents and news platform should be examined. Whether social media, a personalized platform can embrace the role of traditional mainstream news media or replace the definition of newsworthiness is worth of being examined. Based on these results, the study was designed. The results of exploratory study were also taken into consideration with the results of the study in discussion.

Chapter 5: Method

This was a 2 X 2 X 2 fractional factorial repeated measure experiment. The factors were platform (main stream media webpage, social media webpage), Image emotion (negative, positive). The repeated measure was news story (1 to 4). .

Dependent variables included memory and felt emotion. Image and text memory was measured for both accuracy and latency to respond in millisecond.

Felt image emotions included measurers for valence, intensity, empathy and compassion. Participator demographic characteristics included gender, race, and years at the university. To tap into participants' attributes of daily media use, questions about their main news source and recent usage of both main stream news media and social media were included.

Participants

A total of 83 students enrolled in different colleges and departments in a large mid Atlantic research university were recruited for the experiment. The instructors of 4 undergraduate courses agreed to accommodate the experiment as for opportunities of extra credits for their students. The four courses were not related to the experiment. Among participants, 48.2% (40 students) were female, 51.8% (43 students) were male. Majors of participants were spread out 30 different subjects ranged from accounting to women's studies. Majors included humanities, social science, natural science, and engineering. In terms of the years at the university, 44.6 % (37 students) of subjects were freshmen. Followed by that, 31.3% (26 students) were sophomore, 8.4 % (7 students) were juniors, and 14.5% (12 students) were seniors. 1.2% (1

student) has attended more than 4 years ($M = 1.91$ years, $SD = 1.11$ years). In this study, instead of subjects' biological age years at university was employed, given their degree of exposure. This was in terms of racial diversity, subjects were composed of White 71.1% (59 students), African American 13.3% (11 students), Asian 8.4% (7 students), two or more races 6.0% (5 students) and Hispanic 1.2% (1 student).

Student participants were not used by convenience: They were specifically targeted as a cohort who would have information gathering and computer usage behaviors consistent with the intent of this experiment. For instance, this group represents perhaps the first cohort of computer users who have had full exposure to both mature mainstream media online news sources as well as having social media, such as Facebook, play an important role in their online lives. As of 2010, approximately 4 in 10 Americans (41%) reported that they get most of their national and international news from the Internet. Demographically 18 to 29 year olds and college graduates scored as the most frequent consumers of the Internet news. The proportion citing the Internet as news source has increased from 24% in 2007, while the proportion of newspaper has been declined from 34% in 2007 to 31% in 2010 (Pew Research Center, 2011b). At the same time social media have been rapidly increasing their role as a platform for online news websites. A total of 9 percent of survey respondents reported in 2011 that they received news on social media websites. That growth doubled between 2010-2011 (Pew Research Center, 2012a), with 83% of such users ranging in age from 18-29 (Pew Research Center, 2011a). Thus, the cohort used for this experiment, that is within the range of 18 to 29 year old

college educates, were the most frequent users of both mainstream and social media as sources for news.

Material

Stimulus creation involved two steps: The creation of host web pages, one category made up of main stream media and social media host pages, and the second to selection emotion laden images with news headlines and a brief lead sentence to be inserted in them.

The first step required validating the basic assumption of this study that mainstream media are generally considered emotionally negative and that social media are generally considered emotionally positive. As has been detailed in the first chapter, while these assumptions are intuitively attractive, no empirical validation to support them could be found. Therefore considerable exploratory pretesting had to be executed to insure the assumptions of platform emotion were valid had to be conducted. That work is detailed in chapter 4.

The second step required that existing news photographs be pretested for their emotional valence. That step was sustainably less problematic than the platform evaluation, were a substantial literature exists detailing means to pretest the photographs (Lang, 1994; Newhagen& reeves, 1992).

Selection of Mainstream media and Facebook Webpage

Once the emotional valence associated with mainstream and social media had been validated, host web pages from main stream media news websites and Facebook were selected.

For the platform of mainstream media news websites, 8 front pages of the Washington Post.com appearing between February 19 and March 8, 2012 were selected. Front pages which might have included emotion laden images, such as stories about protests in Afghanistan over a burning of the Koran, and school shootings in Ohio were excluded to prevent them from affecting effects of the stimulus images. Those news stories were then hot issues which may lead the dominance over stimulus. For the platform of social media, 8 genuine Facebook pages were employed.⁴ The length of selected pages both platforms were controlled to approximately 28- inches from the top to the bottom when scrolled. The web pages were displayed with 1280x 1024 pixels, 19-inch computer monitor.

Image Selection and Classification

First, a pool of possible images was selected for pretesting. They included 18 negative, 18 positive and 10 neutral images from Google Image, Washington Post.com, and CNN.com. The negative images depicted natural disasters, poverty, political demonstrations, fighting and people showing sorrow and loneliness. Positive images included sports game, playing children, festivals, dancing, and dating. The images were pretested by 23 students enrolled in a journalism course in Fall semester 2011. Valence and intensity were judged on 5-point scales of Self –Assessment Manikin (SAM) pictorial scale (Bradley & Lang, 1994).⁵ Empathy and compassion

⁴ The authors of the Facebook pages granted their permission for use in this study and care was taken not to include any personal information that might prove detrimental to them. Further, To suppress the possibility that participants could be acquainted with the owners of Facebook or their Facebook friends, owners who are geographically remote from the experiment site and/or demographically distant from participants were selected. Except an embedded stimulus, remaining portion of the selected pages was intact in order to be seen as natural as possible.

⁵ Responses were displayed on a 5-point scales ranging from 1=*very positive/very calm* to 5=*very negative/very intense*.

were measured on 5-point Likert-like scales.⁶ Perceived proximity to images was measured on 5-point Likert-like scales. All 46 images were displayed using a Microsoft Power Point Slide presentation. Two image sizes were pretested; big (3.25-by 2-inch) and thumb nail (1- by -0.7- inch) size. Image size and order were varied to construct two presentations. Pretest participants were randomly assigned to one of the two orders. Time of image exposure was 4 seconds and opportunity to answer questions for each image was 36 seconds.

Analysis showed a mean valence score for images thought to be negative was 4.05 with a standard deviation of .774. Values for images thought to be positive were 2.12 with a standard deviation of .850. Based on the results the strongest 4 negative and 4 positive images were selected.

The four negative images were depictions of the Sichuan (China) earthquake in 2008, the Haiti earthquake in 2010, the Japan tsunami in 2011 and global childhood poverty. Four positive images depicted a family gathering, the Cherry Blossom festival, a tailgate party, and annual Oktoberfest in Germany. It turned out that, in terms of proximity, selected 4 negative images were rated as comparatively “far” than 4 positive images.⁷ A mean proximity for 4 negative images was 3.53, while mean proximity for 4 positive images was 2.22 with a standard deviation of 1.139.

Text for each image was created from news stories associated with the image topics. In order to be fully embedded identical text in both main stream news media

⁶ Question wording was; “How do you rate this image for its Empathy/Compassion?” Responses were displayed on a 5-point Likert like scales ranging from 1= *extremely* to 5= *not at all*.

⁷ Question wording was; “How Near or Far is this image from you?” Responses were displayed on a 5-point Likert like scales ranging from 1= *very near* to 5= *very far*.

and Facebook web pages, text was made up of 50-60 words including the title of the image. Appendix A shows the eight images and the text associated with them.

Combining Platform and Contents

To limit systematic error, such as priming effect of specific story or image in relation to host web pages, the combination of platform and contents which were composed of image and its associated text were alternated. Thus, no combination of the platform and contents was repeated. That is, each stimulus contents were unique in that the host web page or image was never replicated. This process resulted in a total of 126 unique web pages for the experiment.

The number of manipulated web pages was calculated by the equation: numbers of selected templates of each platform (8) X selected images (8, 4 negative and 4 positive) X levels of platforms (2, Washington Post.com and Facebook). Each one of 8 selected images and texts was embedded into every single template, either Washington Post.com or Facebook.

Each subject viewed a unique set of eight manipulated web pages which were selected from a pool of 126 web pages. Among eight pages, four were the front page of main stream media news website, Washington Post.com. Other 4 were Facebook. Selections of web pages for a set were made by rotations of templates and images. No two subjects saw the identical order and combination of a set. Appendix B indicates the combination and order of 90 sets which were viewed for each subject.

In each web page, only one stimulus image and following text was embedded. Each stimulus was embedded into the same location of each web page by a platform. On the Washington Post.com, stimulus was embedded into the upper right corner

with the text. The location has been regarded as the place of top image of the front page. On Facebook, stimulus was embedded as the first posting of the page with one fake friend's comment. On both platforms, image size of each stimulus was approximately same (3.75- by- 2.16-inch). The size of stimulus was congruent with the typical size and format of images either on actual Washington Post.com or Facebook. Text followed by each image was identical on both platforms.

Procedure

The experiment was conducted between March 27 and April 12 in 2012. Ninety subjects signed up for one hour time slot experiment as of their conveniences. Finally, 83 subjects participated in experiments.

The experiment was held in New Media Research Laboratory at a large mid Atlantic research university. Upon arrival, subjects were greeted and guided to the experiment space, which was partly partitioned from the rest of the laboratory. The experimental computer was located on a standard desk, making the session experience as similar to a real life setting as possible. When sitting on a chair, the distance between the monitor and a subject was approximately 3 feet.

First the subject signed a consent form. The subject was reminded that s/he could discontinue an experiment at any time without any penalty. Appendix D contains consent form. When consent form was obtained, experimenter explained the protocol of an experiment for a minute. A subject was informed that she would see several web pages and then would answer series of questions related to the web pages. After this brief oral instruction, detailed instructions of each step were

displayed on the computer monitor. Experimenter sat separately from a subject only for handling a possible emergency situation.

The experiment was administered by two media psychological experiment software: MediaLab (2010), DirectRT(2008). Both software work compatibly. Software was installed in a desktop computer in the New Media Research Laboratory at the large mid Atlantic university. They were used to administer the experiment such as the onset and offset of stimuli, implementing measurements of dependent variables and recording data.

The key features of MediaLab are to administer stimuli and questionnaires (Dependent Variables) simultaneously. Experiment file of MediaLab supports audio/video function, within group randomization, between group randomization, and control of exposure time of stimuli. As one of the optional functions, MediaLab measures reaction time at the resolution of 1 millisecond. Diverse styles of questionnaires can be administered by questionnaire file of MediaLab: scale responses, multiple selections, fill in the blank, short essay. Collected responses are transformed into three versions of data which fit for SPSS, Microsoft Excel and text file. In this study, SPSS was used. For an individual experiment, total 10 web pages including practice pages and 70 multiple choice questions including practices were administered by MediaLab.

DirectRT was used for more accurate measuring of memory for image recognition. It recorded the reaction time and accuracy of subject's memory for an image. When timing is an important variable to be measured such as latency, DirectRT can be employed instead of MediaLab. Since response timing of DirectRT

begins with an exposure of the first screen, it reduces 10-17 milliseconds of random error. Accuracy of the responses (“true” or “false”) can be also written by DirectRT. A total of 21 images including three practice images were administered by DirectRT for measuring memory for images.

The experiment session took about 30 minutes. It was made up of four parts. In the first part the subject viewed the stimuli, a total of 10 web pages, that included 2 practice pages. Each page was automatically advanced in every 60 seconds. Between the pages, a blank white screen was displayed for one second. While viewing each page, subjects could scroll up and down as much as they wanted. They were not able, however, to click through on hyperlinks. Each subject viewed exactly same numbers of pages of Washington Post.com(4) and Facebook (4). In each set, combinations of platform and image were differed. For example, the first subject viewed negative image 1 and positive image 1 on Washington Post.com, while the fourth subject saw both images on Facebook. After stimulus presentation, the subjects relaxed a few minutes while computer files used to collect data for dependent variable were loaded.

In the part II, subject first viewed a number of images, including the ones in the stimulus plus others they had not seen. Direct RT software was used for part II to record the reaction time and accuracy of subject’s memory for an image. Subjects were to press a “YES” button on a button box as fast as they could if they had previously seen the image. They were instructed to press a “NO” button as fast as they could if they had not seen the image. After instructions, three practices were provided. For real questions, total 16 images were viewed. Among them 8 images (4 negative, 4 positive) were exposed in the part I as stimuli, another 8 were foils. The

size of each image was approximately 5-by 3-inch. Images were reflected on the center of the monitor. When a subject hit “YES” or “No” button, next image immediately replaced the previous image. Thus both accuracy and latency to respond to the images was recorded in millisecond. Appendix E contains instructions and sample question of the part II.

In the part III, subjects were shown only the 8 actual images which were shown as the stimuli in part I and asked to respond to a number of Likert like questions about the images. For each image, a set of six questions were given. Subject answered their felt emotions about an image such as valence, intensity, empathy and compassion. In the instructions, to help subjects understand the meaning of questions of valence and intensity, two sample SAMS were shown. These four questions were rotated for each image. The last 2 questions asked about their memory of the text which was accompanied with an image. Appendix F contains the questions for part III. A subject selected the answer by clicking mouse on one choice among 5 choices. Immediately, next question refresh the previous question. For each question, image was provided at the upper center of the monitor. Question and choices were displayed below an image. Subjects were given 2 sets of practice questions prior to the actual images. Including practices, total 60 questions were given. Without informing subjects, both subject’s self-report to the Likert-like scales and their latency to respond in millisecond to the questions was recorded.

At the conclusion of the session, subjects were asked seven demographic questions, (see Appendix G). After completing final questions, subjects were debriefed, thanked and escorted out of the laboratory.

Measurement

Memory

Memories for images and text were measured by latency of reaction time and accuracy.

Latency to respond memory of image was asked by the question: “If you saw the image in the previous session, hit the “YES” button as fast as you can. If you did not see the image in the previous session, hit the “NO” button as fast as you can.” Subject hit either button on the button box, auxiliary application which supports DirectRT software. When button was hit, reaction time was written into data folder of DirectRT at the resolution of 1 millisecond.

Accuracy of memory for image was written as “True” or “False.” When a subject hit “Yes” button for an image which was seen, it was recorded as “True.” Likewise, when subject hit “Yes” button for an image which was not seen, it was written as “False.” Those records were written in numeric and words into data file of DirectRT software with Microsoft Excel file.

For each stimulus, *accuracy of memory for text* was measured by two questions. One question was related to the title, the other was associated with body text. For example, for negative image 1 which was titled “strong women in post-quake Sichuan,” first factual memory question asked about “Where did this incident take place?” The second question asked, “According to the story, how long was this women trapped under the rubbles before being rescued?” The correct answer, “a week” had been stated in the body text. For each question, five plausible choices were given. One correct answer was coded as 0, other four false answers were coded as 1.

Measuring accuracy of memory is related to recall process of memory along with latency. Text memory is also determined by the Limited Capacity theory. Accuracy of memory for text has significance, since stimuli of media effect research like this study generally are composed of hierarchical structure of texts such as heading and body texts with image. Information-processing model has supported a hierarchical structure of memory, which claims that text memory is recalled from most important to least important. Based on hierarchical structure of memory, studies have examined that topic driven text is better recalled than detailed text, headings work as a cue for body text memory, and pictorial description supports text memory (McKoon, 1977; Ritchey, Schuster, & Allen, 2008). In this regard, accuracy of text memory were measured for heading and body text separately on both platforms.

Latency to respond memory of text was simultaneously measured when a subject answered accuracy questions for text. When a subject click the mouse on one of the answers on the screen, reaction time was written at the resolution of 1millisecond in the data file of MediaLab software.

Felt Emotions

Felt emotions included basic emotions such as valence and intensity and higher order emotions such as empathy and compassion. For each emotion, both subject's self-report and reaction time to questions were measured. Reaction times were automatically input and written into data file of MediaLab software when a subject selected the answer of self-report question.

Valence and *intensity* were measured by asking the question “How positive or negative does this image makes you feel?” “How intense or calm does this image

makes you feel?” A subject answered on a 5 point Likert scales (1= *very positive* or *very calm* and 5= *very negative* or *very intense*).

Empathy was measured by the question with the clear definition of the concept. “Empathy means how much I feel the people in the image are like me. How do you rate this image for its empathy?” A subject answered on 5 point Likert scales (1= *not at all* and 5= *extremely*).

Compassion was measured by the question: “Compassion means how much I share the suffering with the person in the image. How do you rate this image for its compassion?” Answers were given on 5 point Likert scales (1= *not at all* and 5= *extremely*).

Demographics

Main news source was asked by the question, “What is your main source for news?” A subject answered to 4 multiple choices (1=*main stream media* e.g., Washington Post.com, CNN.com, 2=*search engines* e.g., Google, MSN, 3=*social media* e.g., Facebook, Twitter, 4= *other*).

Recent usage of main stream media was asked by the question, “The last few years, I have used main stream media news websites such as Washington Post.com or CNN.com as a source for useful news to me” A subject answered on a 5 point Likert scales (1=*a lot less*, 3= *about the same* and 5= *a lot more*) to 5 multiple choices.

Recent usage of Facebook was also asked by the same way.

Major, years in school, gender and **race** were asked as control variables.

Chapter 6: Results

The dependent variables for this study included memory for images, measured as accuracy and latency to respond; memory for text, measured as accuracy to identify headline content and latency to respond to content questions; memory for text body content, measured as accuracy to identify content and latency to respond to content questions. They also included valence, intensity, empathy and compassion for images, measured on Likert-like scales, and latency to respond to those scales.

The primary statistical procedure employed to analyze data was repeated measure analysis of variance.

Memory

Memory of Image

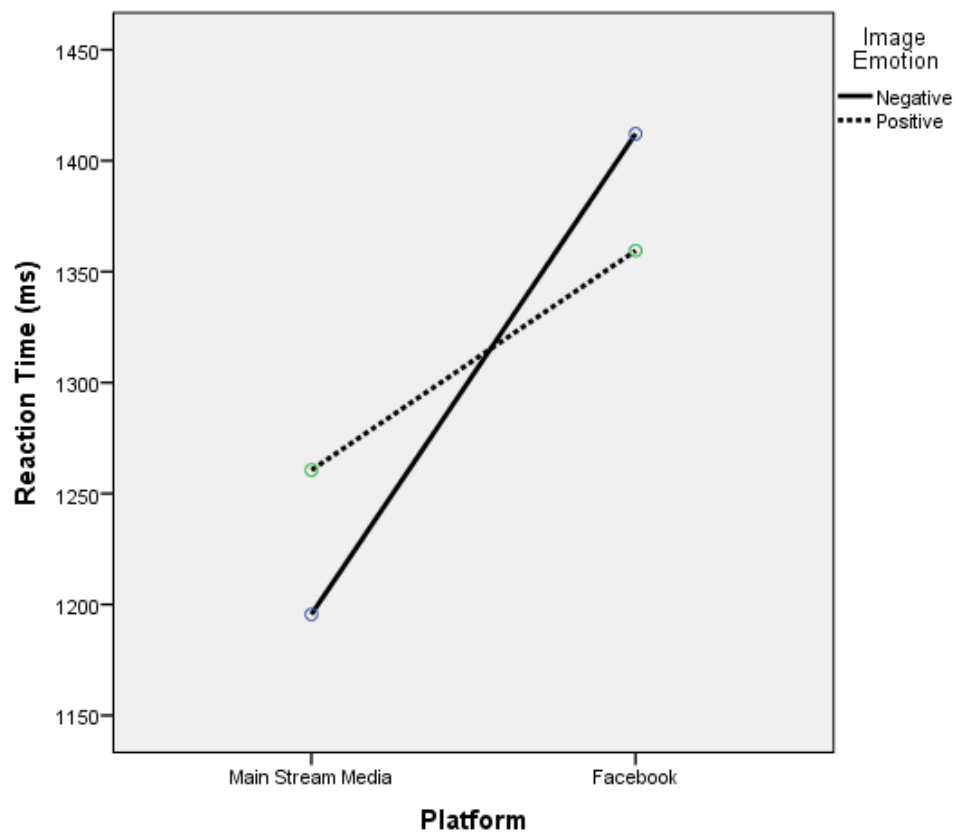
Latency to respond to memory of images.

There was a main effect for news platform on subject latency to respond to images, $F(1, 82) = 8.75, p < .004, \eta^2 = .096$. Subjects responded to images faster when they were embedded in main stream media web pages ($M=1228$ ms) than when they were embedded in Facebook. ($M=1386$ ms).

Figure 1 shows a crossover interaction between platform and image emotion, $F(1, 82) = 3.85, p < .05, \eta^2 = .05$ when number of years the subjects had spent at the university was introduced as a covariate. Subjects responded to negative images fastest of all conditions when they saw them embedded in main stream media web pages ($M=1196$ ms) than when they were embedded in Facebook ($M=1412$ ms),

followed by positive images embedded on main stream media (1260 ms). However, subjects responded faster to positive image embedded in social media web pages ($M=1359$ ms) than for negative images ($M=1412$ ms). The result indicates that negative images were better remembered on main stream media webpage, while positive image were better recollected on Facebook. Figure 5 contains the results.

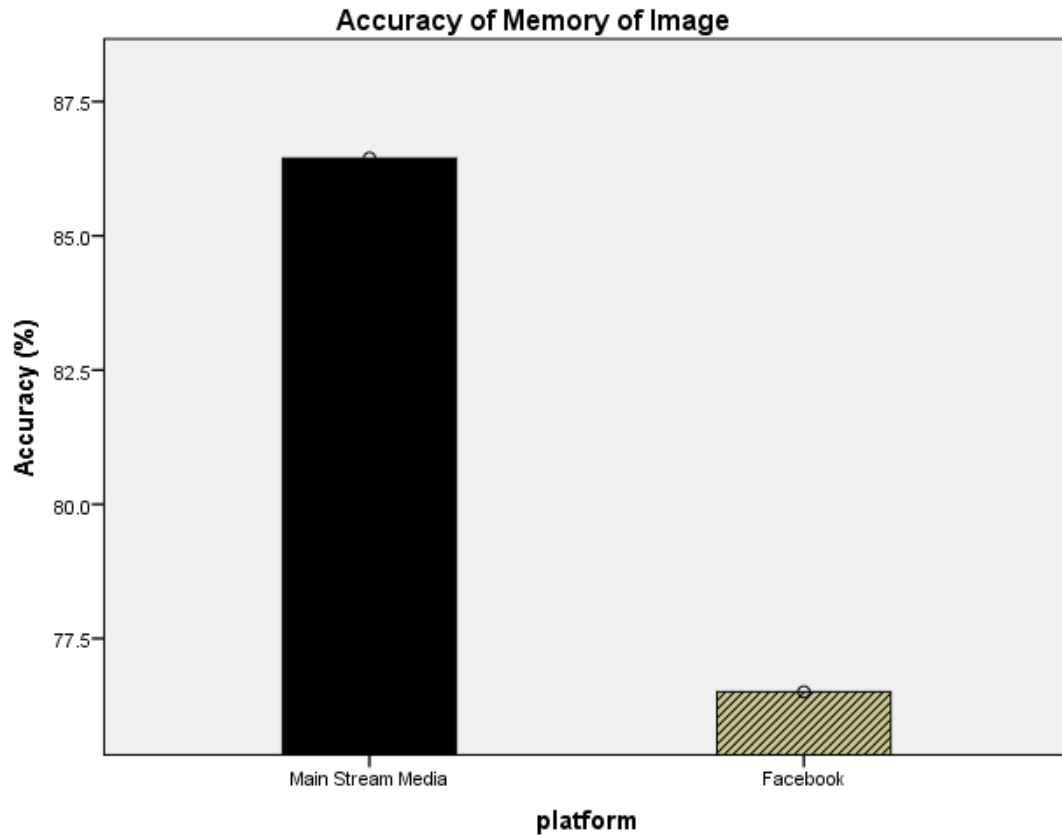
Figure 5. Latency to Respond to Memory of Image



Accuracy of memory of images.

There was a main effect of platform on image accuracy, $F(1, 82) = 12.53, P < .001, \eta^2 = .133$. Subjects recollected images more accurately when they had viewed images on main stream media ($M=86.4\%$) than the case when they had seen them on Facebook ($M=76.5\%$). The accuracy was greater on main stream media web page for both negative (85.5%) and positive image (87.3%) than on Facebook (negative $M=74.1\%$, positive $M=78.9\%$). Figure 2 represents the superior accuracy of subjects on main stream media than that of Facebook. This result illustrates dominance of main stream media of drawing users' attention compared to that of Facebook even when social media are prevailed. Figure 6 exhibits subjects' accuracy.

Figure 6. Accuracy of Memory of Image



Memory of Text: Headline and Body Text

For each image, two kinds of text questions were given. The first one was related to the headline, while the second one was asking factual memory which had been embedded in the body text below headline.

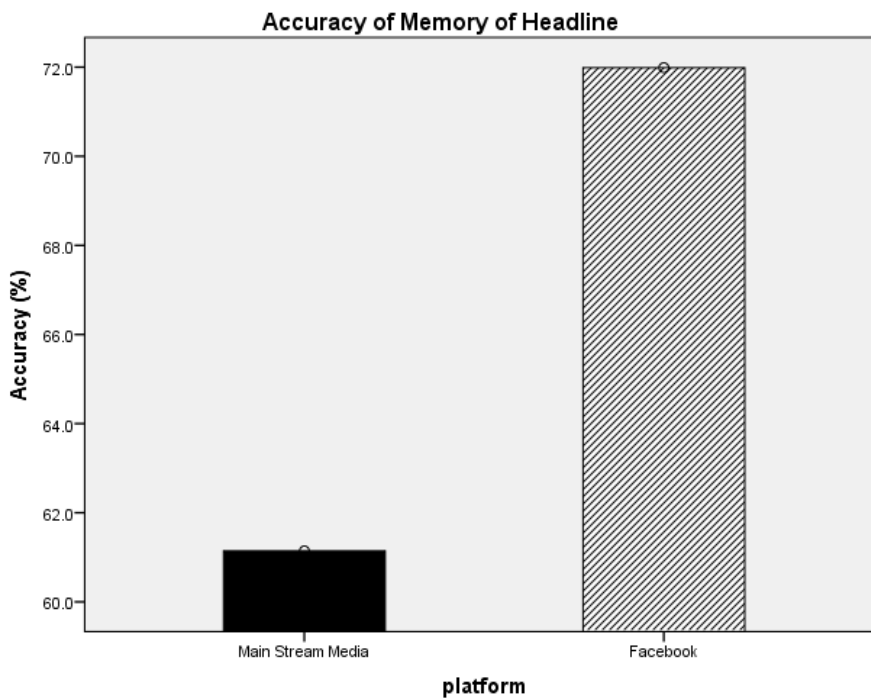
Latency to respond to memory of headline.

No main effect or interaction effect was found.

Accuracy of memory of headline.

Main effect of platform for accuracy of memory for headline was found. $F(1, 82) = 9.25, p < .003, \eta^2 = .10$. Accuracy for answering questions about information in the headlines, across the image emotions, memory of headlines on main stream media ($M = 61.1\%$) was less accurate than they were reflected on social media ($M = 72.0\%$). Figure 7 displays the dominance of Facebook in terms of memory for headline.

Figure 7. Accuracy of Memory of Headline

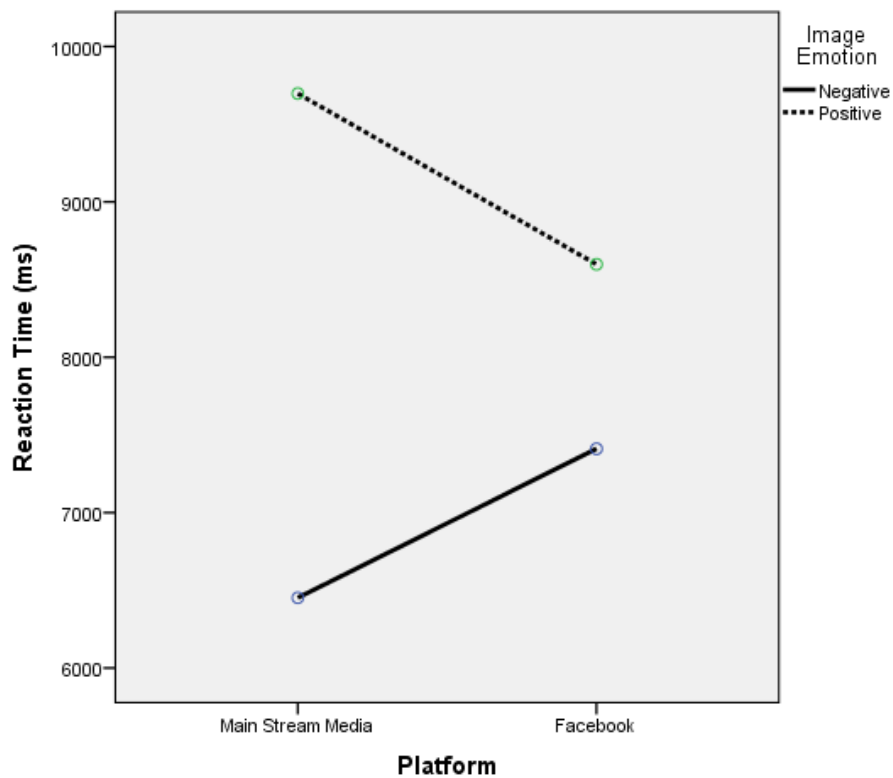


Latency to respond to memory of body text.

Figure 4 shows an interaction between image emotion and platform emotion for latency to respond to a question in the body of text $F(1, 82) = 4.388, p < .040, \eta^2 = .05$.

$\eta^2 = .05$. For the text body questions about negative images, embedded in a main stream media web platform was the fastest of all conditions ($M=6452$ ms). On the other hand, latency to respond to positive images embedded in a main stream media platform was the slowest of all conditions ($M=9697$ ms). Latency to respond times decreased for positive images embedded in social media web pages ($M=7411$ ms), but increased for negative images ($M=8598.2$ ms). Figure 8 shows the interaction between platform and image emotions on latency of body text.

Figure 8. Latency to Respond to Memory of Body Text

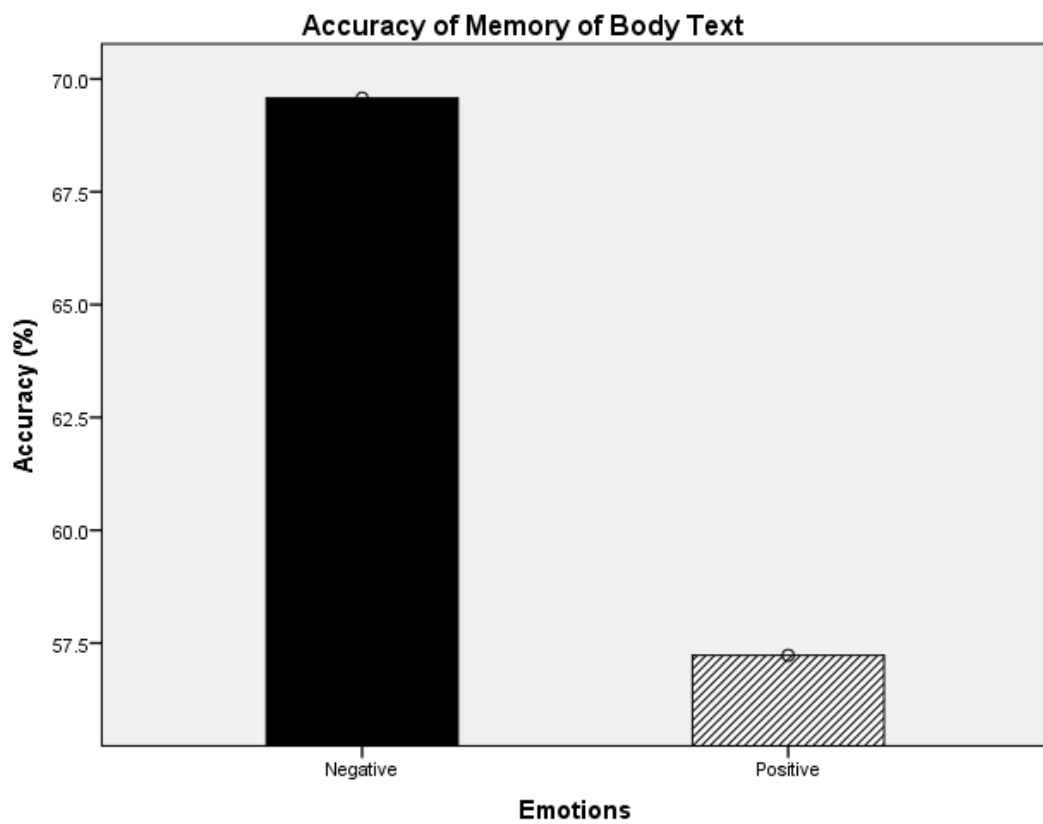


Accuracy of memory of body text.

There was a main effect of image emotions for the accuracy of memory of body text.

$F(1, 82) = 11.017, p < .001, \eta^2 = .118$. Questions of the body texts which were associated with negative images ($M=69.6\%$) received more accurate questions than the questions were associated with positive image ($M= 57.2 \%$). Figure 9 represents that negative image has greater effects on recollection of body texts than positive images across the platforms.

Figure 9. Accuracy of Memory of Body Text



Felt Emotions

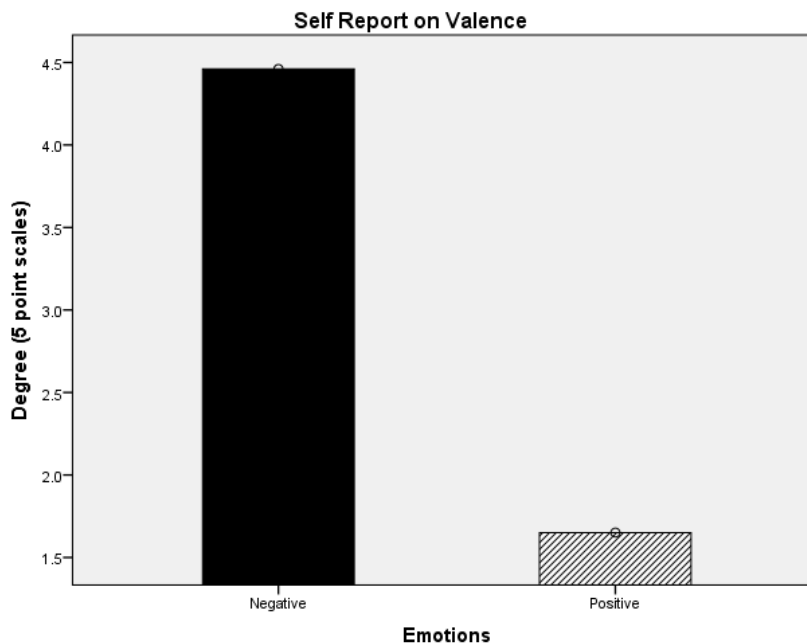
Each image the subject saw in the stimulus was displayed on the top half of a computer monitor. Subjects clicked on one of the five responses on Likert-like scales below the image. In the introduction, the SAMS (Bradley & Lang, 1994) images used for pretest classification of image emotion were displayed to help subjects understand the scales of image valence and intensity. Written scales were used for empathy and compassion. The subject's latency to respond to those questions was also recorded.

Valence

Self-report on valence

Strong main effect of image emotion was confirmed. $F(1,82)=1109.420$, $p<000$, $\eta^2 = .931$. The mean of negative images ($M=4.46$) was far larger than that of positive image ($M=1.65$).

Figure 10. Self-Report on Valence

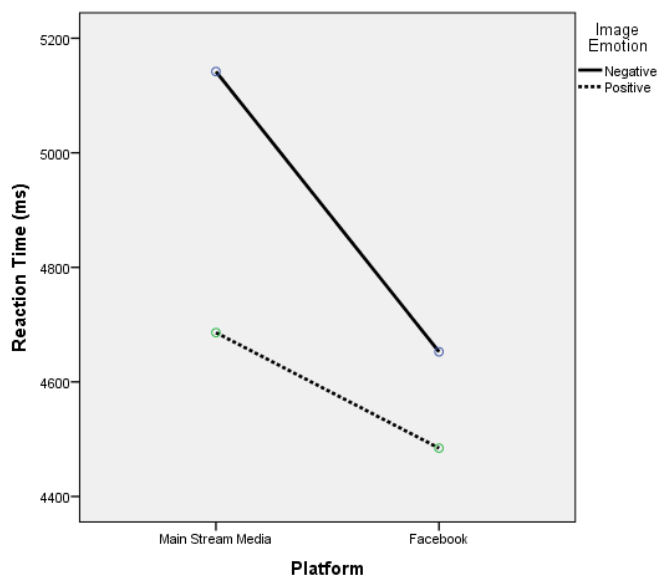


Latency to respond valence

Response latency times for valence did not exhibit main effect or interaction effect. However, mean reaction time showed counterintuitive results. Response time for negative images embedded in main stream media web pages was the slowest ($M=5142$ ms). It was followed by response latency times for positive images embedded in main stream media ($M= 4194$ ms). Latency to respond times for negative images embedded in main stream media followed ($M=4652$) with latency response times for positive images embedded in social media scoring the fastest of all conditions ($M=4484$).

In Figure 11, end point of upper left side illustrates that the reaction time to negative images embedded in main stream media was slowest. Contrary to that, the end point of under right side exhibits that latency to respond to positive images on Facebook was fast.

Figure 11. Latency to Respond to Valence

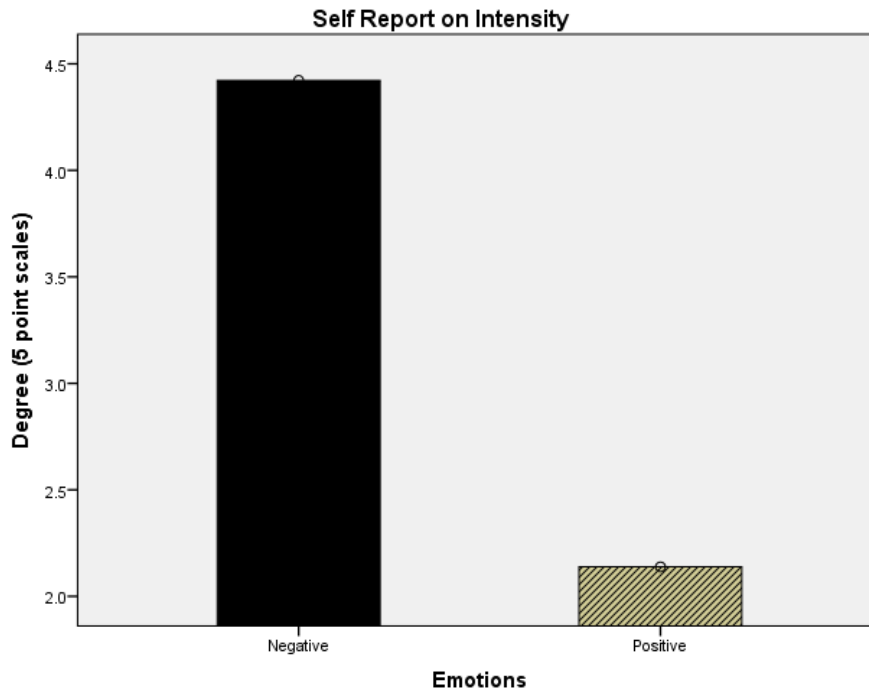


Intensity⁸

Self-report on intensity

A main effect of image for self-reported intensity was confirmed. $F(1,82)=865.307, p < .000, \eta^2 = .859$. Self-reported felt intensity for negative stimulus images ($M=4.42$) was greater than that of positive image ($M= 2.14$). Figure 12 illustrates the result of self-report on intensity.

Figure 12. Self-Report on Intensity

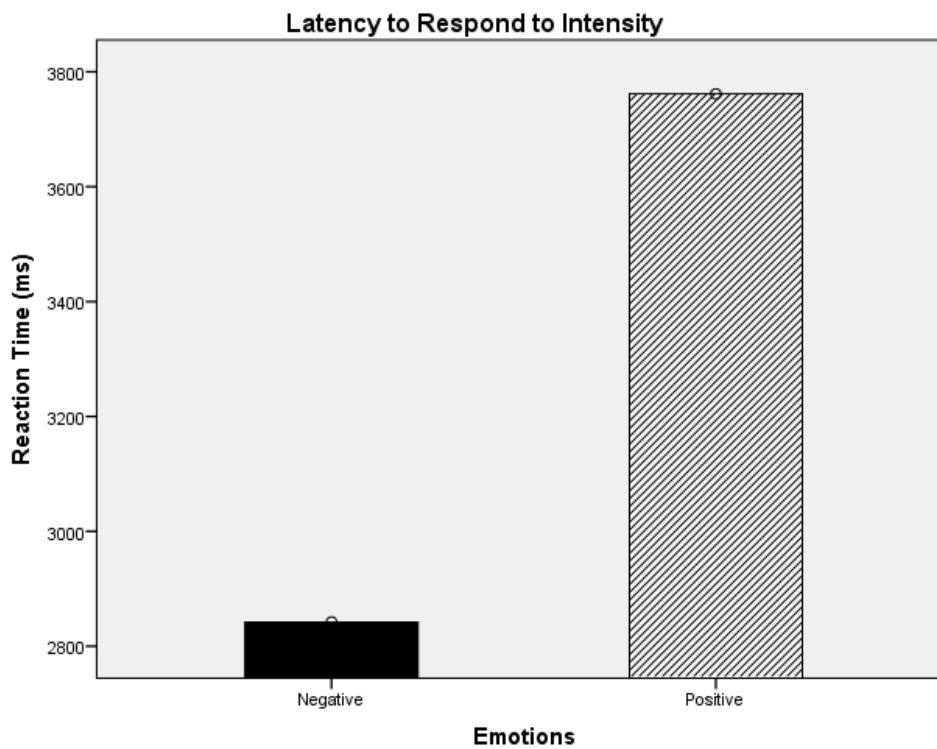


⁸ Intensity was measured by the question, "How intense or calm does this image make you feel?" Responses were ranged on a 5 point Likert scales (1= *very calm* and 5= *very intense*).

Latency to respond to intensity

Main effect of image emotions for self-reported intensity was found. $F(1,82) = 27.91, p < .000, \eta^2 = .254$. Latency to respond about the question of intensity for negative image ($M = 2842$ ms) was faster than that of positive image ($M = 3762$ ms). Below is the illustration of latency of intensity.

Figure 13. Latency to Respond to Intensity

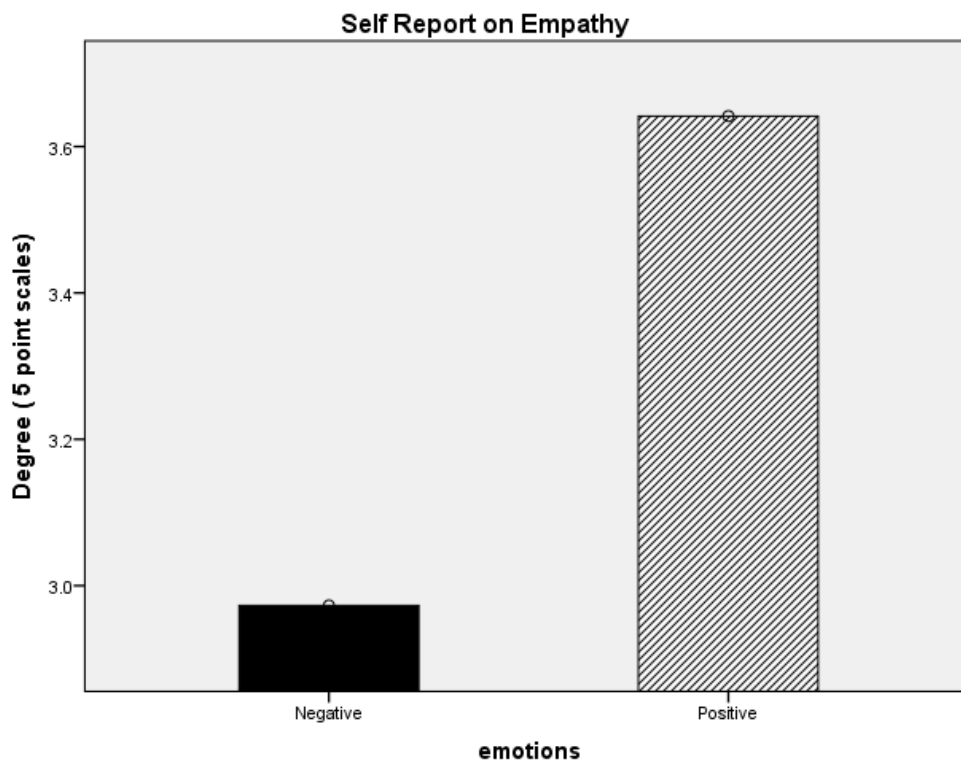


Empathy

Self-report on empathy.

There was a main effect of image emotions, $F(1,82)=14.02, p<.001, \eta^2 = .146$. Self-reported degree of empathy for positive stimulus images ($M=3.64$) was greater than that of negative images ($M= 2.97$).⁹

Figure 14. Self-Report on Empathy



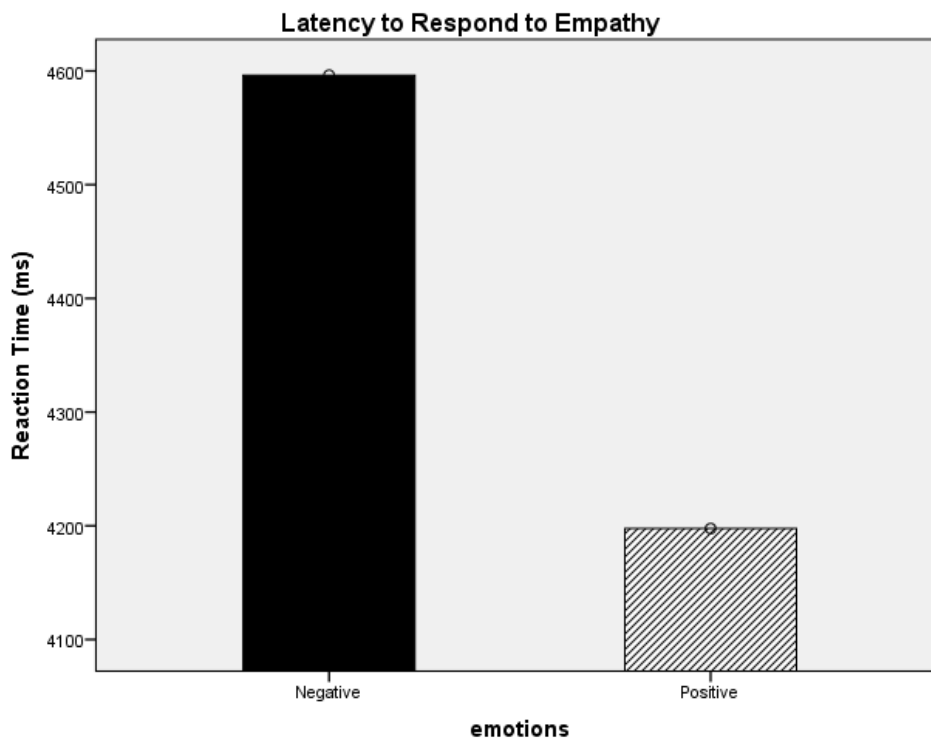
Latency to respond to empathy.

A main effect of image emotion for latency to respond to self-reported empathy questions were found. $F(1,82)=6.43, p<.013, \eta^2 = .073$. Subjects took

⁹ Empathy was asked by the question “How much I feel the people in the image are like me?” Responses were reported by 5 point Likert scales from 1=*not at all* to 5=*extremely*.

longer to respond to the empathy question when the stimulus image was negative ($M=4596$ ms) than when it was positive ($M=4198$ ms) on main stream media. Figure 15 exhibits the results.

Figure 15. Latency to Respond to Empathy



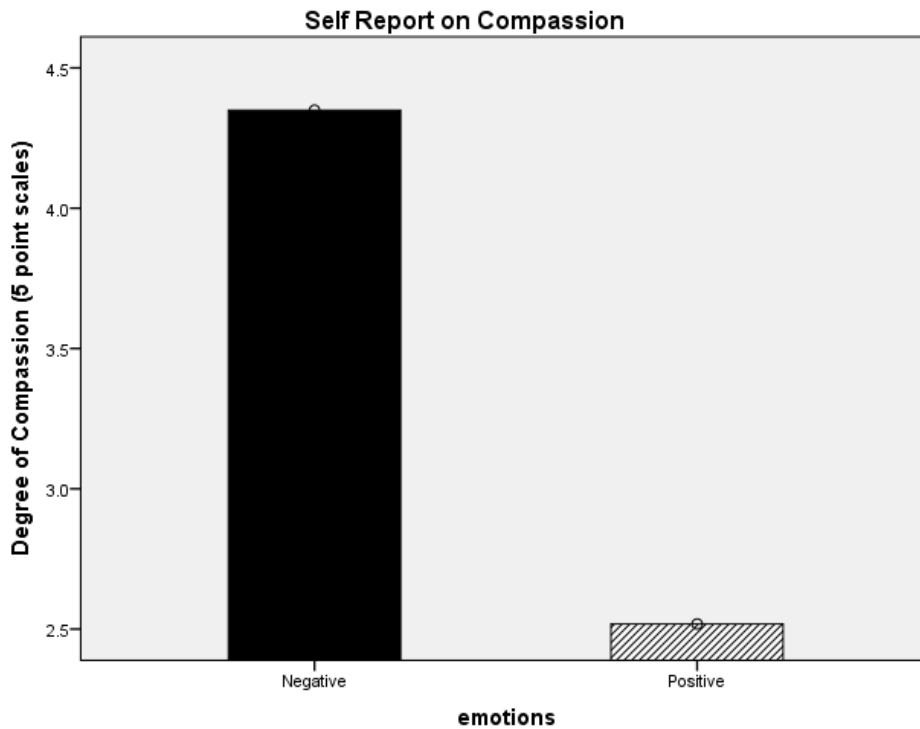
Compassion

Self-report on compassion.

A main effect of image emotion for self-reported felt compassion was found, $F(1,82)= 143.432, p < .000, \eta^2 = .636$. Self-reported felt compassion of negative images ($M= 4.349$) was greater than that for positive images ($M=2.518$)¹⁰

¹⁰ Compassion was asked by the question, “How much I share the suffering with the person in the image?” Responses were reported by 5 point Likert scales from 1=*not at all compassionate* to 5=*extremely compassionate*.

Figure 16. Self-Report on Compassion



Latency to respond to compassion.

The results of latency to respond to compassion exhibited main effect of image emotion.

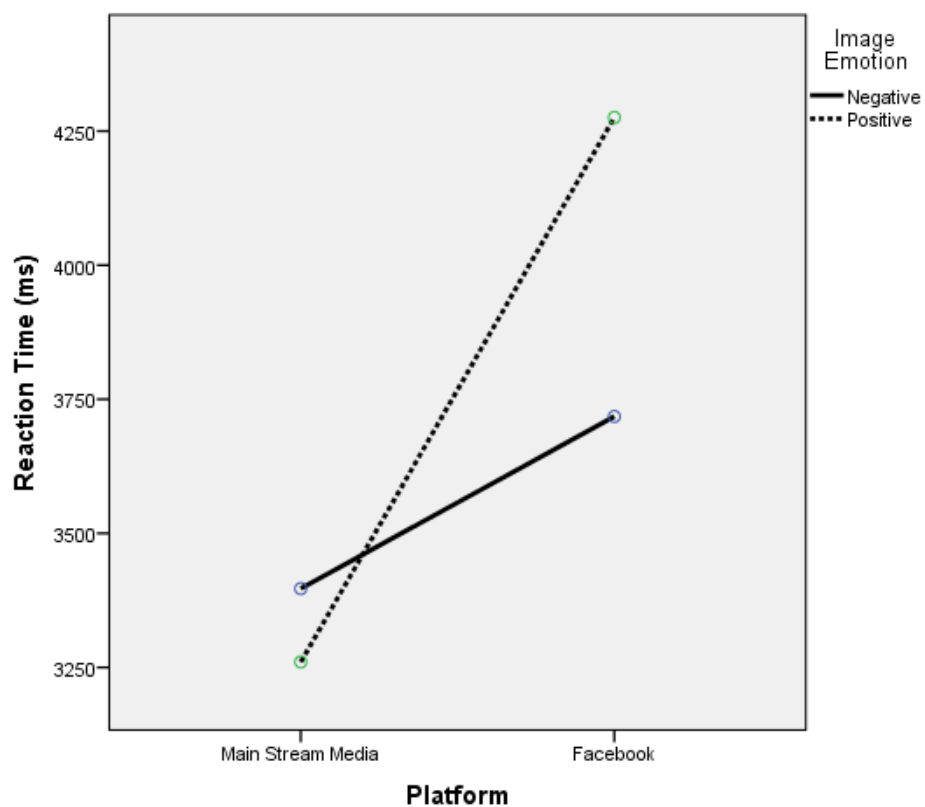
$F(1, 82) = 7.620, p < .007, \eta^2 = .085$. Latency to respond to images which were embedded in main stream media platforms are faster ($M=3329$ ms) than images embedded in social media web platforms ($M=3997$ ms).

Latency to respond to compassion did not show any interaction effect.

However, the latency to respond was associated with the valence of images on each platform. Two end points of positive images in Figure 17 shows the sharp difference of latency to respond to positive images whether they were represented on main

stream media or social media. When subjects were asked about their compassion on positive image which was seen on main stream media ($M=3260$ ms), the latency to respond was far faster than the case when they were represented on social media ($M=4275$ ms). With relation to this, degree of self-report on felt compassion showed main effect of image emotion only. To the contrary, latency to respond to the felt compassion indicated a main effect of platform only. This seeming contradiction will be further discussed.

Figure 17. Latency to Respond to Compassion



To summarize the results of both compassion and empathy, for negative images, the main effect of self-report on empathy demonstrated the opposite direction from that of compassion. When subjects were asked by the question, they reported high degree of compassion ($M= 4.35$) compared to positive images ($M=2.52$). For the same negative images, however, when subjects were questioned by for their empathy, they reported low degree of empathy. Results confirms that subjects more identified themselves with people in a positive situation ($M= 3.67$) than that of in a negative situation ($M=2.94$). Subjects submitted ambivalent decisions of their empathy and compassion for same negative or positive images.

Summary

In memory and self-reported felt emotions of news images and associated texts on both main stream media and Facebook, the interaction effects between platform and image emotions were not evident.

In terms of memory, result of latency and accuracy of memory of image, accuracy of memory of headline text showed main effect of platform. Results of self-reported felt emotions, however, such as valence, intensity, empathy and compassion exhibited main effect of image emotions.

Results of self-reported emotions confirmed the validity of manipulations check; Selection of stimulus image for both negative and positive was valid.

In relation to locality, the results of self-reported degree of empathy and compassion showed “ambivalent” attitude to identical negative images.

Latency to negative images embedded in main stream media web pages was the slowest ($M=5142$ ms) among four latencies to responds of self-reports: compassion, empathy, valence, intensity. Given the result of latency to respond to memory image, this was counteracted.

Chapter 7: Discussion

This was a study of the interaction between media platform and message content, focusing on the emotional dimensions of compassion and empathy. The aim of the research was examined by difference of the users' sense of identical news messages both on mainstream media and on social media.

Meaning is not static. It is continuously reinterpreted and reconstructed in the fabric of the social context where it resides. And so it with McLuhan's (1964) enigmatic utterance, "medium is the message." There are probably as many versions of just what that the 1960s mantra meant as there are people who tried to understand it. The truth is that McLuhan himself did not grasp the full implications of his own insight.

First, the big problem with McLuhan's insight is that he used the word "message" vaguely. This is not to imply any shortcomings on McLuhan's part, after all we are all prisoners of our own time, and he was, above all, trying to differentiate earlier print-based systems with static photograph images from the age of television and streaming real time video. However, what McLuhan did not understand was how tightly bound content and technology were during the heyday of television.

Hall's (1980) seminal essay described mass media systems such as television and newspapers where message makers (journalists) encoded "meanings" into their messages. But he went on to elaborate how that meaning becomes what he calls "free floating" once it has been fed into the apparatus of media technology. Finally, a passive groups of "readers," or "viewers" either understand the intended meaning,

don't get it at all, or understand the message makers' original and generate what he call a "dispositional reading," or conclusions unintended by the sender. The emergence of the Internet and the active message receiver, and advances in cognitive psychology have made McLuhan's use of the word "message" more problematic . (See Geiger & Newhagen's (1993) study of the emergence of the Internet as a communication medium and the importance of shifting the theoretical emphasis of its study away from the technology to the message receiver.)

The chaos became ever more evident when social media emerged. Interactivity, which has long been entitled as the ontology of the Internet (Rafaeli, 1988; Rafaeli & McCarthy, 2007), has been realized toward its prime by interactive users. Content, either text or audio visual can be migrated across diverse media by users. While contents have been shifting, diverse hosts of contents eventually have been endowed with a collective suffix, "platform." Identical information travels around and/or juxtaposes on diverse platforms which encompasses newspaper, television, the Internet, smart phones, laptops, Facebook, You Tube, Twitter, etc. No clear borderline among platforms has been witnessed. The usage of platform has not been restricted within hardware, neither solely indicated software. As long as news is exposed, regardless of the differences of their unique materiality such as televisions, laptops and mobile phone, all hosts work as news "platforms."

In this regard, immediate communication environments have brought the pressing need of reinterpretation of what it really means that the "medium is the message" now. Given this ontological ambiguity, the study aimed to examine whether there is interaction between platform and contents.

Second, and even more startling, is the transformation of the idea of *meaning*, as some information packages sent out into the ether by people such as journalists, has undergone a revolution of its own. At this point, at least in the vernacular usage, what McLuhan described as a *message* is now being called content, which is mounted on some media platforms. *Meaning* as McLuhan's *message* is now understood as something constructed in the user's mind during the interaction of contents and platform. According to the so-called Information Processing Paradigm (Annie Lang, 2000), this construction process has increasingly shifted away from the idea of meaning construction as a conscious, rational process, to a set of processes, many of which go on below conscious awareness. Further, emotion continues to emerge in its importance of these processes.

Encountering relentless technological evolution of computer mediated communication, media researchers have been continuously challenged to respond to the question, "What's really new about the new technology?" (J. E. Newhagen, 1998, p. 112) What is really "new" compared to old in current communication environment? Should it be "new" related in the context of technological development? Should it be "new" addressed in the context of social praxis which engender and are affected by technological evolutions?

This study has taken on the task of looking at one piece of that puzzle; that is to describe the role of emotion in the construction of meaning in news messages across platform and content. Within the time-tested idea of spatial and temporal proximity as a defining variable for news, this study takes the idea a step further to derive a dimension call locality, which includes emotion. To explicate what is new in

the current communication environment, the study proposed a concept “locality,” which is the psychological proximity to news of users, focusing on two emotions such as empathy and compassion.

For the laboratory experiment, a mainstream media website and Facebook were used as representative traditional media platforms and new media platforms respectively. To compare the effect of valence of contents, both negative and positive image and related texts were employed and embedded into platforms. Self report as well as latency and accuracy of memory were used as measurements which gauge subjects’ emotion such as valence, intensity, compassion and empathy.

Results indicated an interaction between platform and contents. When subjects were asked to recollect the body text which they had seen, the interaction effect between platform and contents was found. Latency to response time to the body text of positive images on Facebook was shorter than that on the mainstream media website. On the contrary, latency to response time for the negative text on the mainstream media website is shorter than that of Facebook. The result addressed the idea that negative news on a negative platform demands less mental effort to be recollected than on a positive platform. Likewise, the text of a positive image on Facebook needs less time to be recollected than that of mainstream media. This result indicates that, when identical news contents are migrating from one platform to another, the interaction between the platform and contents is represented differently. It is found that the media effect is not only determined by platform. Each different valence of news, either negative or positive contents seem to selectively interact with each platform. In sum, it is assumed that either platform or contents do not solely

dominate users' emotional responses. Emotions and memory are affected by the specific combination of platform and contents.

Related to the mutual selectiveness between platform and contents, some results of platform effects should be considered. For a news image, both latency to response time and accuracy of memory was superior on mainstream media than when the contents were exposed on Facebook. For both negative and positive images, mainstream media demands less mental effort to be correctly recollected. On the contrary, the accuracy of memory of the headline text for both and negative stories was higher when they were shown on Facebook than on mainstream media. The result implicates that each platform itself induces different responses from users. In other words, when users view mainstream media as a news platform, it is assumed that they are more concentrated on image than text. On the contrary, when users encounter news on Facebook, it is assumed that, they "read" rather "see" or "scan." The results implicate, although mainstream media, especially traditional news website, has been regarded as "reading" media, the reality of "reading" online news website now might be scanning. On the contrary, Facebook which contains comparatively less information than news website might provide more room for "reading" for its users than news website.

In the vein of interaction between platform and contents, evidence of coactivation was examined. It was worth examining, whether ambiguity occurs when two strong opposite valences are encountered. When strongly positive contents are exposed on strongly negative platforms, vice versa when strongly negative contents are exposed on strongly positive platform, whether users might hesitate to respond

because of coactivation of both opposite valences was questionable. Since the lines between platforms have been increasingly blurred, it has not been unusual to see unexpected contents on unexpected platforms. The ambiguity was measured by latency, since the longer the latency is, the more mental effort was inputted. The results indicated evidence of coactivation. When users view negative images on Facebook, they need more time to recollect the image than recollecting positive images. Likewise, users took more time to recall positive news on mainstream media than to recollect negative news items which were viewed on mainstream media. The results implicate that when users view seemingly incongruent news with the platform, users needed to input more mental effort to remember it. Four hypotheses were proposed to examine the evidence of coactivation. Three of them were confirmed. Firstly, latency of positive news on mainstream media is longer than that of negative news on mainstream media. Secondly, latency of negative news on Facebook is longer than that of positive news on Facebook. Thirdly, the accuracy of the memory of positive news on mainstream media is higher than that of positive news on Facebook.

It was expected that the accuracy of memory of negative news on Facebook is higher than that of negative news on mainstream media. However, it was not confirmed.

The implication of the coactivation between platform and contents is that users' preoccupied expectations for each platform could intentionally or unintentionally filter information which is contradictory to their expectations.

Unexpected contents on specific platform seem to demand more mental effort from users in order to be recollected.

In this study, locality, that is psychological proximity to news was argued as a focal concept which addresses “new” current communication environments.

Traditionally, the proximity of news was assigned by journalists either geographically or temporarily. Users of social media environments, however, do not always locate themselves within geographical and/or temporal limits. Rather, users psychologically select their locations based on their interests and manipulate the distance between themselves and news events. The bottom line of this psychological distance is that one should be secured within a safety zone from a negative situation. In this study, locality was operationalized by the difference between compassion and empathy. To examine the locality, two hypotheses were raised and confirmed. It was indicated that compassion is greater than empathy to identical negative news. On the contrary, empathy was greater than compassion to identical positive news.

In other words, subjects were very compassionate to distant victims with a large amount of compassion, but alienated themselves from victims with small amounts of empathy. As related in the method section, in the pretest for selection of stimuli, participants rated their compassion for victims of natural disasters or poverty in foreign countries such as China, Japan, India, and Haiti more highly than when they viewed the victims of Josephine Tornado on US soil.

Reading news as “being a witness” (Peters, 2001) of news and engaging others. The results addressed that the proximity of news is not solely decided by spatial and temporal dimensions now. Rather, the proximity of news is determined by

users' psychological endeavors which secure one's safety from victims while wanting to help them. The result implicates that the relevance of news to users is more and more oriented to individual disposition than to other determinants of commonality such as citizenship and member of physical neighborhood. It insinuates that a "nationwide paper" or "local paper," a 19-20th century's inventions of journalism, may not hold the same gravity that it did in the old days.

Conclusion

The study argues that McLuhan's maxim, "medium is message" should be interpreted in the context of a hybrid between platform and contents in current society. Technological apparatuses do not solely dominate that what is a "message." Contents do not determine that what is message, either. Rather, in the midst of the interaction between platform and contents, the meaning, which is McLuhan's message is finally implemented in users' cognition. It is evident that the meaning of the message is not "in the message," but in the users who draw the meaning in this hybrid environment between platform and message contents.

Based on the results of the study, a proposed argument eventually challenges some vernacular beliefs. First, whether new media is always conceived as a more superb than old media is questionable. In terms of media, new and old is usually considered on the linear continuum of evolution. It is assumed that new media possess additional merits over existing merits of old media. If it's the case, the replacement of old media with the new should always be processed. The media history, however, does not confirm this. The newspaper has survived against the threat of radio and television. The telephone has been successfully readapted under

omnipotent computer-mediated communications. Given this proposition, it is suggested that the emergence of new media should not be conceived in the linear continuum but in the multi layers of coexistence of the media. The optimum of any certain medium may not be decided by superiority. Rather, it is determined by users who select or respond to medium for meaning making of the message. Simply put, Facebook may not always be considered more superb than traditional news websites.

The above suggestion draws attention to another vernacular belief. That is that new media could always provide solutions for the problems with which old media wrestled. On a practical level, mainstream media news industries have been continuously dazzled with the emergence of new media and have tried to resort to the new media to resolve their chronic sufferings such as decreasing readership. For example, the trend of “Facebookish” or “YouTubenization” of mainstream media websites has been often witnessed as an alternative of current crisis. Results of the study, however, exhibited that users, even young adults who are nourished by social media, expected different news contents on different news platforms while they travel across diverse media. When young users open the mainstream media websites, their expectation does not lie on finding similar content to their familiar news on Facebook. They expect to view different news contents from diverse platforms by their unconscious selection, even if they see identical contents which migrate across any media platform.

It does not mean old habits never die at all. As found in the study, users now seem to transcend the traditional sense of proximity when they read news. Based on ubiquitous computer mediated communication, users psychologically manipulate

their location toward news. Journalistic topography such as local, national and international may not be interpreted same by users. Many credentials of journalism such as social significance and deviance are now overwhelmed by individual disposition of users.

This phenomenon raises fundamental questions such as “What is news?” “Who are news providers?” into not only news industries but also a society. Certainly, it should be one of the most important further points of research beyond the purview of this study. Related to this, the result of one recently released study (Pew Research Center, 2012b) is suggestive. Based on 15 months’ observation of the most popular news videos, categorized into the “news & politics” on YouTube, a substantial role of the citizen as news providers was found. According to this study, more than a third of the most watched videos (39%) were provided by citizens. Even in the videos which bore the logo of news organization, 39% of them were originally posted by users. One thing should not be disregarded in the result that under “news & politics” category, most popular news videos appeared to be so called “hard news.” In terms of traffic, natural disasters and political upheaval were the majority of most frequently viewed videos. The most viewed video was about the Japanese earthquake and tsunami and the Russian presidential election and the political turmoil in Middle East following those.

To conclude, the idea has been criticized that media research often applies old theories to new media phenomena, because of the lag of theory behind new technology (Newhagen, 1998). The pitfall of this lag lies in that researchers often

missed or misunderstood the qualitative difference of “new” phenomena which are accompanying with new media or vice versa misinterpreted qualitatively not different phenomena as different. It has been hardly discerned new from old in new media. At any regards, however, the answer to the question, “What is new?” of new media should be elicited from the theories which are synchronized with “user-level concepts” and finally become evolving “up to societal-level models” (Newhagen, 1998, p.116).

Appendices

Appendix A. Stimuli (images and texts)

Negative 1(Sichuan)



Strong women in post-quake Sichuan

Li Mingcui, 61, once trapped under the rubble for 164 hours before being rescued of the Sichuan earthquake, 2008. There is no proof suggesting women are stronger than men after a disaster. However, recent report of China's health sector implicates that for the past four years, women like Li, have been showing their quiet but perseverant strength after disaster.

(Facebook comment) Why not? Delivery might be harder than some disasters. 😊

Appendix A Stimuli (images and texts)

Negative 2(Poor kid)



Poverty, silent killers of children

Around 21,000 children die every day around the world. The silent killers are poverty. The vast majority occurred in just two regions: South Asia and sub Saharan. However, according to UNICEF, food aid can actually contribute to more hunger and poverty of recipient nation in the long term.

(Facebook comment)While I traveled India, I came up to these kinds of awful scenes hundreds of times. It's just surreal.

Appendix A Stimuli (images and texts)

Negative 3(tsunami lady)



PTSD after Tsunami

After tsunami, Watanabe's life has been turned upside down. She has suffered from Post Traumatic Stress Disorder (PTSD) like other 12,000 patients after tsunami in Japan, 2011. Watanabe was with her old parents in their living room when the waves hit. She held their hands, but the waves tore them apart.

(Facebook comment) If I were she, I could not have lived with the terrible memory. Tears for her. The memory will not be erased.

Appendix A Stimuli (images and texts)

Negative 4(Haiti woman)



Cell Phone as Lifeline

Cell phones are emerging as a lifeline for many survivors of recent disasters. Ellen was rescued from the collapsed Olympic market in Port-au-Prince two days after the Haiti earthquake, 2011. Her text messages from the rubble were captured by first ever Emergency Information Service (EIS) set by AlertNet Foundation in Haiti. *(Facebook comment) That is why I'm always sticking myself to the cell phone.*

Appendix A Stimuli (images and texts)

Positive 1 (black family gathering)



Use Family Gatherings to Mine for Family Health History

Experts advise to use family gathering to learn more about family health history. “Ask to grandparents or great-grandparents if any siblings died during childhood and if so, why? Knowing why can produce very valuable information,” says Jessica George, a biologist at University of Alabama, Birmingham.

(Facebook comment) I saw the other day my neighbor, Jim, 89 held a family barbecue party at his backyard. He is still cutting trees with his sixty something son!

Appendix A Stimuli (images and texts)

Positive 2 Cherry blossom



National Park Service announced Peak Bloom date

The Peak Bloom date of 100th Anniversary of the National Cherry Blossom Festival has been announced. Peak Bloom date is defined as the day in which 70 percent of the blossoms of the Yoshino Cherry trees are open. The average is April 4. The District's latest peak bloom date was April 18, 1958.

(Facebook comment) I've been in DC for 10yrs. Amazing! I don't have any idea of Yoshino Cherry!

Appendix A Stimuli (images and texts)

Positive 3 Oktoberfest



“It’s tapped!” will ring out on September 22

Oktoberfest 2012 announced! At noon time, on September 22, the lord mayor of Munich will have the honor of tapping the first keg of Oktoberfest beer. It pays to arrive early in order to experience the festivities and it’s quite common for visitors to come around 9am to secure good seats.

(Facebook comment) Who the heck will go for beer at 9 a.m. Sunday morning? Mmmkay! Appendix A Stimuli (images and texts)

Positive 4 Tailgate Party



10 Tips for Healthy Men's Tailgate

By eating something prior to the game, you'll be less likely to over eat at the tailgate. A handful of nuts, a whey protein shake or a yogurt should be enough to stop you from getting that second helping of fatty pasta salad. Chicken breast and pork tenderloin are some good choices.

(Facebook comment) eating yogurt before a tailgate? hey, you know what my father says, "be the real man."

Appendix B. Image/Platform Template Combination

M= Main Stream Media News Websites No. 1, 2, 3, 4, 5, 6, 7, 8

F= Facebook No.1,2,3,4,5,6,7,8

N=Negative Images and Stories No. 1,2,3,4

P=Positive Images and Stories No. 1,2,3,4

SUB	N1	N2	N3	N4	P1	P2	P3	P4
1	M1	M2	F8	F7	M3	M4	F6	F5
2	M1	F8	M3	F6	M2	F7	M4	F5
3	M1	F7	F2	M8	M3	F5	F4	M5
4	F2	M8	M1	F8	F4	M6	M3	F5
5	F2	M7	F1	M8	F4	M5	F3	M6
6	F1	F2	M8	M7	F3	F4	M6	M5
7	M8	M1	F7	F6	M2	M3	F5	F4
8	M8	F1	M7	F6	M2	F3	M5	F4
9	M8	F1	F7	M6	M2	F5	F6	M4
10	F8	M1	M7	F6	F2	M3	M5	F4
11	F8	M1	F7	M6	F2	M3	F6	M4
12	F8	F1	M7	M6	F2	F5	M5	M4
13	M7	M8	F6	F5	M1	M2	F4	F3
14	M7	F2	M6	F4	M1	F2	M4	F3
15	M7	F8	F6	M5	M1	F2	F4	M3
16	F7	M8	M6	F5	F1	M2	M4	F3
17	F7	M8	F6	M5	F1	M2	F4	M3
18	F7	F8	M6	M5	F1	F2	M4	M3
19	M6	M7	F5	F4	M8	M1	F3	F2
20	M6	F7	F5	M4	M8	F1	F3	M2
21	M6	F7	M5	F4	M8	F1	M3	F2
22	F6	M7	M5	F4	F8	M1	M3	F2
23	F6	M7	M4	F4	F8	M1	F3	M2
24	F6	F7	M5	M4	F8	F1	M3	M2
25	M1	M2	F8	F7	F3	F4	M6	M5
26	F1	F2	M3	M4	M8	M7	F6	F5
27	M1	F2	M8	F7	F3	M4	F6	M5
28	F1	M2	F8	M7	M3	F4	M6	F5
29	M1	F2	F8	M7	F3	M4	M6	F5
30	F1	M2	M8	F7	M3	F4	F6	M5
31	M8	M1	F7	F6	F2	F3	M5	M4
32	F8	F1	M7	M6	M2	M3	F5	F4
33	M8	F1	M7	F6	F2	M3	F5	M4
34	F8	M1	F7	M6	M2	F3	M5	F4

(CONT)

35	M8	F1	F7	M6	F2	M3	M5	F4
36	F8	M1	M7	F6	F2	M3	M5	F4
37	M7	M8	F6	F5	F1	F2	M4	M3
38	F7	F8	M6	M5	M1	M2	F4	F3
39	M7	F8	M6	F5	F1	M2	F4	M3
40	F7	M8	F6	M5	M1	F2	M4	F3
41	M7	F8	F6	M5	F1	M2	M4	F3
42	F7	M8	M6	F5	M1	F2	F4	M3
43	M6	M7	F5	F4	F8	F1	M3	M2
44	F6	F7	M5	M4	M8	M1	F3	F2
45	M6	F7	F5	M4	F8	M1	F3	M2
46	F6	M	F5	M	M	F1	F3	M
47	M6	F7	M5	F4	F8	M1	M3	F2
48	F6	M7	M5	F4	F8	M8	M3	F2
49	M5	M6	F4	F3	M7	M8	F2	F1
50	M5	F6	F4	M3	M7	F8	F2	M1
51	M5	F6	M4	F3	M7	F8	M2	F1
52	F5	M6	M4	F3	F7	M8	M2	F1
53	F5	M6	F4	M3	F7	M8	F2	M1
54	F5	F6	M	M	F7	F8	M	M
55	M4	M5	F3	F2	M6	M7	F1	F8
56	M4	F5	F3	M2	M6	F7	F1	M8
57	M4	F5	M3	F2	M6	F7	M1	F8
58	F4	M5	M3	F2	F6	M7	M1	F8
59	F4	M5	F3	M2	F6	M7	F1	M8
60	F4	F5	M3	M2	F6	F7	M1	M8
61	M3	M4	F2	F1	M5	M6	F8	F7
62	M3	F4	M2	F1	M5	F6	M8	F7
63	M3	F4	F2	M1	M5	F6	F8	M7
64	F3	M4	M2	F1	F5	M6	M8	F7
65	F3	M4	F2	M1	F5	M6	F8	M7
66	F3	F4	M2	M1	F5	F6	M8	M7
67	M2	M3	F2	F1	M4	M5	F8	F7
68	M2	F4	F2	M8	M4	F6	F8	M6
69	M2	F4	M1	F1	M4	F6	M7	F7
70	F3	M3	M1	F1	F5	M5	M7	F7
71	F3	M3	F2	M8	F5	M5	F8	M6
72	F3	F4	M1	M8	F5	F6	M7	M6
73	M5	M6	F4	F3	F7	F8	M2	M1
74	F5	F6	M4	M3	M7	M8	F2	F1

75	M5	F6	F4	M3	F7	M8	F2	M1
76	F5	M6	F4	M3	M7	F8	F2	M1
77	M5	F6	M4	F3	F7	M8	M2	F1
78	F5	M6	M4	F3	M7	F8	M2	F1
79	M4	M5	F3	F2	F6	F7	M1	M8
80	F4	F5	M3	M2	M6	M7	F1	F8
81	M4	F5	F3	M2	F6	M7	F1	M8
82	F4	M5	F3	M2	M6	F7	F1	M8
83	M4	F5	M3	F2	F6	M7	M1	F8
84	F4	M5	M3	F2	M6	F7	M1	F8
85	M3	M4	F2	F1	M8	F5	F6	M7
86	F3	F4	M2	M1	M5	M6	F8	F7
87	M3	F4	M2	F1	F5	M6	F8	M7
88	F3	M4	F2	M1	M5	F6	M8	F7
89	M3	F4	F2	M1	F5	M6	M8	F7
90	F3	M4	M2	F1	M5	F6	F8	M7

Appendix C. Sample Stimuli Webpages

- Justin Hudson**
- FAVORITES**
- News Feed
 - Messages
 - Events
- GROUPS**
- Association of Rice Univers...
 - Merrill Graduate Student As...
 - MONTGOMERY/WARE..... L...
 - Create Group...
- APPS**
- Apps and Games
 - Photos
- LISTS**
- Close Friends
 - Subscriptions
 - Family
 - Beacher Report
 - Cal Athletic Department
 - L.A. Poole
 - Rice Athletic Department
 - The Rice Thresher
 - Rice University
 - University of Maryla...
 - College Park Area
- Profile Pictures:**
- Lisa Shroyer
 - Jessica Gail Hyr...
 - Jim Baxter
 - Gashir El-Khoubry
 - Dalia Colon
 - Barbara Dougl...

Report/Block

Update Status Add Photo / Video Ask Question

Jennifer H Hemphill shared a link.



Strong women in post-quake Sichuan
washingtonpost.com

Li Mingcai, 61, once trapped under the rubble for 164 hours before being rescued of the Sichuan earthquake, 2008. There is no proof suggesting women are stronger than men after a disaster. However, recent report of China's health sector implicates that for the past four years, women like Li, have been showing their quiet but perseverant strength after disaster.

Like · Comment · Share · Friday at 9:57am · 20 people like this.

2 shares

Robyn Kurtz Why not? Delivery might be harder than some disasters. 42 minutes ago · Like

Write a comment...

Jennifer H Hemphill shared a link.

Are you affected by the tornadoes? If you're able to do so from a SAFE location, would love to see your photos. Send them to fsperson@nrb.com, or post th here on Facebook.



Tornadoes slice paths across Alabama, Tennessee, Kentucky
www.nrb.com

Multiple tornadoes tore paths across Alabama, Kentucky, Tennessee and Indiana on Friday, leaving an undetermined number of people injured, and homes and businesses destroyed, emergency officials and forecasters said.

Like · Comment · Share · 26 · 11 · 41 · 4 minutes ago · 1

Jennifer H Hemphill shared a link.

Tamia - Can't Get Enough (LIVE)
www.youtube.com

Live on MTV TamiaWorld.com

Like · Comment · Share · 2 minutes ago · 1

Jennifer H Hemphill refreshed my at home workout and is feeling great!!

Like · Comment · 3 minutes ago · 1

Cal Bears

Craving some Cal sports to watch? You're in luck...head out to Helman Tennis Complex as No. 7 Cal Women's Tennis hosts No. 11 Stanford today at 1:30pm. Go Bears!



Golden Bears Set to Host Stanford and Pepperdine
www.calbears.com

Like · Comment · Share · 10 · 12 minutes ago · 1

Caillie Lalczari Yes!



Susan Cain: The power of introverts | Video on TED.com
www.ted.com

TED Talks in a culture where being social and outgoing are prized above all else, it can be difficult, even shameful, to be an introvert. But, as Susan Cain argues in this passionate talk, introverts bring extraordinary talents and abilities to the world, and should be encouraged and celebrated.

Like · Comment · Share · 14 minutes ago · 1

Brittany Baire Craig likes this.

Write a comment...

Elan Rodman also shared a link.



Saints' defense kept 'bounty' fund, NFL says
espn.go.com

between 22 and 27 defensive players on the Saints, as well as at least one assistant coach, maintained a bounty program funded primarily by players in violation of NFL rules during the 2009, 2010 and 2011 seasons, the league announced Friday.

Elan Rodman
http://espn.go.com/nfl/story/_id/7638603/new-orleans-saints-defense-had-bounty-program-nfl-says-1-man

Like · Comment · 1 · 21 minutes ago · 1

Justin Hudson You stay classy, New Orleans

Like · Comment · 1 · 1 · 35 minutes ago near College Park

Jordan Michael Helboorne-Davis > **Justin Maxwell**

Tim Drayna, Justin Maxwell, and Sean McDeath, after we get the team back together we can do ridiculous things like this....



Things to do in Halo Reach - Bum Bait
rooster-teach.com

Kevin and Geoff show you the latest craze in Halo Reach. It's called Bum Bait.

Like · Comment · Share · See Friendship · 23 minutes ago · 1

Duffy Elmer likes this.

Write a comment...

Texts From Last Night
(775) He brought a girl home so fat he called me before they got home to unlock the right side of the french doors (1-775): Fuck he won the bet

Like · Comment · Share · 1,428 · 88 · 77 · 21 minutes ago · 1

Krist Wongphasawat Chang Hu, Cody Dunne, Suri Tarikan, Charley Lawittes - Now I know where our campus got the idea from.



How Tiny Trash Bins Create Big Change - Harvard Business Online's Leading Green

Steven Zucker and 2 others Create Event

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Netanyahu: Israel must be 'master of its fate'



Scott Wilson 12:27 PM ET
Obama says U.S., Israel agree that diplomacy is best way to resolve crisis over potential Iranian nuclear weapons. Obama is trying to avert an Israeli strike that could come this spring, and which the U.S. sees as premature.

- 700+ comments: 'How many cheeks does Obama have to turn?'
- OPINION | Rubin: AIPAC's chief says Obama is wrong

SUPER TUESDAY

Romney focuses on economy while rivals jockey for opportunities in Ohio



Philip Rucker and Felicia Sonmez
1:38 PM ET
Former Mass. governor tries to rally reluctant Republicans.

- Romney: 'President has failed to focus'
- The Fix: Why Santorum should worry about Ohio
- Polls: Brown pulling ahead of Warren in Mass.

Super Tuesday explained: Which states are the most important and why



THE FIX | There are 437 delegates up for grabs, more than the total awarded so far. The Post's Chris Cillizza dissects the landscape.

- Romney is the favorite in Super Tuesday polls
- The Fix: Santorum's delegate math doesn't add up

How is the Roberts Court unusual?



Robert Barnes
The group of nine is an "outlier" in several ways from the 105 versions before it, says one professor.

- Infographic: Fewer years in private practice

Observers: Russian election 'unfair'



Will Englund 2:50 PM ET
International monitors focus criticisms on context of election, rather than conduct of voting itself.

- Putin reclaims office as opposition grows
- Webcam captures apparent ballot stuffing

Limbaugh says apology to student was sincere, jokes about fleeing sponsors



Associated Press 2:42 PM ET
Radio host tells listeners: 'I should not have used the language I did, and it was wrong.'

- What Limbaugh could learn from Don Imus
- On Leadership: Where his apology went wrong
- OPINION | Petri: A non-apology, not accepted

Egyptian lawmaker quits over nose job



Leila Fadel 2:29 PM ET
Member of ultraconservative Islamic party initially attributed his bandaged face to a beating by gunmen.

NFL should come down hard in punishment for bounty program



Tracee Hamilton
COLUMN | Case involving former Redskins coach will test league's commitment to player safety.

- League considering harsh penalties

Opinions

Why won't Mitt let me like him?



Marc A. Thiessen
To win over the GOP base, Romney must stop insulting conservatives — and show he can win.

- Petri: Limbaugh's non-apology, not accepted
- Sargent: Limbaugh apology won't quiet firestorm
- Dionne: GOP losing the primary issue
- Diehl: The end of Putinism
- Joel Klein: Candidates are flunking education
- Samuelson: Defense under the gun

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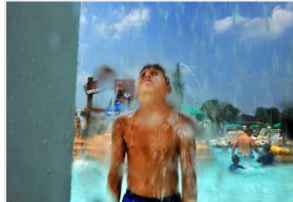


National Park Service announced Peak Bloom date

Dana Mibank
The Peak Bloom date of 100th Anniversary of the National Cherry Blossom Festival has been announced. Peak Bloom date is defined as the day in which 70 percent of the blossoms of the Yoshino Cherry trees are open. The average is April 4. The District's latest peak bloom date was April 18, 1958.

LOCAL NEWS

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What Washington's warm winter means for summer temperatures

Ian Livingston
After two sweltering summers, D.C. could handle a break from the heat waves. And we might just get it.

- Relive summer fun in photos

District has a record-setting year for parking tickets, on pace to do it again

Ashley Halsey III
Drivers paid \$92.6 million in fines last year, making D.C. the envy of cities nationwide, AAA expert says.

Killing suspect no stranger to city hall



Mike DeBonis 1:03 PM ET
Accused in Southeast stabbing, Elsworth Colbert had once been barred from council headquarters.

- 56-year-old charged with second-degree murder

Embroided in a wild Ariz. murder case



Tom Jackman
Prosecutors want to question McLean's James DeMocker about financial dealings in brother's trial.

100-pound dogs need not apply



Coleen O'Leary
Our apartment hunter chronicles the struggle to find an apartment that will accept her bulldog.

Uh oh, Radiohead is coming to D.C.



David Malitz
Past shows have coincided with minor disasters. Dare to see them in June? Buy your tickets Saturday.

- Going Out Guide: March's best concerts

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China at a 'turning point'

Vice-premier Li Keqiang promises stable growth during his meeting with World Bank President Robert Zoellick in Beijing. The bank said in a report that annual GDP growth for China will gradually decline to 5 percent by 2030.

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Appendix D. Consent Form

Project Title	“The Emotion Social Media Bring to News: The Emergence of Empathy and Compassion for Elements of News Messages in the Context of New Media Platforms.”
Purpose of the Study	This research is being conducted by Associate Professor John Newhagen at the University of Maryland, College Park. We are inviting you to participate in this research project because you use diverse computer based communication applications as news source in everyday life. The purpose of this research project is examining users’ reaction to news on diverse media platforms.
Procedures	<ul style="list-style-type: none"> • The procedures involve In Lab experiment. • The experiment will be held at New Media research Lab (2101 Knight Hall, University of Maryland, College Park) • It should not take more than 35 minutes. The questions you will read ask you about your emotional responses to news on diverse computer based media. • You will view the websites and be asked by questions. You will input the answers into a desktop computer. • You are always free to terminate your participation and the experiment at any time. • If you complete the experiment, you will be given extra credits. The score of extra credits will be decided and distributed by your instructor who agrees to accommodate this experiment as part of the assignments • If you do not want to take the experiment, you will be given a short research assignment as a substitution.
Potential Risks and Discomforts	There are no known risks associated with participating in this research project.
Potential Benefits	There are no direct benefits to participants. However, possible benefits include that the results may help the investigator learn more about users’ perception of news on diverse media platforms. We hope that, in the future, other people might benefit from this study through improved understanding of users’ perception on news on diverse media platforms.
Confidentiality	<ul style="list-style-type: none"> • Any potential loss of confidentiality will be minimized by storing data in the computer in the Media Research Lab with the password protection. Only the principal investigator and the student investigator will share the password. • Hard copy of the data will be stored in the locked file

	<p>cabinets in the Media Research Lab (Rm. 2102 Knight Hall, Philip Merrill Journalism School). Data will be destroyed after two years for the confidentiality of participants including you.</p> <ul style="list-style-type: none"> • If we write a report or article about this research project, your identity will be protected to the maximum extent possible. Your information may be shared with representatives of the University of Maryland, College Park or governmental authorities if you or someone else is in danger or if we are required to do so by law.
Right to Withdraw and Questions	<p>Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify.</p> <p>If you are an employee or student, your employment status or academic standing at UMD will not be affected by your participation or non-participation in this study.</p> <p>If you decide to stop taking part in the study, if you have questions, concerns, or complaints, or if you need to report an injury related to the research, please contact the investigator:</p> <p style="text-align: center;">Associate Professor Dr. John Newhagen 1100 Knight Hall University of Maryland College Park, MD 20742 E-mail: newhagen@umd.edu Telephone : 301- 405-2417</p>
Participant Rights	<p>If you have questions about your rights as a research participant or wish to report a research-related injury, please contact:</p> <p style="text-align: center;">University of Maryland College Park Institutional Review Board Office 1204 Marie Mount Hall College Park, Maryland, 20742 E-mail: irb@umd.edu Telephone: 301-405-0678</p> <p>This research has been reviewed according to the University of Maryland, College Park IRB procedures for research involving human subjects.</p>
Statement of Consent	<p>Your signature indicates that you are at least 18 years of age; you have read this consent form or have had it read to you; your questions have been answered to your satisfaction and you</p>

	<p>voluntarily agree to participate in this research study. You will receive a copy of this signed consent form.</p> <p>If you agree to participate, please sign your name below.</p>	
Signature and Date	NAME OF SUBJECT [Please Print]	
	SIGNATURE OF SUBJECT	
	DATE	

Appendix E. Memory for image recognition questions for part II

Instructions

In part II, you will be asked about your memory of images which you saw in the previous session.

You will use only button box.

You will now see several images.

Some of them were shown during previous session.

Others were not seen.

Hit “YES” as fast as you can, if you recognize the image.

Hit “NO” as fast as you can, if you did not see the image.

Here is a practice.



Appendix F. Self-Report & Memory Questions for Part III

Felt Emotion

How negative or positive does this image make you feel?

1. Very positive
2. Somewhat positive
3. Neutral
4. Somewhat negative
5. Very negative

How intense or calm does this image make you feel?

1. Very calm
2. Somewhat calm
3. Neutral
4. Somewhat intense
5. Very intense

**Empathy means how much I feel the people in the image are like me.
How do you rate this image for its empathy?**

1. Not at all
2. Very little
3. Neutral
4. Somewhat
5. Extremely

**Compassion means how much I share the suffering with the person in the image.
How do you rate this image for its compassion?**

1. Not at all
2. Very little
3. Neutral
4. Somewhat
5. Extremely

Memory for Text

Neg1-1. Where did this incident take place?(tx1)

1. Sendai
2. Hunan
3. *Sichuan*

4. Taipei
5. Osaka

Neg1-2. According to the story, how long was this women trapped under the rubbles before being rescued?

1. Hours
2. A day
3. Two Days
- 4. A week**
5. 15 days

N2-1. According to the story, where did this incident mainly take place?

- 1. South Asia**
2. North America
3. South Africa
4. Latin America
5. Oceania

N2-2. What is this story about?

1. Abandoning Kids
- 2. Poverty**
3. Child labor
4. The effect of war
5. Pandemic disease

N3-1 .What is her problem?

1. Homelessness
- 2. PTSD**
3. Joblessness
4. Fatigue
5. Breakup

N3-2 .Which family member did she lose by Japanese tsunami?

1. Husband
2. Son
- 3. Parents**
4. Sister
5. Grand parents

N4-1. Where did this incident take place?

1. Chile
2. China
- 3. Haiti**
4. Japan
5. Turkey

N4-2. According to the story, how was the woman discovered?

1. She kept crying out
2. She knocked the rubbles
3. Her husband found her
- 4. *She sent out text messages***
5. The rescue team accidentally found her, while digging.

P1-1. What was the topic of the story?

1. Barbecue Party
2. Family ties
3. The status of African American
- 4. *Family health history***
5. Parenting

P1-2. Which of the following did the story say as the good source of health information?

1. Internet
2. Spouse
3. Family picture albums
- 4. *Grand parents***
5. Family physician

P 2-1. According to the story, what is the AVERAGE of Peak Bloom date of Cheery Blossom Festival?

1. Mar.1
2. Mar.10
3. Mar.22
- 4. *Apr.4***
5. Apr.18

P 2-2. Which of the following institution announces the Peak Bloom Date?

- 1. *National Park Service***
2. Smithsonian institution
3. National Weather Service
4. National horticultural society
5. NOAA

P 3-1. What was the story about?

1. Midlife crisis
2. Alcohol Abuse
- 3. *Octoberfest***
4. Community Meeting
5. Aging

P 3-2. Where is this place in?

1. London
2. Dublin
3. Prague
- 4. *Munich***
5. Prague

P4-1.What is the story about?

1. *Tailgate*

2. Veteran reunion
3. Family reunion
4. Same sex marriage
5. Cholesterol

P4-2.According to the story, what was recommended to eat prior to tailgate party for health?

1. Vitamin
2. Tomatoes
3. Potatoes
- 4. *Yogurt***
5. Lettuce

Appendix G. Demographic questions

Please type your major into the blank.

How many years have you attended at the university?

1. A year
2. 2 years
3. 3 years
4. 4 years
5. More than 4 years

What is your main source for news?

1. MSM (Washington Post.com, CNN.com,etc.)
2. Search engine (Google, MSN, etc.)
3. Social media (Facebook, Twitter, etc.)
4. Others (specify)

The last few years, I have used Main Stream Media news websites such as Washington Post.com or CNN.com as a source for useful news to me;

1. A lot more
2. Somewhat more
3. About the same
4. Somewhat less
5. A lot less

The last few years, I have used Facebook as a source for news useful to me;

1. A lot more
2. Somewhat more
3. About the same
4. Somewhat less
5. A lot less

My gender is

1. Female
2. Male

My race or ethnicity is

- 1.White
- 2.African American
- 3.Hispanic
- 4.Asian
- 5.Two or more races

Appendix H. Exploratory Study Survey Questions

QUESTIONS

We would like to ask you some questions about different ways you can get the news on a computer.

Remember there is no right or wrong answer. Just tell us what you feel.

2. Facebook

For the next several questions, think about Facebook.

2-1) When do you think about Facebook, how do you feel?

- 1-Extremely negative
- 2-Very negative
- 3-Somewhat negative
- 4-Not negative
- 5- Not negative at all

2-2) How much control do you feel over the content of Facebook?

- 1-Control completely by myself
- 2-Very controllable
- 3-Neither one way nor another
- 4-Not controllable
- 5-Not controllable at all

2-3) When do you read the news on Facebook, do you feel physically close or far away from the information?

- 1- Extremely close
- 2- Very close
- 3- Neither close nor far
- 4- Far
- 5- Extremely far

2-4) Is Facebook interactive?

- 1-Extremely interactive
- 2-Very interactive
- 3- Neither one way nor another
- 4- Not interactive
- 5- Not interactive at all

2-5) Does news from Facebook make you anxious?

- 1-Very anxious
- 2-Somewhat anxious
- 3-Neither one way nor another
- 4-Not anxious
- 5- Not anxious at all

2-6) How much can others who use Facebook know about you?

- 1- Can know about exactly same me with offline
- 2- Very much can know about me
- 3-Neither one way nor another
- 4-Cannot know about me
- 5- Cannot know about me at all

2-7) Does the experience of using Facebook intimate or detached?

- 1-Extremely intimate
- 2-Very intimate
- 3-Neither one way nor another
- 4-Not intimate
- 5-Detached

2-8) What do you think the chances will Facebook to respond?

- 1-Respond at any circumstances
- 2-Very responsive
- 3-Neither one way nor another
- 4-Not responsive
- 5-Not responsive at all

2-9) When do you think about Facebook, how do you feel about?

- 1-Extremly positive
- 2-Very positive
- 3-Somewhat positive
- 4-Not Positive
- 5-Not positive at all

2-10) When do you read the news on Facebook, do you feel like:

- 1- Just happened
- 2-Happened fairly recently
- 3-Somewhat recent
- 4-Not recent
- 5-Happened long time

Bibliography

- Abbott, H. P. (2002). *The Cambridge introduction to narrative*. Cambridge, UK: Cambridge University Press.
- Allport, A. (1998). Visual Attention. In M. I. Posner (Ed.), *Foundations of Cognitive Science* (pp. 631-682). Cambridge, MA: The MIT Press.
- The American Heritage College Dictionary. (2002) (4 ed.). Boston: Houghton Mifflin.
- Anderson, B. (2006). *Imagined communities* (3rd ed.). London, UK: Verso.
- Appadurai, A. (1995). The production of locality. In R. Fardon (Ed.), *Counterworks: managing the diversity of knoweledge*. (pp. 204-225). London: Routledge.
- Appadurai, A. (1996). *Modernity at Large*. Minneapolis,London: University of Minnesota Press.
- Bandura, A. (2001). Social Cognitive Theory of Mass Communication. [Article]. *Media Psychology*, 3, 265-299.
- Bar-Anan, Y., Liberman, N., & Trope, Y. (2006). The association between psychological distance and construal level: Evidence from an implicit association test. *Journal of Experimental Psychology: General*, 135(4), 609-622. doi: 10.1037/0096-3445.135.4.609
- Barrett, L. F. (2012). Emotions Are Real. *Emotion*, 12(3), 413-429.
- Bassili, J. N. (2000). Reflections on response latency measurement in telephone surveys. *Political Psychology*, 21(1), 1-5.
- Batson, C. D. (1990). How social an animal? The human capacity for caring. *American Psychologist*, 45(3), 336-346. doi: 10.1037/0003-066x.45.3.336
- Beer, D., & Burrows, R. (2007). Sociology and , of and in Web 2.0:some initial considertaion. *Sociological Research Online*, 12(5).
- Beniger, J. R. (1986). *The control revolution: technological and economic origins of the information society*. Cambridge,MA: Havard University Press.
- Berelson, B. (1952). *Content analysis in communication research*. Glenco, IL: The Free Press.
- Bolter, J. D. (1974). *Turing's man: Western culture in the computer age*. Chapel Hill, NC: University of North Carolina Press.
- Bower, G. H., & Clapper, J. P. (1998). Experimental Methods in Cognitive Science. In M. I. POsner (Ed.), *Foundations of Cognitive Science*. Cambridge, MA: The MIT Press.
- Boyd, D. M., & Ellison, N. B. (2007). Social network sites: definition, history, and scholarship. *Journal of Computer Mediated Communication*, 13(1), 210-230.
- Bradley, M., & Lang, P. (1994). Measuring emotion: The Self-Assessment Manikin and the semantic differential. *Journal of Behavior Therapy and Experimental Psychiatry*, 25, 49-59.
- Buck, R., & Powers, S. R. (2011). Emotion, media, and the global village. In K. Dovelng, C. V. Scheve & E. A. Konijn (Eds.), *The Routledge Hanbook of emotions and mass media* (pp. 181-194). New York, NY: Routledge.
- Cacioppo, J., Berntson, G., Larsen, J., Poehlmann, K., & Ito, T. (Eds.). (2000). *The psychophysiology of emotion* (2 ed.). New York: Guilford Press.

- Cacioppo, J. T., & Bernston, G. G. (1994). Relationship between attitudes and evaluative space: a critical review, with emphasis on the separability of positive and negative substrates. *Psychological Bulletin*, *115*(3), 401-423.
- Cacioppo, J. T., & G. Bernston, G. (1999). The Affect System: Architecture and Operating Characteristics. *Current Directions in Psychological Science* *8*(5), 133-137.
- Cacioppo, J. T., Klein, D. J., Berntson, G. G., & Hatfield, E. (1993). The psychophysiology of emotion. In M. L. J. M. Haviland (Ed.), *Handbook of emotions* (pp. 119-142). New York, NY, US: Guilford Press.
- Cardoso, G. (2006). *The Media in the Network Society: Browsing, News, Filters, and Citizenship*. Lisboa, Portugal: CIES.
- Chaffee, S. (1991). *Explication*. Newbury Park, CA: Sage Publications.
- Chaffee, S. H., & Metzger, M. J. (2001). The End of Mass Communication? *Mass Communication and Society*, *4*(4), 365-379. doi: 10.1207/s15327825mcs0404_3
- Chaudhuri, A., & Buck, R. (1997). Communication, cognition and involvement: a theoretical framework for advertising. *Journal of Marketing Communications?*, *3*(2), 111-125.
- Christofides, E., Muise, A., & Desmarais, S. (2012). Risky Disclosures on Facebook: The Effect of Having a Bad Experience on Online Behavior. *Journal of Adolescent Research*. doi: 10.1177/0743558411432635
- Cormode, G., & Krishnamurthy, B. (2008). Key differences between Web 1.0 and Web 2.0. [Feature]. *First Monday*, *13*.
- Davis, J. I., J. Gross, J., & Ochsner, K. N. (2011). Psychological Distance and Emotional Experience: What You See is What You Get. *Emotion*, *11*(2), 438-444.
- Desmet, P. (2005). Measuring Emotion: Development and Application of an Instrument to Measure Emotional Responses to Products Funology. In M. Blythe, K. Overbeeke, A. Monk & P. Wright (Eds.), (Vol. 3, pp. 111-123): Springer Netherlands.
- Direct RT. (2008). [Computer software]. New York, NY:Empirisoft.
- Eisenberg, N., & Fabes, R. A. (1990). Empathy: Conceptualization, measurement, and relation to prosocial behavior. *Motivation and Emotion*, *14*(2), 131-149. doi: 10.1007/bf00991640
- Eisenberg, N., Fabes, R. A., Bustamante, D., Mathy, R. M., Miller, P. A., & Lindholm, E. (1988). Differentiation of vicariously induced emotional reactions in children. *Developmental Psychology*, *24*(2), 237-246. doi: 10.1037/0012-1649.24.2.237
- Eisenberg, N., Fabes, R. A., Murphy, B., Karbon, M., Maszk, P., Smith, M., et al. (1994). The relations of emotionality and regulation to dispositional and situational empathy-related responding. *Journal of Personality and Social Psychology*, *66*(4), 776-797. doi: 10.1037/0022-3514.66.4.776
- Fazio, R. H., Williams, C. J., & Powell, M. C. (2000). Measuring associative strength: Category-item associations and their activation from memory. *Political Psychology*, *21*(1), 7-25.

- Feinstein, J. L. (2000). Comparing response latency and self-report methods for estimating levels of certainty in knowledge elicitation for rule-based expert systems. *Expert System, 17*(5), 217-225.
- Field, A. (2011). *Discovering Statistics Using SPSS* (3 ed.). London: Sage.
- Frijda, N. H. (1988). The laws of emotion. *American Psychologist, 43*(5), 349-358.
- Fujita, K., Eyal, T., Chaiken, S., Trope, Y., & Liberman, N. (2008). Influencing attitudes toward near and distant objects. *Journal of Experimental Social Psychology, 44*, 562-572.
- Geiger, S., & Newhagen, J. E. (1993). Revealing the black box: An information processing approach to understanding media effects. *Journal of Communication, 43*(4), 42-50.
- Geiger, S., & Reeves, B. (1993). We interrupt this program ... Attention for television sequences. *Human Communication Research, 19*, 368-387.
- Goetz, J. L., Keltner, D., & Simon-Thomas, E. (2010). Compassion: An evolutionary analysis and empirical review. *Psychological Bulletin, 136*(3), 351-374. doi: 10.1037/a0018807
- Goffman, E. (1959). *The presentation of self in everyday life*. New York, NY: Anchor Books.
- Grabe, M. E., Lang, A., & Zhao, X. (2003). News Content and Form. *Communication Research, 30*(4), 387-413. doi: 10.1177/0093650203253368
- Grabe, M. E., Zhou, S., & Barnett, B. (2001). Explicating Sensationalism in Television News: Content and the Bells and Whistles of Form. [Article]. *Journal of Broadcasting & Electronic Media, 45*(4), 635.
- Grabe, M. E., Zhou, S., Lang, A., & Bolls, P. D. (2000). Packaging Television News: The Effects of Tabloid on Information Processing and Evaluative Responses. *Journal of Broadcasting & Electronic Media, 44*(4), 581-598. doi: 10.1207/s15506878jobem4404_4
- Green, N. (2006). On the move: technology, mobility, and the mediation of social time and space. In R. Hassen & J. Thomas (Eds.), *The New Media Theory Reader* (pp. 249-265): Open University Press.
- Greene, J., Choudhry, N., Kilabuk, E., & Shrank, W. (2011). Online Social Networking by Patients with Diabetes: A Qualitative Evaluation of Communication with Facebook. *Journal of General Internal Medicine, 26*(3), 287-292. doi: 10.1007/s11606-010-1526-3
- Gunter, B. (1984). Memory for the news as a function of the channel of communication *Human Learning, 3*, 265-271.
- Ha, L., & James, E. L. (1998). Interactivity reexamined: A baseline analysis of early business web sites. *Journal of Broadcasting & Electronic Media, 42*(4), 457-474. doi: 10.1080/08838159809364462
- Hackett, R. A. (1984). Decline of a paradigm? Bias and objectivity in news media studies. *Critical Studies in Mass Communication, 1*(3), 229-259. doi: 10.1080/15295038409360036
- Hall, E. T. (1966). *The hidden dimension*. Garden City, NY: Doubleday.
- Hall, S. (1980). Encoding/decoding *Culture, media, language: Working papers in cultural studies, 1972-79* (pp. 128-138). London: Hutchinson.

- Han, S. (2010). Theorizing new media: Reflexivity, knowledge, and the web 2.0. *Sociological Inquiry*, 80(2), 200-213. doi: 10.1111/j.1475-682X.2010.00327.x
- Hansen, D. L., Schneiderman, B., & Smith, M. A. (2011). *Analyzing social media networks with NodeXL*. Burlington, MA: Morgan Kaufman.
- Hovland, C., & Weiss, W. (1951). The influence of source credibility on communication effectiveness. *Public Opinion Quarterly*, 15, 635-650.
- James, W. (1961). *Psychology : the briefer course*. New York.
- Jenkins, M. (2006). *Convergence Culture : Where Old and New mMedia Collide*. New York: New York University Press.
- Joinson, A. N. (2008). *Looking at, looking up or keeping up with people?: motives and use of facebook*. Paper presented at the Proceedings of the twenty-sixth annual SIGCHI conference on Human factors in computing systems, Florence, Italy.
- Kaplan, A. M., & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of Social Media. *Business Horizons*, 53, 59-68.
- Kiousis, S. (2002). Interactivity: a concept explication. *New Media Society*, 4(3), 355-383.
- Krippendorff, K. (2004). *Content Analysis: An Introduction to its methodology* (2 ed.). Beverly Hills, CA: Sage.
- Kuhn, T. (1970). *The structure of scientific revolutions*. Chicago, IL: The University of Chicago Press.
- Kwak, H., Lee, C., Park, H., & Moon, S. (2010). *What is Twitter, a social network or a news media?* Paper presented at the Proceedings of the 19th international conference on World wide web, Raleigh, North Carolina, USA.
- Lang, A. (1994). *Measuring psychological responses to media messages*. Hillsdale, NJ: Lawrence Erlbaum.
- Lang, A. (2000). The limited capacity model of mediated message processing. *Journal of Communication*, 50(1), 46-70.
- Lang, A., Dhillon, K., & Dong, Q. (1995). The effects of emotional arousal and valence on television viewers' cognitive capacity and memory. *Journal of Broadcasting & Electronic Media*, 39, 313-327.
- Lang, A., & Newhagen, J. (1996). Negative Video as Structure: Emotion, Attention, Capacity and Memory. *Journal of Broadcasting & Electronic Media*, 40(4).
- Lang, A., Zhou, S., Schwartz, N., Bolls, P. D., & Potter, R. F. (2000). The effects of edits on arousal, attention, and memory for television messages: when an edit is an edit can an edit be too much? *Journal of Broadcasting and Electronic Media*, 44(1), 94-109.
- Lang, P. J. (1988). What are the data of emotion? *Cognitive perspectives on emotion and motivation* (pp. 173-191). New York, NY, US: Kluwer Academic/Plenum Publishers.
- Lazarus, R. S. (1991). *Emotion and Adaptation*. New York: Oxford University Press.
- Lenhart, A. (2009). *Teens and Social Media: an Overview Pew Internet & American Life Project*. Washington, D.C.: Pew/Internet.
- Levine, L. J., & Burgess, S. L. (1997). Beyond general arousal: Effects of specific emotions on memory. *Social Cognition*, 15, 157-181.

- Liberman, N., & Trope, Y. (2008). The Psychology of Transcending the Here and Now. *Science*, 322(21), 1201-1205.
- Livingstone, S. (1999). New media, new audiences? *New media and society*, 1(1), 59-66.
- Massey, B. L., & Levy, M. R. (1999). Interactivity, Online Journalism, and English-Language Web Newspapers in Asia. *Journalism & Mass Communication Quarterly*, 76(1), 138-151. doi: 10.1177/107769909907600110
- McKoon, G. (1977). Organization of information in text memory. *Journal of Verbal Learning and Verbal Behavior*, 16(2), 247-260. doi: 10.1016/s0022-5371(77)80050-9
- McLuhan, M. (1994). *Understanding media: the extensions of man* (First MIT Press edition ed.). Cambridge, MA: The MIT Press.
- McMillan, S. J. (2000). The Microscope and the Moving Target: The Challenge of Applying Content Analysis to the World Wide Web. *Journalism & Mass Communication Quarterly*, 77(1), 80-98. doi: 10.1177/107769900007700107
- McMillan, S. J., & Hwang, J.-S. (2002). Measures of Perceived Interactivity: An Exploration of the Role of Direction of Communication, User Control, and Time in Shaping Perceptions of Interactivity *Journal of Advertising* 31(3), 29-42.
- McQuail, D. (2005). *McQuail's Mass Communication Theory* (5 ed.). London: SAGE.
- Mead, G. H. (1934). *Mind, Self, & Society* (paperback ed.). Chicago: The University of Chicago Press.
- Media Lab. (2010). [Computer software]. New York, NY: Empirisoft.
- Mertler, C. A., & Vannatta, R. A. (2010). *Advanced and Multivariate Statistical Methods* (4 ed.). Glendale, CA: Pyrczak Publishing.
- Meyrowitz, J. (1985). *No sense of Place: the impact of electronic media on social behavior*. New York, Oxford: Oxford University Press.
- Millard, D. E., & Ross, M. (2006). *Web 2.0: hypertext by any other name?* Paper presented at the Hypertext and Hypermedia, Odense, Denmark.
- Newell, A. (1990). *Unified Theories of Cognition*. Cambridge, MA: Harvard University Press.
- Newhagen, J. (2011). Beyond Self Report: Using Latency to Respond to Model the Question Answering Process on Web-based Public Opinion Surveys In E. Bucy (Ed.), *The Political Communication Methods Sourcebook* (pp. 505-524): Lawrence Erlbaum Associates.
- Newhagen, J. E. (1998). Hitting the Agenda Reset Button: Matching Internet Research with Development. *Convergence*, 4(4), 112-119.
- Newhagen, J. E. (2010). *The role of emotion in building an image of Chinese soft power: an information processing view*. Paper presented at the The Fourth World Forum on China Studies, Shanghai, China.
- Newhagen, J. E., & Bucy, E. P. (2004). Routes to Media Access. In E. P. Bucy & J. E. Newhagen (Eds.), *Media access: social and psychological dimensions of new technology use* (pp. 3-26). Mahwah, NJ: Lawrence Erlbaum.
- Newhagen, J. E., Cordes, J. W., & Levy, M. R. (1995). Nightly@nbc.com: Audience scope and the perception of interactivity in viewer mail on the Internet. *Journal of Communication*, 45(3), 164.

- Newhagen, J. E., & Reeves, B. (1992). This evening's bad news: effects of compelling negative television news images on memory. *Journal of Communication*, 42(2), 25-41.
- Nussbaum, M. (1996). The basic social moction. *Social Philosophy and Policy*, 13, 27-58.
- O'Reilly, T. (2005). What is Web 2.0: design patterns and business models for the next generation of software. Retrieved from
- Örnebring, H., & Jönsson, A. M. (2004). Tabloid journalism and the public sphere: a historical perspective on tabloid journalism. *Journalism Studies*, 5(3), 283-295. doi: 10.1080/1461670042000246052
- Paunonen, S. V., & LeBel, E. P. (2012). Socially desirable responding and its elusive effects on the validity of personality assessments. *Journal of Personality and Social Psychology*, 103(1), 158-175. doi: 10.1037/a0028165
- Pempek, T. A., Yermolayeva, Y. A., & Calvert, S. L. (2009). College students' social networking experiences on Facebook. *Journal of Applied Developmental Psychology*, 30(3), 227-238. doi: 10.1016/j.appdev.2008.12.010
- Peters, J. D. (2001). Witnessing. *Media culture and society*, 23.
- Pew Research Center. (2010). Americans spending more time following the news.
- Pew Research Center. (2011a). 65% of online adults use social networking sites.
- Pew Research Center. (2011b). Internet Gains on Television as Publics Main News Source. <http://www.people-press.org/2011/01/04/internet-gains-on-television-as-publics-main-news-source/>
- Pew Research Center. (2012a). The State of News Media 2012. <http://stateofthedia.org/2012/overview-4/?src=prc-section>
- Pew Research Center. (2012b). You Tube & News: a new kind of visual journalism: Pew research center.
- Plasser, F. (2005). From Hard to Soft News Standards? *The Harvard International Journal of Press/Politics*, 10(2), 47-68. doi: 10.1177/1081180x05277746
- Plutchik, R. (1962). *The emotions: Facts, theories, and a new model*. New York: Random House.
- Plutchik, R. (1980). *Emotion: A Psychoevolutionary Synthesis* New York: Harper & Row.
- Prior, M. (2003). Any Good News in Soft News? The Impact of Soft News Preference on Political Knowledge. *Political Communication*, 20(2), 149-171. doi: 10.1080/10584600390211172
- Puente, S., & Mujica, C. (2006). What's news in Chile? *News around the world* (pp. 119-140). New York, NY: Routledge.
- Rafaeli, S. (1988). Interactivity: From New Media to Communication. In Suzanne Pingree, John M. Wiemann & R. P. Hawkins (Eds.), *Advancing Communication Science : Merging Mass and Interpersonal Processes*. Newbury Park: SAGE.
- Rafaeli, S., & McCarthy, Y. A. (2007). Assessing interactivity in CMC research. In A. N. Joinson, M. K. Y.A., T. Postmes & U.-D. Reips (Eds.), *The Oxford Handbook of Internet Psychology* (pp. 71-88). Oxford, UK: Oxford University Press.

- Ravaja, N. (2009). Contributions of Psychophysiology to Media Research:review ad Recommendations. *Media Psychology*, 6(2), 193-235.
- Ritchey, K., Schuster, J., & Allen, J. (2008). How the relationship between text and headings influences readers' memory. *Contemporary Educational Psychology*, 33(4), 859-874. doi: 10.1016/j.cedpsych.2007.11.001
- Schacter, D. L. (1989). Memory. In N. I. Posner (Ed.), *Foundations of Cognitive Science* (pp. 683-726). Cambridge, MA: The MIT Press.
- Shannon, C. E., & Weaver, W. (1949). *The mathematical theory of communication*. Urbana, IL: University of Illinois Press.
- Shoemaker, P. J. (1996). Hardwired for News : USING BIological and Cultural Evolution to Explain the Surveillance Function. *Journal of Communication*, 46(3), 32-47.
- Shoemaker, P. J., & Cohen, A. A. (2006). *News around the world*. New York, NY: Routledge.
- Smith, B. G. (2010). Socially distributing public relations: Twitter, Haiti, and interactivity in social media. *Public Relations Review*, 36(4), 329-335. doi: 10.1016/j.pubrev.2010.08.005
- Song, F. W. (2010). Theorizing Web 2.0. *Information, Communication & Society*, 13(2), 249-275.
- Thorpe, S., Fize, D., & Marlot, C. (1996). Speed of processing in the human visual system. [10.1038/381520a0]. *Nature*, 381(6582), 520-522.
- Thurstone, L. L. (1928). Attitudes can be measured. *American journal of sociology*, 33, 529-554.
- Tuan, Y.-F. (1977). *Space and place*. Minneapolis:MN: University of Minnesota Press.
- Tuchman, G. (1972). Objectivity as strategic ritual : an examination of newsmen's notions of objectivity. *The American Journal of Sociology*, 77(4), 660-679.
- Tuchman, G. (1978). *Making news*. New York, NY: The Free Press.
- Turing, A. M. (1936). On computable numbers, with an application to the entscheidungsproblem. *Proceedings of the London Mathematical Society*, 42(2), 230-265.
- Turing, A. M. (1950). Computing machinery and intelligence. *Mind: A quarterly review of psychology and philosophy*, LIX(236), 433-460.
- Turkle, S. (1995). *Life on the screen*. New York, NY: Simon&Schuster.
- Wellman, B. (2001). Physical place and cyberplace:the rise of personalized networking. *International journal of urban and regional research*, 25(227-252).
- Wilson, J. M., O'Leary, M. B., Meitu, A., & Jett, Q. R. (2008). Perceived proximity in virtual work: explaining the paradox of far-but-close. *Organization Studies*, 29(7), 979-1002.
- Xie, W., & Newhagen, J. E. (2012). The Effects of Communication Interface Proximity on User Anxiety for Crime Alerts Received on Desktop, Laptop, and Hand-Held Devices. *Communication Research*. doi: 10.1177/0093650212448670