McLuhan's Relevance in Today's Society: A Look at Social Media on Mobile Devices

Sandy McKenzie

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Abstract

Marshall McLuhan devised numerous notions regarding media, including the medium is the message, hot and cool media, and Laws of the Media. Such notions have been deemed controversial by various intellectuals. They have also often been misunderstood. Scholars such as Levinson and Logan have applied these three notions to media including the computer and the Internet. Using Levinson and Logan’s research as a theoretical framework, this study implemented the qualitative method of textual analysis to determine the applicability of the medium is the message, hot and cool media, and Laws of the Media to social media accessed on mobile devices today. In addition, the theory of computer-mediated communication was used to guide the research. The social media studied were Twitter and Flickr. The mobile devices used to access these social media were the iPad (4th generation) and the iPod touch (3rd generation). The iPad (4th generation) was released in 2012, while the iPod touch (3rd generation) was released in 2009. The two mobile devices were used for purposes of comparison, as the iPad has Retina display. It also has a larger screen with a higher resolution.

For this research, 100 tweets regarding trending topics were studied every day for a week. In addition, 100 pictures from the top 10 subscribers recommended by Flickr upon signing up for the service were analyzed. The results proved to be multifaceted, as many themes emerged from the data. The notions of the medium is the message and Laws of the Media were deemed to be more applicable than hot and cool media to Twitter and Flickr accessed on the mobile devices. Besides determining the applicability of McLuhan’s three notions to popular social media, the research provided a better understanding of how people communicate using computer-mediated means.
MCLUHAN’S RELEVANCE IN TODAY’S SOCIETY: A LOOK AT SOCIAL MEDIA ON MOBILE DEVICES

by

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B.A. Fordham University, 2012

Thesis
Submitted in partial fulfillment of the requirements for the degree of Master of Science in Public Relations

Syracuse University
August 2013
ACKNOWLEDGEMENTS

I would like to thank Dr. Dennis Kinsey for serving as my advisor and for providing me with insightful feedback. I would also like to thank Dr. Brenda Wrigley for her advice as a member of my committee, as well as for serving as a mentor to me throughout my studies at the S.I. Newhouse School of Public Communications. In addition, I thank Professor William Jasso for his assistance as a committee member, as well as Professor Maria Russell for her duties as my oral examination chair. I would also like to acknowledge Dr. Carol Liebler and Dr. Brad Gorham for their feedback in COM 601, as well as Dr. Robert Thompson for his feedback in the early stages of my research. Lastly, I thank my family and friends for their support throughout my studies. I would especially like to thank my mom, dad, and brother.
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CHAPTER ONE: INTRODUCTION

According to Marshall McLuhan, who served as the director of the Center for Culture and Technology at the University of Toronto, technologies are extensions of the human body (McLuhan, 1964, p. 3). For example, clothing is an extension of the human skin, as it helps to monitor “heat-control” (p. 119). The wheel is an extension of the foot, as it expedites travel, while the axe is an extension of the arm (Wolfe, 2003, p. xv). As McLuhan (1964) notes, through electric technology such as the television, “we have extended our central nervous system” by breaking barriers of time and space (p. 3). Each extension of the human body affects the development of society. For instance, the velocity with which electric technology disseminates information has resulted in the “compression” of the world, as people have become more aware of “social and political” affairs on a global scale (p. 5). Thus, as McLuhan notes, “the study of man is a study of his extensions” (Strate, 2006, p. 59). Through studying such extensions, McLuhan posits that people can witness the occurrence of evolution, which he argues “takes place outside the organism” (p. 59).

McLuhan formulated numerous concepts regarding extensions of the human body, such as the medium is the message, hot and cool media, and Laws of the Media, which are explored in the literature review. McLuhan applied these concepts to media including the phonograph, the telephone, the radio, and the television. The purpose of this research is to apply McLuhan’s ideas to social media accessed on mobile devices. In today’s society, such means of communication are popular. Through better understanding social media on mobile devices, it is possible for people to help predict and guide the evolution of technology. As Paul Levinson posits, “we have unprecedented, though not unlimited, power” to halt the progression of media “that seem not in our best interests” (Levinson, 2001, p. 203).
For this paper, qualitative research was implemented to provide an in-depth examination of Twitter and Flickr accessed on mobile devices, including the iPad (4th generation) and the iPod touch (3rd generation), in relation to McLuhan’s concepts of the medium is the message, hot and cool media, and Laws of the Media. Due to the notion that the social media were accessed on mobile devices, the theoretical lens of computer-mediated communication was used to guide this research. This paper answers the following research questions:

RQ1: How does McLuhan’s notion of the medium is the message apply to social media on mobile devices?

RQ2: How does McLuhan’s notion of hot and cool media apply to social media on mobile devices?

RQ3: How does McLuhan’s notion of Laws of the Media apply to social media on mobile devices?

According to Lewis Lapham in his 1994 introduction to the MIT Press edition of McLuhan’s Understanding Media, McLuhan’s ideas make “a good deal more sense” than they did in 1964 when the book was originally written (McLuhan, 1964, p. xi). In fact, as Lapham states, technological developments including MTV, the Internet, shopping programs on television, and e-mail were all speculated by McLuhan (p. xi). Nevertheless, McLuhan did not live long enough to see many of his presumptions come to fruition, as he died in 1980 (p. xi). Similarly, Robert K. Logan (2010) argues that McLuhan’s “predictions of the decentralization, interdisciplinarity, the user as content, the closing of the gap between consumers and producers,” and “the medium is the message” have become “more pronounced today” (p. xix).

Thus, as Paul Levinson (2001) notes in his book Digital McLuhan, “McLuhan’s ideas can help us make sense of our new digital age” (p. 1). The digital age is identified by Levinson
(2001) as people’s pursuit of information through the use of technology such as personal computers and software including “Windows and Web browsers” (p. 197). Since Levinson wrote Digital McLuhan in 2001, technology has continued to develop. Today, technology is becoming increasingly geared toward allowing for social interactions to occur through mobile devices. According to a 2013 Pew Research Center study, 31% of people in America own a tablet, while 45% of people own a smartphone (Brenner, 2013, para. 3). In addition, a study conducted by Nielsen and NM Incite indicates that 30% of the time people devote online is spent using social media on mobile devices (Perez, 2012, para. 1). Therefore, not only do mobile devices allow people to access the Internet in the palm of their hands, but they also provide people with the ability to engage in social media wherever they are located.

Although McLuhan’s ideas have been revered by scholars such as Levinson (2001), they have also been criticized and misunderstood. In particular, objections have been voiced regarding McLuhan’s idea of the medium is the message. According to Ben Lieberman (1967), “The greatest defect of McLuhan’s theory is the complete rejection of any role for the content of communication” (p. 218). This statement is a misinterpretation of McLuhan’s idea, as it conflicts with McLuhan’s argument that “the latest approach to media study” takes into account both “media analysis” and “content analysis” (Logan, 2010, p. 371).

In terms of McLuhan’s writing, Christopher Ricks (1967) states, McLuhan’s “style is a viscous fog, through which loom stumbling metaphors” (p. 211). Similarly, Leslie Fiedler asserts that McLuhan “continually risks sounding like the body-fluids man in Doctor Strangelove” (Kostelanetz, 2013, para. 4). While McLuhan’s writing has been criticized, according to Tom Wolfe (2003), “the man’s powers of prediction were astonishing” (p. xvii).
Besides merely critiquing McLuhan’s concepts and writing style, scholars such as Levinson (2001) and Logan (2010) have applied McLuhan’s ideas of the medium is the message, hot and cool media, and Laws of the Media to means of communication including the computer, the Internet, social media, and the iPod. While Levinson and Logan have explored the relation of McLuhan’s ideas to such media, an in-depth textual analysis of Flickr and Twitter accessed on mobile devices was implemented in this study to further contribute to their research. As Logan (2010) states, it is essential that people better “understand how the ‘new media’ are changing the world” (p. 1). Logan (2010) defines “new media” as “a class of media that are digital and interactive” (p. 6).

Through this study, textual analysis provided a more comprehensive understanding of Twitter and Flickr accessed on mobile devices, which are considered “new media” (p. 6). Textual analysis allowed for the examination of Twitter and Flickr as media, as well as for the evaluation of their content (Brennen, 2013, p. 203). Besides studying the design of Twitter and Flickr on the iPad and the iPod touch, tweets for topics listed as “Trends” on Twitter (“FAQ about trends,” 2013, para. 2), as well as content posted by subscribers recommended by Flickr were analyzed for this paper.

Using Levinson and Logan’s research as a theoretical framework, the following chapters analyze the relevance of McLuhan’s predictions to society today through applying the concepts of the medium is the message, hot and cool media, and Laws of the Media to Twitter and Flickr accessed on mobile devices. The second chapter presents a literature review of computer-mediated communication, the medium is the message, hot and cool media, Laws of the Media, social media, and mobile devices. The third chapter contains an explanation of the methodology
implemented for this research. The fourth chapter describes the results of the research, while the fifth chapter offers a discussion of the results.
CHAPTER TWO: LITERATURE REVIEW

Introduction

In order to analyze McLuhan’s ideas in regards to Twitter and Flickr accessed on mobile devices, computer-mediated communication; the medium is the message; hot and cool media; Laws of the Media; social media; and mobile devices must first be examined. The following literature review provides such an examination.

Computer-Mediated Communication

According to Joseph Walther (1996), the theory of computer-mediated communication was conceptualized after computers were connected to each other for purposes of “security and information redundancy” (p. 5). Those who used the computers soon realized that they could also use the connection to send “simple messages” between themselves (p. 5). As a result, computer-mediated communication became a means for people to interact with others without having to be in the same physical space (p. 5). On the one hand, computer-mediated communication proved to be more “task oriented” than face-to-face communication (p. 5). In a study conducted by Terry Connolly, Leonard Jessup, and Joseph Valacich (1990), this finding was especially predominant in cases where computer-mediated communication fostered anonymity (p. 698). According to the study, participants in “an idea-generating task” were found to have “generated most output” under conditions where they were “anonymous to one another” (p. 698). This is due to the notion that, when left anonymous, “group members had available more ideas than they were willing to propose when identified” (p. 699).

On the other hand, research has “demonstrated that the use of e-mail and computer conferencing reduced interpersonal affect and group solidarity” (Walther, 1996, p. 5). This is evident in Sarah Kiesler’s (1986) article “The Hidden Messages in Computer Networks.” As Kiesler (1986) states, “when communication lacks dynamic personal information, people focus
their attention on the message rather than on each other” (p. 51). As a result, “they feel less empathy, less guilt, less concern over how they compare with others, and are less influenced by norms” (p. 51).

Furthermore, according to Kiesler (1986), “without nonverbal tools, a sender cannot easily alter the mood of a message, communicate a sense of individuality, or exercise dominance or charisma” (p. 48). In other words, when communication lacks “nonverbal tools” (p. 48), receivers are offered a “scant” amount of “social information” (Dubrovsky, Kiesler, & Sethna, 1991, p. 119). That being said, Walther (1996) contends that the “lack of physical cues” provided by computer-mediated communication can heighten “cognitive resources devoted to message construction” (p. 22). Such “cognitive resources” (p. 22) allow people to better articulate their “self-perceptions and self-ideals” (p. 23). For example, through computer-mediated communication, people can spend more time “selecting their language,” rather than performing tasks such as nodding, smiling and “looking interested” (p. 22).

Nevertheless, since the 1990s, developments in technology have allowed for more “social information” (Dubrovsky, Kiesler, & Sethna, 1991, p. 119) to be disseminated through computer-mediated communication. As Ernst Bekkering and J.P. Shim (2006) note, computer-mediated communication, such as video conferencing, provides participants with social “cues,” including “facial expressions, voice inflections, and gestures” (p. 104). Researchers such as Howard Rheingold, Kerry Egdorf, and Rita Rahoi also note that relationships and support groups can develop through computer-mediated communication (Walther, 1996, p. 8). Such relationships and support groups have the potential to result in “emotionally rewarding exchanges” (p. 8).
In fact, according to Lisa Tidwell and Joseph Walther (2002), “self-disclosures” made through computer-mediated communication can “operate in patterns similar” to face-to-face communication (p. 323). For example, both forms of communication “not only provide impression-bearing information, but the process of disclosing creates a demand, so that the recipient feels obligated to respond” (p. 323). Nevertheless, as Harry Reis (2007) states, in order for “self-disclosure” to produce “a sense of intimacy between two people,” the recipient must not only reply to the sender, but the recipient must implement “responsive behaviors” such as empathy, validation, and support (p. 10).

According to danah boyd and Nicole Ellison (2008), social media are distinct from other computer-mediated forms of communication due to the notion that they allow people to expose their social networks (p. 211). As a result, people have the opportunity to communicate with those in their friends’ social networks (p. 211). This is evident when someone follows another person on Twitter because the two people share a mutual contact. Thus, a person’s “friends” on social media are not necessarily people with whom they are truly friends in real life (p. 220). In such cases, “friends” on social media serve as “an imagined audience to guide behavioral norms” (p. 220).

Although “friends” on social media may serve “to guide behavioral norms” (p. 220), people do not always choose to depict themselves in a truthful manner when creating profiles or other “online construction[s] of themselves” (p. 219). Nevertheless, when one’s social network is made public on social media, Judith Donath and danah boyd (2004) argue that a person is more likely to be truthful in his or her “self-presentation” (p. 73). Through analyzing Twitter and Flickr accessed on mobile devices in relation to McLuhan’s ideas of the medium is the
message, hot and cool media, and Laws of the Media, a better understanding of social media accessed on mobile devices as forms of computer-mediated communication was obtained.

The Medium is the Message

McLuhan first introduced the concept of the medium is the message in his 1960 “Report on Project in Understanding New Media,” which he delivered on behalf of the “National Association of Education Broadcasters pursuant to a contract with the office of Education, United States Department of Health, Education and Welfare” (Levinson, 2001, p. 35). According to McLuhan (1964), the “personal and social consequences” of a given technology stem from “the new scale” that the technology establishes in peoples’ lives (p. 7). For example, with the advent of railroads, which McLuhan (1964) considers to be a medium, travel time greatly decreased (p. 8). This resulted in the development of “totally new kinds of cities and of work and leisure” (p. 8). Railroads also enhanced peoples’ ability to efficiently transfer goods (p. 8). As McLuhan (1964) notes, railroads helped to decrease travel time regardless of whether the content the trains carried consisted of people or goods (p. 8). Consequently, McLuhan (1964) asserts that the medium is the message (p. 8).

In addition, McLuhan (1964) contends that “the ‘content’ of any medium is always another medium” (p. 8). For instance, speech is the content of writing, while the development of thought serves as the content for speech (p. 8). As McLuhan (1964) notes, the content of a medium such as writing can vary greatly, as one can write anything from a single letter to a novel (p. 9). Therefore, content is inadequate in “shaping the form of human association” (p. 9). Instead, McLuhan (1964) argues that it is the medium that “shapes and controls the scale and form of human association and action” (p. 9). For example, with the advent of electricity, “patterns of decentralism” emerged in society (Logan, 2010, p. 364). As Logan (2010) states, “electric information provides instant data access equally to all members of” a particular
organization, “regardless of their hierarchical positions” (p. 364). Logan (2010) notes that this change in “access” to information allows for the redistribution of tasks within the organization (p. 364).

Due to a medium’s ability to determine peoples’ relationships and actions, a medium becomes a “staple” in society similar to cotton or coal (McLuhan, 1964, p. 21). As McLuhan (1964) states, the “social patterns and organization” that a particular society develops depends on its “major staples” (p. 21). According to McLuhan (1964), not only do media act as “staples” (p. 21) in society, but they can also impact history. Take the example of the radio, which Hitler used as a means of disseminating propaganda (Levinson, 2001, p. 142). As McLuhan (1964) states, “Had TV occurred on a large scale during Hitler’s reign he would have vanished more quickly. Had TV come first, there would have been no Hitler at all” (p. 299). McLuhan (1964) attributes this to the notion that the radio acts as a “tribal drum,” which mesmerizes people (p. 298). As is noted by a “radio poll” participant, “I live right inside the radio when I listen. I more easily lose myself in radio than in a book” (p. 298).

That being said, McLuhan (1964) has received criticism over his contention that history would not be the same “had TV come” before the radio (p. 299). Benjamin DeMott (1967) argues that McLuhan’s “flip comment about TV and Hitler” is comprised of “weird tonal abstractions,” which stifle “feeling and sympathy” (p. 244). As DeMott (1967) states, McLuhan deceives his readers, as he “empties facts and agonies from the world” (p. 244). Others entirely disagree with the idea that the medium is the message. According to Wilbur Schramm (1973), “researchers have found a much larger portion of the variation in the effects of a communication within the message than within the medium” (p. 128). Thus, he states, “The message is the message, and the medium is the medium, and one affects the other but not to the exclusion of
either” (Schramm, 1973, p. 128). Schramm (1973) offers the assassination of President Kennedy as a case in point (p. 128). As Schramm (1973) posits, “there is no evidence” indicating “that the effect of the news of President Kennedy’s death was determined chiefly by whether it came via television, radio, print, or word of mouth” (p. 128).

In addition, Christopher Ricks (1967) argues that McLuhan disregards the impact of content entirely (p. 212). This argument stems from the statement that “the effects of technology,” according to McLuhan, “do not occur at the level of opinions or concepts, but alter sense ratios or patterns of perception steadily and without any resistance” (p. 212). As Ricks (1967) contends, this statement implies that, for McLuhan, “the sole effect is that of the medium itself” (p. 212). Thus, Ricks (1967) posits that McLuhan should have stated that consequences “do not occur only at the level of opinions” (p. 212).

Yet, according to Levinson (2001), the concept of the medium is the message has been “wildly misinterpreted as a manifesto ‘against’ content” (p. 35). Levinson (2001) contends that the true meaning of the medium is the message is that the medium through which people receive information has a more significant effect on people than does the information itself (p. 35). As Levinson (2001) states, “the act of talking on the phone has been more revolutionary in human affairs than most things said on the phone” (p. 35). In addition, people devote more attention to the content of a newspaper than they do to the recognition that they are “reading a newspaper instead of listening to the radio” (p. 37). Thus, Levinson (2001) argues that McLuhan’s intention in positing that the medium is the message was to help people gain a better comprehension of the importance of media in their lives (p. 36).

As Logan (2010) states, “listening to an audio book is a completely different experience than reading a printed book or an e-book,” as “one cannot leaf through an audio book or go back
to read a section easily the way one can with a printed book” (p. 137). Alternatively, an audio book “allows people to consume a book” while engaging in activities such as driving (p. 137). Logan (2010) agrees with Levinson that the concept of the medium is the message has been misunderstood by many scholars. According to Logan (2010), the misunderstanding is a result of people taking McLuhan’s idea “literally” (p. 353). As Logan (2010) states, “McLuhan wanted to shake up the field and the best way to do that was through paradox to wake people up to the fact that the medium has an effect independent of its content” (p.353). In fact, McLuhan himself stated, “the latest approach to media study considers not only the ‘content’ but the medium and cultural matrix within which the particular medium operates” (p. 371).

According to Neil Postman (1985), “each medium, like language itself, makes possible a unique mode of discourse by providing a new orientation for thought, for expression, for sensibility. Which, of course is what McLuhan meant in saying the medium is the message” (p. 10). For example, television news programs present people with a “peek-a-boo world, where now this event, now that, pops into view for a moment, then vanishes again” (p. 77). This means that “we are presented not only with fragmented news but news without context, without consequences” (p. 100). Consequently, Postman (1985) asserts that “TV news has no intention of suggesting that any story has any implications, for that would require viewers to continue to think about it when it is done and therefore obstruct their attending to the next story” (p. 103).

In terms of the Internet, Nicholas Carr (2011) argues that users are inclined to “quickly scan short passages of text from many sources” (p. 65). This is evident in the concept of the “power browse,” where people skim “titles, content pages and abstracts going for quick wins” (p. 66). According to Carr (2011), “what the Net seems to be doing is chipping away at my capacity for concentration and contemplation,” as the “mind now expects to take in information the way
the Net distributes it: in a swiftly moving stream of particles” (p. 65). Therefore, Carr (2011) argues that “the style of reading promoted by The Net, a style that puts ‘efficiency’ and ‘immediacy’ above all else, may be weakening our” ability to critically analyze information (p. 67). As Carr (2011) states, “media are not just passive channels of information” (p. 64). Not only do media “supply the stuff of thought, but they also shape the process of thought” (p. 64).

According to Logan (2010), “new media” such as the Internet have “14 characteristics,” or “messages,” which “intertwine and support each other” (p. 49). Among these “characteristics” are “interoperability,” “two-way communication,” “ease of access to information,” “continuous learning,” “convergence,” and “aggregation of content” (p. 49). As Logan (2010) states, “digitization makes” it “possible” for these “characteristics” to “intertwine” (p. 49). In order to determine if the notion of the medium is the message applies to social media such as Twitter and Flickr accessed on mobile devices, this study further explored the “characteristics” of “new media,” including “two-way communication” and “ease of access to information” (p. 49).

**Hot and Cool Media**

McLuhan’s notion of hot and cool media originated with jazz (Levinson, 2001, p. 106). Hot jazz, which is considered “brassy, big band music,” overwhelms “the soul” (p. 106). Alternatively, cool jazz consists of soft bits of sound, which arouses peoples’ curiosity to hear more (p. 106). In Levinson’s (2001) words, “The brassiness of the big hot band bounces off us, knocks us out,” while the “cool tones breeze through us and bid our senses to follow like the Pied Piper” (p. 106). A hot medium, according to McLuhan (1964), “extends one single sense in ‘high definition’” (p. 22). A medium is considered “high definition” if it is “loud” or portrays vivid imagery (Levinson, 2001, p. 106). Thus, it is not the “number of senses” a medium
involves that defines it as hot (p. 107). On the contrary, it is the medium’s ability to penetrate
the audience that makes it hot (p. 107). As a result of its “high definition,” a hot medium does
not require users to “fill in” as much information as a cool medium (McLuhan, 1964, p. 23).
This is due to the notion that a hot medium provide users with an ample amount of information
(p. 23).

According to McLuhan (1964), a photograph is an example of a hot medium, as it
provides people with a “high definition” picture (p. 22). McLuhan also considers the radio hot,
as he finds that it produces “fuller dimensions of sound” than other audio-related media such as
the telephone (Levinson, 2001, p. 107). Consequently, the radio captures the full attention of its
listeners and encompasses them in every sound it transmits (p. 107). “The printed word” is
another example of a hot medium (McLuhan, 1964, p. 23). This is due to the notion that “the
printed word” has a “specialist intensity” that “unifies spaces horizontally” (p. 23).

Alternatively, a cool medium is “low definition” in the sense that it offers people less
information than does a hot medium (McLuhan, 1964, p. 22). A cool medium requires high
levels of user contribution, as people must “fill in” the information that they do not receive from
the medium (p. 23). A cool medium tends to be fuzzy and indistinct (Levinson, 2001, p. 106).
When talking on the telephone, for example, “the ear is given a meager amount of information”
(p. 107). This is especially true if the telephone has a bad connection. The listener must increase
his or her concentration in order to comprehend what the person talking is saying. In fact,
speech itself is a cool medium, as it is up to the listener to interpret its meaning (McLuhan, 1964,
p. 23). In 1964, McLuhan also considered the television to be a cool medium (Levinson, 2001,
p. 107). This is due to the notion that, at the time, the television produced images that were
fuzzier than photographic images, while it produced sound that was less defined than radio transmissions (p. 107).

The disparity in hot and cool media is especially apparent in the Kennedy-Nixon debates. According to those who watched the debates on television, Kennedy was the winner (p. 111). McLuhan attributes this to the notion that Kennedy’s style was more in sync with the coolness of the television (p. 111). As Levinson (2001) states, Kennedy’s “wit and poetry played perfectly to the camera” (p. 111). Meanwhile, those who listened to the debates on the radio deemed Nixon to be the winner (McLuhan, 1964, p. 299). According to McLuhan (1964), Nixon’s “sharp, high-definition image” was more fitting for the hot medium of radio (p. 299).

Nevertheless, Raymond Gozzi, Jr. (1992) argues that it was not the hotness of radio that caused listeners to deem Nixon the winner of the debates (p. 229). According to Gozzi (1992), the majority of those who listened to the debates on the radio identified themselves as Republicans (p. 229). Gozzi (1992) recognizes this as “the most probable reason” why Nixon was perceived to win the debates on the radio, as Nixon was the Republican candidate (p. 229). In 1992, Gozzi agreed that the television’s image was incomplete, as it was comprised of “rapidly scanning lines” (Gozzi, 1992, p. 228). Nonetheless, Gozzi contends that the lines scanned with a velocity so great that they did not impede peoples’ perceptions of the image (p. 228). As Gozzi (1992) states, “we do not see an incomplete picture, we do not fill it in” (p. 228). Although Gozzi (1992) did not agree with McLuhan’s assessment of the Nixon-Kennedy debates, or his assessment of the television, Gozzi did find the concept of attributing a “temperature” to a medium to be interesting (p. 229).

What is more, according to McLuhan (1964), it is possible for a medium’s temperature to shift (p. 23). As Levinson (2001) states, “media constantly undergo evolution under pressure of
human usage and invention” (p. 108). Such “usage and invention” can cause a significant change in the “temperature of media” (p. 108). For example, “the hotting-up” (McLuhan, 1964, p. 23) of a medium is evident in the development of the television. With the introduction of high-definition television, the medium’s picture became clearer. As a result, the television now provides audience members with more information. This means that audience members do not have to focus as much to interpret what is on the screen. Therefore, the television has become hotter. Hamid van Koten (2009) agrees with this notion (p. 90). As van Koten (2009) points out, while in the past, the television only offered programs in black and white, the television now produces programs in color (p. 90). The television also “went digital” when it acquired “wide screens” and “surround-sound” capabilities (p. 90).

Nevertheless, according to van Koten (2009), as the television becomes hotter it also becomes more “interactive” (p. 90). Van Koten (2009) believes that this notion is in direct opposition with McLuhan’s concept that hot media require less contribution from their users (p. 90). Thus, van Koten (2009) deems the idea of hot and cool media to be “no longer applicable” to society (p. 90). Logan (2010) agrees that the concept of hot and cool media is no longer “useful” (p. 366). This can be attributed to the idea that the computer has elements of both hot and cool media (Levinson, 2001, p. 109). For example, the computer can display “the printed word,” which McLuhan considers to be a hot medium (McLuhan, 1964, p. 23). Yet, similar to the television, the computer has a screen, which cools down the information it portrays (Levinson, 2001, p. 109). This is problematic for Logan. According to Logan (2010), “savvy computer users do not read” a lot of text on computer screens, as “assembling an image on the screen” is a “right brain” and “cool activity” (p. 366). Alternatively, reading text is a “left-brain, hot activity” (p. 366). For Logan (2010), this brings into question whether or not the computer
can be classified as a hot or cool medium (p. 366). As Logan (2010) states, “the use of computers is both hot and cool” (p. 366).

That being said, according to Levinson (2001), one of the most critical aspects of McLuhan’s notion of hot and cool media is that, in a “thermostatic” manner, media help to regulate society so that it does not become too hot or too cool (p. 110). As Levinson (2001) states, “For McLuhan, the most important result of the rise of television as a cool medium is that it ventilated our culture” from the hotness of the radio (p. 110). McLuhan’s idea that media help to regulate society in a “thermostatic” (p. 110) manner was derived from Innis’ “view that cultures do a see-saw act between time-binding or preservational media and space-extending or disseminative media” (p. 110). Taking this into consideration, Levinson (2001) argues that the computer does not threaten the validity of the notion of hot and cool media, as computers merely aerate “the hot legacy of the printed word” by bringing forth “the cooler currents of words in motion on screens” (p. 109). As Levinson noted in 2001, the aeration of “the printed word” fit perfectly with what he referred to as the “general lowering of temperature in the age of television” (p. 110). A similar phenomenon occurred in regards to movies, which were “ventilated” (p. 110) when they were broadcast on television (p. 109). Levinson (2001) asserts that a movie displayed in a theater is hot, however, “when shown on TV, the same film becomes content for a very different medium, at once icier, isolational, and more in need of the warmth of our participation” (p. 109).

Furthermore, Levinson (2001) contends that the hot and cool characteristics of the computer do not “cancel each other out” or make the medium “lukewarm like lake water” (p. 109). On the contrary, according to Levinson (2001), the concept that print becomes cooler when displayed on computer screens demonstrates the “triumph of cool” (p. 109). As Levinson
(2001) argues, the computer is “the most fully interactive medium in history,” as it enables people to compose e-mails and participate in chat rooms (p. 90). The computer also allows people to engage in social media, which require high levels of user interaction.

Therefore, various scholars have opposing views regarding the applicability of hot and cool media. On the one hand, Levinson (2001) vouches for the legitimacy of hot and cool media in stating that the computer is indicative of the “triumph of cool” (p. 109). On the other hand, van Koten (2009) and Logan (2010) argue that developments in media, such as digital television and computers, bring the validity of the notion of hot and cool media into question. The research conducted for this study helped to resolve the contesting opinions maintained, on one side, by Levinson and, on the other side, by van Koten and Logan.

**Laws of the Media**

McLuhan (1975) used the “scientific method” of “induction” when he conceptualized his Laws of the Media (p. 75). In forming his laws, McLuhan was inspired by Kenneth Boulding’s statement that every medium has a “break boundary at which the system suddenly changes into another or passes some point of no return in its dynamic processes” (McLuhan, 1964, p. 38). McLuhan (1964) refers to the point at which a medium “changes into another” as the “reversal” of an “overheated medium” (p. 38). For example, when the road crosses its “break boundary,” it reverses to transform metropolises into freeways (p. 38). McLuhan (1964) asserted a medium is likely to reach its “break boundary” when it undergoes the process of “cross-fertilization” with another medium (p. 39). For example, according to McLuhan (1964), the “cross-fertilization” of “tribal and individualist man” resulted in “the phonetic alphabet” (p. 39). As McLuhan (1964) notes, a medium does not exist in isolation from other media (p. 8).
To demonstrate that a medium does not exist in isolation, McLuhan derived four Laws of the Media, which he also refers to as the “tetrad” (Levinson, 2001, p. 189). According to his laws, each medium “amplifies” or “enhances” a characteristic of “human society” (p. 189). For example, radio amplifies speech so that it breaks boundaries of space (p. 189). Each medium also renders an existing medium “obsolete” (p. 189). According to McLuhan, radio renders print obsolete, as with the advent of radio, many people began to listen to the medium for breaking news instead of waiting to read printed newspapers (p. 189). Nevertheless, as Logan (2010) notes, a new medium does not completely render an existing medium obsolete (p. 375). This is evident in the notion that people continue to read newspapers (p. 375). As Logan (2010) argues, when McLuhan stated that a new medium renders an old medium obsolete, he did not mean that the old medium ceases to be utilized in society (p. 375). Rather, the new medium becomes more “dominant” than the old medium (p. 375).

Furthermore, the new medium “retrieves” at least one trait from an older medium (Levinson, 2001, p. 189). For instance, the radio retrieves the “town crier,” who was no longer needed when printed newspapers began to be circulated (p. 189). Finally, each medium ultimately “reverses” or “flips into” another medium (p. 189). The reversal of a medium, however, does not result in “the complete antithesis” of the medium (p. 197). Instead the reversal of a medium results in a conglomeration of multiple media (p. 197). For example, after being combined with the visual properties of movies, the radio reversed into “talkies” (McLuhan, 1964, p. 39). According to Levinson (2001), a medium does not necessarily amplify, render obsolete, retrieve, or reverse into solely one medium (p. 190). On the contrary, the radio not only reversed into “talkies” (McLuhan, 1964, p. 39), but the radio also reversed into the television, which “amplifies the visual, but in an ‘acoustic’ all-at-once sense” (Levinson, 2001, p.
According to McLuhan, the television renders the radio obsolete (p. 190). This is due to the notion that, with the advent of television, people began to watch programs rather than listen to them on the radio (p. 190). The television also “retrieves the visual” (p. 190). The visual that the television retrieves, however, is different from the visual of print, as the television is an electronic medium (p. 190).

In addition, the television reverses into the VCR, which Levinson (2001) refers to as “TV with a memory” (p. 190). The television also reverses into the computer, which can be used to access the Internet (p. 191). The Internet amplifies print, radio, and television all at once (p. 190). This is due to the notion that people can read, listen to music, or watch television programs online. As Levinson (2001) notes, the Internet is a reversal of “almost every medium and its effects that came before it” (p. 202). For instance, print and social interaction are combined in e-mails and chat rooms (p. 190). In today’s society, Logan (2010) argues that “new media” such as Twitter and Flickr amplify “interactivity, access to information, and two-way communication” (p. 40). “New media” render mass media obsolete, “retrieve community,” and “reverse into hyperreality” (p. 40). Therefore, as Levinson (2001) states, “there is a cyclical but progressive relationship among media and their effects” (p. 190).

McLuhan’s Laws of the Media were not received without criticism. According to John Sturrock (1989) of The New York Times, McLuhan’s “so-called tetrads, or four-finger exercises, prove nothing, beyond the embarrassing fact that McLuhan’s questions and his own impressionistic answers to them are never going to amount to a science” (para. 4). Sturrock (1989) also contends that McLuhan’s laws are “exciting but arbitrary” (para. 4).

In McLuhan’s defense, James Chesebro (1991) notes that the Laws of the Media are written more clearly than McLuhan’s previous works (p. 379). Furthermore, according to
Levinson (1999), McLuhan’s Laws of the Media can provide us with a better understanding of our past and our future, as they grant us the ability to “size up any medium and its impact” (p. B11). This is due to the notion that “each new major technology brings about a cascade of social, political, personal, and aesthetic changes” (p. B11). For example, “the easy, interactive communication facilitated by the Internet” led to the challenge of “central authority” (p. B11). Not only was the Internet implemented “by political dissidents in China,” but it was also utilized “by various factions” during “conflicts” in the Balkans (p. B11). Another outcome of the Internet is self-publishing, as virtually anyone can disseminate information online (p. B19). In addition, stakeholders can now “skip the middleman, and buy and sell stock shares electronically” (p. B19). A chart that applies McLuhan’s laws, as well as their “cascade of social, political, personal, and aesthetic changes” (p. B19), to the Internet is located in Appendix A.

Since McLuhan conceptualized his Laws of the Media, vast changes have occurred in the technological landscape, which have altered the ways that people interact. Such developments include social media, which can be accessed on mobile devices. This study examined Twitter and Flickr on the iPad and the iPod touch in order to help explicate how technological developments have changed the ways people communicate.

Social Media

As Simeon Edosomwan, Sistalaskshmi Kalongot Prakasan, Doraine Kouame, Jonelle Watson, and Tom Seymour (2011) posit, social media have existed in theory “since the dawn of human interaction” (p. 79). For example, the telegraph provided for people to exchange messages across continents (p. 80). In addition, in the 1950s, phone phreaking was used to hack into open telephone lines that provided for the use of conference calling (p. 80).
telephone lines, what Edosomwan, Prakasan, Kouame, Watson, and Seymour (2011) refer to as “the first blogs and podcasts” were held (p. 80). Nevertheless, today, social media is thought of in terms of digital technologies and capabilities. According to The Oxford English Dictionary, social media is defined as “websites and applications that enable users to create and share content or to participate in social networking” (“Social media,” 2013, para. 1). Such websites and applications include Twitter and Flickr.

Twitter

Twitter was established in 2006 (Edosomwan, Prakasan, Kouame, Watson, & Seymour, 2011, p. 84) in San Francisco (“The fastest, simplest,” 2013, para. 5). As Edosomwan, Prakasan, Kouame, Watson, and Seymour (2011) note, people became attracted to Twitter due to the notions that it allowed for “micro blogging” and that “it was used by some celebrities” (p. 84). According to PRWeb, as of June 2012, over 3,000 celebrities use Twitter, including Justin Bieber, Rihanna, Lady Gaga, Britney Spears, Taylor Swift, Katy Perry, and LeBron James (“Tweetwood adds new metrics,” 2012, para. 1).

In February 2013, Twitter Advertising announced on its blog that Twitter has over 200 million users worldwide (“New compete study,” 2013, para. 2). On a monthly basis, 60% of these users access Twitter on mobile devices (para. 2). Twitter’s popularity on mobile devices makes the study of Twitter on the iPad and the iPod touch noteworthy. The app for Twitter is free to download on mobile devices (“The fastest, simplest,” 2013, para. 6). It is compatible with the iPhone, the iPod touch, and the iPad, as well as Blackberry products and those that have access to the Android market or use Windows 7 (para. 6).

According to its website, “Twitter is a real-time information network that connects you to the latest stories, ideas, opinions and news about what you find interesting” (para. 1). People can
establish accounts on Twitter by providing the site with their e-mail addresses and creating passwords. Once on Twitter, people can compose messages, or tweets, that contain up to 140 characters (para. 2). Messages can be composed in over 20 different languages (para. 5). For messages that require more than 140 characters, people can use services such as bitly, which allow them to post links to more information (“Bitly,” 2013, para. 4). Pictures and videos can also be shared in tweets (“The fastest, simplest,” 2013, para. 2). Besides composing tweets, people can retweet. According to Twitter, a retweet “is a re-posting of someone else’s Tweet” (“FAQs about retweets,” 2013 para 1).

People can also choose to follow other people or organizations that have accounts on Twitter. When someone follows others on Twitter, it means that the person is “subscribing to their Tweets” (“FAQs about following,” 2013, para. 1). In other words, the tweets of the people or organizations that a particular person follows will show up in the “Home tab” of the person’s Twitter account (para. 1). According to Logan (2010), people use Twitter to “help friends keep in touch with each other,” as well as to “promote something to the general Twitter community” (p. 266). Therefore, Twitter is significant to study not only due to its popularity among the general public, but also due to its value for organizations.

According to a Pew Internet study, 74% of “cultural institutions such as museums, arts organizations, and performers” use Twitter (Thomson, Purcell, & Rainie, 2013, para. 3). Eighty-two percent of the institutions studied use social media such as Twitter to “engage with audience members, either prior to, during, or following an event” (para. 16). Sixty-five percent of the institutions use Twitter, among other social media, to “learn more about” their “audience, patrons, or stakeholders,” while 52% “get feedback from the public or ‘crowdsource’ an idea” (para. 16). Furthermore, of the institutions studied, 56% stated that social media such as Twitter
have a “‘major impact’ on their engagement with their publics,” including driving “website traffic” (para. 20).

Besides its popularity among organizations, Twitter is noteworthy for several other reasons. Not only does Twitter limit messages to 140 characters, but Twitter is especially popular among minority populations. According to Carrie Brown, Elizabeth Hendrickson, and Jeremy Littau (2011), “minority Internet users are more than twice as likely as white users to utilize Twitter” (p. 2). Twitter also differs from other forms of social media in its “follower-following typology analysis” (Kwak, Lee, Park, & Moon, 2010, p. 1). As Haewoon Kwak, Changhyun Lee, Hosung Park, and Sue Moon (2010) state, the social medium has “a non-power-law follower distribution, a short effective diameter, and low reciprocity, which all mark a deviation from known characteristics of human social networks” (p. 1).

In addition, while LinkedIn is a “work-related” social medium, and MySpace is typically used for “connecting those with shared interests such as music or politics” (Nicole Ellison, Charles Steinfield, & Cliff Lampe, 2007, p. 1143), “research has found that Twitter may be uniquely suited among social networks to offer a venue for the purveyors of news and information” (Brown, Hendrickson, & Littau, 2011, p. 2). As Logan (2010) points out, “many people learned” of a “bridge collapse in Minneapolis” through Twitter (p. 267). In addition, Twitter played a critical role in the Arab Spring movements, which have also been referred to as “Twitter Revolutions” (“Debate flares,” 2013, Title section). According to Phillip Howard, a professor at the University of Washington, social media such as Twitter have “fundamentally changed the way people think about their options” (para. 5). For example, during the Arab Spring movements, people were able to form “a networked public” on Twitter (para. 6). As Howard notes, “authoritarian regimes had been accustomed to controls on traditional media but
were unable to keep up with the rapid pace of Twitter and Facebook organizing at that time” (para. 7).

Besides forming “a networked public” (para. 7) on Twitter, people can send direct messages. Direct messages are “private messages” (“Posting or deleting direct messages,” 2013, para. 1). According to Twitter, “You can only send a direct message to a user who is following you” and “you can only receive direct messages from users you follow” (para. 1). Furthermore, people can use hashtags in their tweets. According to Twitter’s website, “People use the hashtag symbol # before a relevant keyword or phrase (no spaces) in their Tweet to categorize those Tweets and help them show more easily in Twitter Search” (“Using hashtags on,” 2013, para. 1). The most popular hashtags are displayed on the left-hand side of a person’s “Home tab” on Twitter’s website (FAQ about trends, 2013, para. 1). On Twitter’s app, one can find these hashtags by pressing the hashtag icon, which brings the user to a page where he or she can select to view hashtags defined as “Trends” (Twitter, Inc., Twitter).

Flickr

Michael Stephens (2006) describes Flickr as “an image-hosting online community” (p. 58). Flickr was created by Caterina Fake and her husband Stewart Butterfield in 2004 (Graham, 2006, para. 3). The goals of Flickr are to “help people make their photos available to the people who matter” and to “enable new ways of organizing photos and videos” (“About Flickr,” 2013, para. 1). Between December 2004 and December 2005, 3.4 million people visited Flickr’s website (Graham, 2006, para. 10). Flickr’s popularity caught the attention of Yahoo, as in March 2006, Yahoo purchased Flickr (para. 7). A year later, subscriptions to Flickr grew from 250,000 to over 2 million (para. 10). Today, Flickr has approximately 87 million subscribers (Smith,
Flickr’s app can be accessed on various Apple, Android, and Windows mobile devices (“Flickr on your,” 2013, para. 1).

Flickr is important to study not only due to its popularity, but also due to the unparalleled level of interactivity it offers users. Besides uploading and viewing pictures, Flickr subscribers can also serve as “creators and indexers of multimedia information sources through activities such as tagging” (Rorissa, 2010, p. 1). According to Flickr’s website, tags are “keywords or labels that you add to a photo to make it easier to find later” (“Tags,” 2013, para. 1). Allowing subscribers to create their own tags presents “opportunities—for designers of information indexing and retrieval systems and users alike” (Rorissa, 2010, p. 3). For example, “although traditional indexing is done by professionals (e.g., librarians) for the benefit of potential users, social tagging is done by users for their own benefits” (p. 3). On Flickr, for instance, subscribers do not need to “rely on controlled vocabularies” when tagging their pictures (p. 3).

In addition to creating tags, Flickr subscribers can comment on pictures posted by other members of the social medium (Stephens, 2006, p. 58). Subscribers can also create “image pools” of pictures that share a common topic and form “groups” to discuss their pictures (p. 58). Therefore, besides serving as a way for people to “store, sort, search and share” (“General Flickr Questions,” 2013, para. 1) their pictures, Flickr has capabilities that are “characteristic of social networking” (Rorissa, 2010, p. 2). Furthermore, not only can subscribers post comments with their pictures, but people can designate other Flickr subscribers as their contacts (p. 59). After designating people as contacts, a Flickr subscriber gains access to “feeds of their images” (p. 59). Subscribers can also allow their contacts to “organize their stuff” (“About Flickr,” 2013, para. 4). In addition, subscribers can receive notes on particular portions of their pictures from their contacts (Stephens, 2006, p. 59).
Flickr offers subscribers many options when uploading pictures and videos. For example, subscribers can manage their privacy settings to limit the number of people who are allowed to view their images (p. 59). Subscribers can also choose to upload their pictures with copyrights or to upload them without copyrights to The Creative Commons (p. 59). Signing up for a basic Flickr account is free (“Sign up for,” 2013, para. 1). A basic Flickr account provides people with a terabyte of space to upload their pictures and videos (para 1.) Flickr subscribers can use their Flickr accounts to post their pictures and videos on blogs, as well as on Twitter and Facebook (“Sharing,” 2013, para. 1). Pictures and videos on Flickr can also be e-mailed, as well as linked to other websites (para. 3). In addition, Flickr’s “‘blog this’ button” allows subscribers to directly send pictures to their blogs (Logan, 2010, p. 277).

**Mobile Devices**

In *Understanding New Media*, Logan (2010) provides an “analysis of new media not dealt with” in *Understanding Media*, such as Twitter and Flickr (p. 210). Logan not only analyzes the social media, but he also examines mobile devices such as the iPod. In terms of the medium is the message, Logan (2010) states, “it is the elegance of the design and usability [of the iPod] that has led to its overwhelming success in the marketplace” (p. 176). A major aspect of the iPod’s “elegance” and “usability” is its implementation of a touch screen, which “takes up the entire face of the device” (Logan, 2010, p. 176). The iPod’s “touch sensitive screen” also makes the iPod a highly interactive medium (p. 176). Moreover, the iPod offers the user “an unprecedented level of choice not only of the music one listens to, but also when and where one listens to it” (p. 175). As Sherry Turkle states, the iPod is “a reflection of who we are as people, a way of seeing ourselves in the mirror of the machine” (p. 176). Thus, in regards to Laws of the Media, the iPod demonstrates how “new media” retrieve peoples’ identities, which, according to
Logan (2010), were suppressed with the advent of television (p. 176). As Dylan Jones notes, the iPod "forces you to listen to yourself in a different way" (p. 176).

Logan (2010) also contends that a "personal computer," such as a "notebook" or a "PC tablet," increases "access to computing, obsolesces the mainframe, retrieves the personal secretary and administrative assistant, and reverses into information overload" (p. 223). Similar to the "notebook" or the "PC tablet," which increase "access to computing" (p. 223), mobile devices including the iPod touch and the iPad allow people to access the Internet and interact with others at any time and in any location. According to Logan (2010), such unlimited access to information and social interaction has created an "obsessive nature" among people (p. 229). For example, as Logan (2010) points out, a BlackBerry is often referred to as a "CrackBerry," as it "soak[s] up a lot of users’ time checking up on their latest messages" (p. 229). In fact, Logan (2010) goes as far as to posit that BlackBerry devices "could potentially" diminish the amount of time people have "for thinking" (p. 230).

Although Logan (2010) analyzed mobile devices in *Understanding New Media*, he did not examine the implementation of Twitter and Flickr on these devices. In addition, neither Logan (2010) nor Levinson (2001) have completed an in-depth textual analysis of these media that is tantamount to the analysis completed for this study. Therefore, this research contributes to the "analysis of new media" (p. 210), as well as to the determination of the applicability of McLuhan’s notions of the medium is the message, hot and cool media, and Laws of the Media in today’s society. The following chapter describes the methodology used for this research.
CHAPTER THREE: METHODOLOGY

Introduction

The method that was employed for this research is textual analysis. As Bonnie Brennen (2013) notes, the history of textual analysis can be traced back to Siegfried Kracauer’s “The Challenge of Qualitative Content Analysis,” which was written between 1952 and 1953 (p. 194). For Kracauer, content analysis did not provide enough in-depth detail regarding a text, as content analysis is mostly concerned with counting “separate pieces and parts of” a text (p. 194). Kracauer sought to examine texts “in their entirety as a complete entity” (p. 194). Through such examination, both the “surface meanings” and “underlying intentions” of a particular text can be uncovered (p. 194).

Method

According to Allen McKee (2003), through textual analysis, a researcher can comprehend “how other human beings make sense of the world” (p. 1). As Brennen (2013) notes, a text is “something we can make meaning from” (p. 4). Thus, anything from newspapers to articles of clothing can be considered texts (p.4). As Brennen (2013) states, textual analysis provides for researchers to “make an educated guess at some of the most likely interpretations that might be made of that text” (p. 1). Through their interpretations, researchers can gain insights into the “socially constructed reality” in which the text was produced (p. 4). According to Mike Cormack, both the content and the structure of a text can be examined through textual analysis (p. 203). This coincides with McLuhan’s notion that “the study of communication patterns” must incorporate both an analysis of the media and an analysis of the media’s content (Logan, 2010, p. 371).
For this paper, I chose to use the theory of computer-mediated communication to guide my research, as I analyzed Twitter and Flickr on the iPad and the iPod touch. The iPad and the iPod touch serve as computers in this case, as communication is mediated through their screens. I selected the iPad (4th generation) and the iPod touch (3rd generation) for purposes of comparison. For one, the iPod touch has a screen size of 3.5 inches (“iPod touch (3rd generation),” 2010, para. 10), while the iPad has a screen size of 9.7 inches (“iPad,” 2013, para. 6). The iPod touch that I used for this research was introduced to the market in September 2009 (“Identifying iPod models,” 2012, para. 11). Thus, it does not have the Retina display that is available on the iPad (4th generation). I purchased both the iPad and the iPod touch for this study.

In order to analyze Twitter and Flickr on the mobile devices in relation to McLuhan’s ideas, I examined the structure and design of the social media accessed through the iPod touch and the iPad. In particular, I observed the layout of both social media, as well as the ways in which the media provided for navigation. I also analyzed how the touch screens of the mobile devices affected the operation of the social media. This analysis took place from July 3, 2013, to July 20, 2013.

Once I collected the data, I interpreted my results in order to determine the answers to my research questions. To interpret my results, I coded the data based on themes. As the design of my research implements grounded theory, I acquired the themes as they emerged from the data (Creswell, 2009, p. 13). The coding system used to analyze the structure and design of Twitter and Flickr accessed on the mobile devices is located in Appendix B. Based on the results of my data collection, I drew conclusions regarding the applicability of McLuhan’s ideas to social
media, such as Twitter and Flickr, accessed on mobile devices (p. 13). The coding system through which I determined the applicability of McLuhan’s ideas is located in Appendix C.

I chose to apply Twitter and Flickr accessed on mobile devices to McLuhan’s notions of the medium is the message, hot and cool media, and Laws of the Media because these are three of his most popular and controversial concepts. As noted by Levinson (2001), McLuhan is most famous for his idea that the medium is the message (p. 35). Not only have the medium is the message, hot and cool media, and Laws of the Media been criticized by intellectuals such as van Koten (2009) and Sturrock (1989), but scholars such as Levinson (2001) and Logan (2010) have applied these concepts to media including the Internet. The results of this study further contribute to the evaluation of McLuhan’s ideas.

Content

According to Creswell (2009), “qualitative validity means that the researcher checks for the accuracy of the findings” (p. 190). In order to assess “the accuracy” (p. 190) of my findings, I accessed the trending topics and Tweets analyzed for this study using my Twitter account on my computer. I did this so that I could copy and paste the content into saved Microsoft Word documents. In doing so, I was able to access the data at a later date, as Twitter is constantly being flooded with new information and the availability of past tweets is limited. Therefore, if I wanted to analyze the content of a particular tweet at a later date, I may not have had access to it. Saving the tweets on my computer allowed for me to make “repeated observations” (p. 199). Making “repeated observations” enhances the internal validity of the study (p. 199).

In terms of content on Twitter, I analyzed 100 tweets that pertained to the first topic listed under “Trends” (“Twitter,” 2013, Trends section) each day from July 3, 2103, to July 9, 2013. “Trends are determined by an algorithm,” which “identifies topics that are immediately popular”
According to one of Twitter’s developer advocates, “trending topic responses are returned in the order of most trending to least trending” (“Trending topics order,” 2011, para. 2). In addition, the “Trends” I analyzed were “tailored” (“FAQ about trends,” 2013, para. 2). “Trends” that are “tailored” are defined “based on who you follow and your location” (para. 2).

Under each “Trend” analyzed, I selected the first 100 tweets that were labeled “Top Tweets” (“Twitter,” 2013, Top Tweets section). “Top Tweets” are “popular Tweets that many other Twitter users have engaged with and thought were useful” (“FAQs about top,” 2013, para. 1). According to Twitter’s website, “We’ve built an algorithm that finds the Tweets that have caught the attention of other users. Top Tweets will refresh automatically and are surfaced for popularly-retweeted subjects based on this algorithm. We do not hand-select Top Tweets” (para. 2). That being said, on July 3, 2013, and July 8, 2013, there were fewer than 100 tweets listed as “Top Tweets” (“Twitter,” 2013, Top Tweets section). On these days, I selected the first 100 tweets listed under the “All Tweets” option for the trending topics (“Twitter,” 2013, All Tweets section). Through my data collection, I obtained a variety of opinions, comments, pictures, and links.

It was essential that my collection of trending topics and their corresponding Tweets take place at the same time (9:00 pm) each day in order to maintain consistency, as trending topics can change throughout the course of a day. Collecting the data at the same time each day allowed me to obtain a random sample of tweets. Obtaining a random sample of tweets enhances the reliability of the research, as it rules out any biases or variances in the data selection process (Creswell, 2009, p. 190). As Creswell (2009) states, “qualitative reliability indicates that the researcher’s approach is consistent” (p. 190). Once I made “repeated observations” (p. 199),
I coded and interpreted the data. The coding system that I used to analyze this data is located in Appendix D.

Although I used my computer in collecting the tweets, I compared the structure of the Twitter app and the ways in which the differences in screen quality affected the display of the social medium and its content on the iPad and the iPod touch. In order to rule out any variances that could potentially distort my data collection, I maximized the brightness of each mobile device. In addition, both the iPad and the iPod touch were purchased in mint condition. Therefore, neither of the devices contained any scratches on their screens.

Regarding content on Flickr, I selected the top 10 subscribers that Flickr recommended to me upon signing up for the service. According to a customer care representative at Flickr, the subscribers that the social medium recommends to people when they first sign up are based on “a bit of luck” (Jane, 2013, para. 2). As the customer care representative stated, “To keep your[r] information completely private any real suggestions on our part are random selection” (Jane, 2013, para. 3). I added the top 10 recommended subscribers as my contacts to gain access to “feeds of their images” (Stephens, 2006, p. 59). I not only analyzed the first 100 pictures that appeared when I selected to view the content uploaded by my contacts, but I also examined the comments, notes, descriptions, and tags made by Flickr subscribers regarding the pictures.

I accessed Flickr on the iPod touch by downloading the app. However, Yahoo has yet to create a Flickr app for the iPad. When I downloaded the iPod app on the iPad, the content was displayed in the same dimensions as it was displayed on the iPod touch. Thus, it did not fill up the entire screen of the iPad. While the app gave me the option of expanding the content to fit the iPad’s screen, the content became pixelated and distorted. Therefore, collecting data using Flickr’s app on the iPad would have defeated the purpose of the research, as I would not have
been able to adequately compare the ways in which each mobile device’s screen size and quality affected Flickr’s content. Consequently, I accessed Flickr through its website on the iPad. Flickr’s website fit the screen of the iPad and did not distort the content. I also used Flickr’s website on my computer to compile the various comments, notes, descriptions, and tags that I refer to in my results section.

My textual analysis of Flickr took place from July 3, 2013, to July 20, 2013. I was able to access the entirety of the pictures and comments that the subscribers made available for public viewing throughout this time period. This allowed me to make “repeated observations” (Creswell, 2009, p. 199) of the content I collected. Once I made “repeated observations” (p. 199), I coded and interpreted the data. The coding system I used to analyze this data is located in Appendix E.

**Researcher’s Role**

For this research, I functioned as a participant observer. According to Brennen (2013), participant observers “spend a lot of time watching and interacting” with the texts that they study (p. 170). In terms of researching the content of Twitter and Flickr, I served almost solely as an observer. The only time I interacted with those who produced the content was when I added the recommended Flickr subscribers as my contacts. I could add the subscribers to my contact list without their acceptance. However, through their accounts, they were able to see that I had added them to my list. Nevertheless, I did not use my full name as my username on Flickr. I also did not post a picture of myself. Therefore, I provided my contacts with little information.

While I served as mainly an observer when researching the social media’s content, I functioned as a participant when analyzing Twitter and Flickr as media accessed on mobile devices. I used the touchscreens of the iPad and the iPod touch to navigate the apps, as well as
Flickr’s website. In addition to serving as a participant observer, I brought my knowledge of social media and mobile devices to my research. For one, as a public relations graduate student, I have taken classes in which I have utilized social media such as Twitter. I also own multiple iPods. Thus, I have prior experience operating mobile devices.
CHAPTER FOUR: RESULTS

Introduction

According to Apple’s website, “The Retina display on iPad makes everything look crisp and lifelike. Text is razor sharp. Colors are vibrant. Photos and videos are rich with detail” (“iPad,” 2013, para. 2). This can be attributed, in part, to the notion that the iPad with Retina display has a screen comprised of over 3.1 million pixels (para. 2). In comparison to a high-definition television, the iPad (4th generation) has an additional one million pixels (para. 2). When taken as a whole, the number of pixels a screen contains determines the screen’s resolution (“Resolution,” 2013, para. 6). According to Merriam-Webster, resolution is defined as “a measure of the sharpness of an image or of the fineness with which a device (as a video display, printer, or scanner) can produce or record such an image” (para. 6). A screen with a higher resolution has a greater capacity to render “distinguishable the individual parts of an object, closely adjacent optical images, or sources of light” (para. 6). While the iPad with Retina display has a screen resolution of 2048 by 1536 pixels at 264 pixels per inch (“iPad design,” 2013, para. 2), the iPod touch (3rd generation) has a screen resolution of 480 by 320 pixels at 163 pixels per inch (“iPod touch (3rd generation),” 2010, para. 6).

According to J.D. Biersdorfer (1999), the more “information, in ones and zeros,” that is “used to represent a pixel (a single point in an image),” the greater the number of “individual colors and gray-scale levels” an “image” can contain (p. G11). One method of determining the possible range of colors a medium can produce is to compare it to the Standard Color Gamut, which “defines the image format parameters and values for HDTV” (Radio Communication Sector, 2002, p. 1). According to Dr. Raymond Soneira, president of DisplayMate Technologies Corporation, “to deliver accurate image colors for consumer photo and video content the display
must match the Standard Color Gamut” (“iPad and iPhone,” 2012, para. 2). As Soneira (2012) states, the iPad with Retina display “has a virtually perfect 99 percent of the Standard Color Gamut” (para. 16). When compared with other Apple products that do not have Retina display, such as the iPad (2nd generation) and the iPhone (4th generation), the iPad with Retina display has the capacity to exhibit 38% more of the Standard Color Gamut (para. 16). As Soneira (2012) notes, not only are screens that “match the Standard Color Gamut” more “accurate,” but they are also able to depict “more vibrant” colors (para. 16).

**Mobile Devices**

The difference in the color display capacities of the iPad (4th generation) and the iPod touch (3rd generation) was evident on Flickr. The picture “impact” by Tony Caelen (2013) shows a man standing next to a New York City taxi. On both the iPad and the iPod touch, the man’s coat looked orange. The color of the taxi, however, differed on the two mobile devices. On the iPad, the taxi appeared to be bright yellow. Yet, on the iPod touch, the taxi seemed to be more orange than yellow. Similarly, Rasidel Slika’s (2013) picture, “5B8A337s,” depicts a car displayed inside a building. On the iPad, the car’s coloring contained more shades of red, orange, and brown than on the iPod touch.

Additionally, in pictures that were black and white, more tones of gray were found on the iPad with Retina display. This was evident in “photo(26)” by Tony Caelen (2012). The picture portrays a building with a gate (Caelen, Photo(26)). Due, in part, to the concept that the iPad is capable of revealing more “gray-scale levels” (J.D. Biersdorfer, 1999, p. G11) than the iPod touch, a man was visible behind the gate in the picture on the iPad (Caelen, Photo(26)). On the iPod touch, the figure behind the gate was unidentifiable. The iPad’s display was also brighter.
This was particularly apparent in tweets with white backgrounds. When compared with the iPad, the white backgrounds on the iPod touch were lackluster and appeared grayer in color.

Additionally, the difference in the iPad and the iPod touch’s ability to render “distinguishable the individual parts of an object” (“Resolution,” 2013, para. 6) was evident in Rasidel Slika’s (2013) picture “DSC05183s.” In the picture, people are crowded around the Stanley Cup (Slika, DSC05183s). One man is waving his hand (Slika, DSC05183s). Such motion is made apparent by the flesh-colored blur that appears next to the man’s hand (Slika, DSC05183s). While the blur could be clearly seen on the iPad, it went almost unnoticed on the iPod touch. In this case, the iPad, which has a higher screen resolution, was able to better discern the “closely adjacent optical images” of the blur and the hand (“Resolution, 2013, para. 6). Similarly, in Rasidel Slika’s (2013) picture, “5B8A337s,” a “For Sale” sign is displayed on the floor next to a car. This sign could only be read on the iPad. On the iPod touch, the words blended together, making them illegible.

Furthermore, the larger size of the iPad’s screen allowed for a better perception of detail in pictures posted on Flickr. For example, NASA Goddard Photo and Video’s (2013) picture, “Aftermath of Colorado’s Most Destructive Wildfire,” depicts a map of Colorado. On the map, places such as Edith Wolford School and Cathedral Pines are identified (NASA Goddard Photo and Video, Aftermath of Colorado’s most destructive wildfire). On the small screen of the iPod touch, the names of these places were much more difficult to read. In addition, the picture “farewell oo,” which was taken by jegeor (2013), contains a sky with two birds in the background. While the birds are small, they were notable on the iPad. On the iPod touch, however, they were only noticeable upon close scrutiny. Even then, one of the birds was not
recognizable, as it looked miniscule and lacked detail. In fact, it appeared to be a mere spot in the sky.

What is more, text was much easier to read on the iPad. Not only was text on Twitter bigger and more spread out, but the text had sharper edges and was less pixelated on both Twitter and Flickr. The same was true of users’ profile pictures on Twitter and Flickr. Even though the pictures are small, they looked very clear and bright on the iPad. On the iPod touch, however, the pictures looked more blurry and dull. It was particularly difficult to distinguish facial features in some of the profile pictures. The difference in screen resolution was also evident in a picture of a Boeing aircraft, which crashed at San Francisco International Airport on July 6, 2013 (AFP/Getty Images, Asiana Airlines crash victim possibly hit by rescue vehicle). On the iPad, it was much easier to recognize the contents of the picture, including the title “Asiana Airlines Crash Victim Possibly Hit By Rescue Vehicle” (AFP/Getty Images, Asiana Airlines crash victim possibly hit by rescue vehicle). These words were well-defined on the iPad. Nonetheless, on the iPod touch, the words were virtually impossible to read. Even simple logos looked pixelated on the iPod touch. Such logos include @ABC’s, which consists of a black circle containing “abc” in white lettering (“ABC News,” 2013, Header section). Thus, due to its smaller screen size and inferior resolution, I found it necessary to lean closer to the iPod touch in order to gain a better comprehension of the pictures and text depicted on the screen.

**Flickr as a Medium**

I found the overall design of Flickr’s app and website to be very similar. Upon logging onto the website or opening the app, I was brought to a page containing my contacts’ names, as well as samples of their pictures (Yahoo!, Inc., Flickr). If I pressed the name of a particular contact, both the app and the website brought me to a complete list of the contact’s pictures,
which could be selected for viewing (Yahoo!, Inc., Flickr). One of the key differences between the app and the website was that the app only allowed me to view two comments posted beneath a picture (Yahoo! Inc., Flickr). If I wanted to read more comments, I had to select the “Read all” option, which is located directly above the comment section (Yahoo! Inc., Flickr). Alternatively, on the website, I could scroll to the bottom of the page to read as many as 20 comments (“Flickr,” 2013). The same was true of the descriptions posted under the pictures. Long descriptions, such as one posted under “Story Lab with Twitter’s Mark Luckie” by NASA Goddard Photo and Video (2013), could be read in their entirety on the iPad. On the iPod, I had to press an arrow in order to read more than a couple lines of the description (Yahoo! Inc., Flickr). In addition, on a single page, the website displayed a picture, its tags, and additional information including the number of people who have viewed the picture (“Flickr,” 2013). On the app, however, I had to select the “Information” icon to view details such as when the picture was taken (Yahoo! Inc., Flickr).

Furthermore, to navigate the app, I used icons located at the bottom of the iPod touch’s screen (Yahoo! Inc., Flickr). Alternatively, to navigate Flickr’s website, I selected words such as “Contacts” and “Explore” (“Flickr,” 2013, Navigation Section). In addition, while the “Search” option is located at the top right-hand corner of the website, on the app, I had to press an icon consisting of a pink and a blue circle before selecting the “Search” option (Yahoo! Inc., Flickr). Therefore, it was easier to navigate Flickr’s website on the iPad than it was to navigate Flickr’s app on the iPod touch. This can be attributed to two notions. For one, I found the use of words as navigation options to be more straightforward, as the different meanings of various icons were not always clear. For example, an icon of a globe brought me to a selection of pictures labeled “Interesting” on Flickr (Yahoo! Inc., Flickr). Alternatively, a globe icon on Firefox serves as an
“experimental add-on” through which “you simply click on the icon button to translate” a tweet into “another language” (Gratton, 2010, Twanslate Section). In this case, both media use the same icon. However, the icon is used for different purposes. Secondly, more information was displayed on the website than on the app. Thus, less navigation was necessary for me to acquire additional insight regarding the pictures.

Nevertheless, both the website and the app displayed one picture at a time on the screen. I had to swipe to the left on the iPod touch (Yahoo! Inc., Flickr) or press an arrow on the iPad (“Flickr,” 2013) in order to navigate to the next picture. In addition, both the app and the website allowed me to use the touch screens of the mobile devices to zoom and pan the pictures. When I zoomed in on a picture, only a section of the picture was displayed on the screen. Thus, I was able to get a closer look at that section. Nonetheless, in doing so, I removed the section from the context of the picture as a whole. In addition, if I zoomed in too much, many of the pictures became pixelated.

**Twitter as a Medium**

In terms of operation, Twitter’s app was easy to use. Much like Flickr’s app, I had to utilize icons instead of words for many navigational purposes (Twitter, Inc., Twitter). Most icons had meanings that were easily discernible. For example, an icon of a house brought me to my homepage (Twitter, Inc., Twitter). An icon of the head and shoulders of a person brought me to my profile, while an icon of a hashtag brought me to a page where I could choose to view trending topics (Twitter, Inc., Twitter). Using an icon of a quill, I could compose a tweet (Twitter, Inc., Twitter). Alternatively, using an icon of a magnifying glass, I could search for a particular Twitter user or topic (Twitter, Inc., Twitter). Such icons depict objects that are closely associated with the words for which they stand. The only significant difference that I noticed
between the app on the iPad and the app on the iPod touch was the location of the icons. On the iPad, the icons are located along the left-hand side of the screen (Twitter, Inc., Twitter (Version 5.8.2)). Alternatively, they are located on the top of the iPod touch’s screen (Twitter, Inc., Twitter (Version 5.8)).

**Flickr Content**

In terms of content on Flickr, the pictures studied varied greatly. Some pictures were taken of places, including Hong Kong, while others were taken of events, such as the Chicago Blackhawks’ celebration after winning the Stanley Cup. Additional pictures were taken of random occurrences, such as people walking down a street, or of objects, including homemade pottery. The pictures also varied in color. Some exhibited very vibrant colors, while others lacked variances in tone or were solely black and white.

The picture “5B8A7292_HDRs” by Rasidel Slika (2013) was manipulated through high-dynamic range imaging. According to Friedman, (2008), this sort of “technique” provides for a “far greater dynamic range of exposures than normal digital imaging techniques” (para. 1). High-dynamic range imaging helps photographers “to accurately represent the wide range of intensity levels found in real scenes, ranging from direct sunlight to the deepest shadows” (para 1). This is accomplished through the use of “processing software for tone-mapping” (para. 1). In Rasidel Slika’s (2013) picture, which is black and white, high-dynamic range imaging was used to make a shiny Cadillac stand out from a dull background comprised of pavement and a wall (5B8A7292_HDRs). The imaging also enhanced the contrast between the lighter and darker portions of the picture.

Similar pictures taken by Rasidel Slika (2013) of the Cadillac, including “5B8A7313_4_5sw” and “5B8A7301_2_3sw,” contain color and are not altered using high-
dynamic range imaging. Although Jurriaan Vogel (2013) commented that “The tones look pretty nice” (para. 1) in one of the colored versions of the picture, Nike_747 (2013) found the version manipulated through the use of high-dynamic range imaging to be “really stunning!” (para. 4). In addition, Focused by JG (2013) noted that one of the pictures that was not augmented looked “magazine style” (para. 2). While the comments do not indicate that the use of high-dynamic range imaging changed the meaning of the picture, the “technique” (Friedman, 2008, para. 1) made the picture look more like a piece of art, as opposed to an ad in a magazine.

Superficial Comments

One theme uncovered during the textual analysis is the relatively superficial nature of many comments. Such comments contain one or two words that do not give great detail as to what the subscribers took away from the pictures. They include “Awesome!” (Pyrrhos, 2013, para. 2), “Nice” (LeoRiquelme, 2013, para. 1), and “Excellent shot” (PinusDef, 2013, para. 12). Other subscribers solely posted a smiley face (Corrales, 2013, para. 3) or exclamation points (Michail L., 2013, para. 1). Accordingly, even though Flickr allows subscribers to write long paragraphs in their comments, they chose to keep their comments short. In fact, several people posted comments shorter than 140 characters, which is the limit on Twitter. Therefore, many of the subscribers did not demonstrate the heightened use of “cognitive resources devoted to message construction,” which Walther (1996) posits can result from the “lack of physical cues” granted by forms of computer-mediated communication (p. 22), such as Flickr.

Nevertheless, other subscribers made comments about the use of focus, perspective, and color in a variety of pictures. Such comments include “the color is really wonderful” (sakura love, 2012, para. 5), “I like this urban shot, with its differents levels of perspective” (ZOoM@fr, 2013, para. 1), and “Excellent focus and composition!” (H.L. Tam, 2013, para. 4). These
comments, however, lack substance, as they do not explain how the color, perspective, or focus affects the various meanings of the pictures. Only a select number of comments gave such an explanation. For example, regarding a picture that depicts the phrase “death is free” in graffiti (hugo poon hp, “Death is free”), Ian Smith (Studio 72) commented, “The muted colour of the scene adds so much more to the message” (Ian Smith (Studio 72), 2013). In addition, sohel safiqul islam (2012) noted that an “enigmatic effect comes out, possibly due to shutter speed!” (para. 9) in a picture that portrays reflections on a glass wall (grey garden, Last night in Sai Gon).

Sentiment

A second theme discovered in the textual analysis is sentiment. Several comments studied indicate that subscribers encountered a diversity of sentiments when viewing the pictures. Once again, many of these comments are short and lack detail. Such comments include “Nice story” (Corrales, 2012, para. 1) and “fantastically evocative” (desertdragon, 2012, para. 5). In other cases, subscribers posted more expressive comments. For example, in regards to a picture that depicts a girl covering her face with her hands as she sits next to a person in a hospital bed (grey garden, Viva la vida), aquaviva212 (2013) commented, “This is heartbreaking” (para. 2). Another picture depicts two children playing in the water at a beach (Caelen, **). As Rob Hogenbirk (2012) posted, “this is what freedom looks like, I think” (para. 1). In addition, gerardnicolas#2 responded to a picture of a person walking down a dark staircase (Caelen, IMG_2703.jpg) by stating, “Wow… Very great. Almost disturbing. Also the different lightnings (and colours) are fabulous. This is beginning of a whole story (up / down, Six feet under, and underground life, etc.)” (gerardnicolas#2, 2012, para. 2). Nevertheless, these comments provide limited information regarding the messages the subscribers took away from
the pictures. For example, Rob Hogenbirk did not explain how or why the picture of the beach made him think of freedom.

Tangibility of Content

A third theme determined through the textual analysis is that a picture’s content can almost be tangible. For example, the picture “IMG_4661_2_3s” by Rasidel Slika (2013) depicts people standing on a glass floor of a tall building. Through the floor, the streets and cars far beneath the building can be seen. TheAndyMaan (2013) commented, “Awesome shot, makes my palms sweat just looking at the photo haha” (para. 2). Regardless of the notion that TheAndyMaan was not in the location depicted in the picture, the Flickr subscriber experienced a physical reaction to its content. In addition, in reference to a picture of a woman dancing at a nightclub (Slika, 5B8A7596s), rphilman1 (2013) commented, “She must really feel good about herself. This photo represents many emotions. :)” (para. 2). Even though the woman’s face cannot be seen in the picture, rphilman1 was able to develop a sense of how she felt based on her body language.

In another picture, a man is sitting by himself at a magazine stand (hugo poon hp, “Czarina is gone!”). To this, 1.jure (2013) noted, “Beautiful, I can smell the calmness :)” (para. 3). Even though one cannot actually detect the smell of a location based solely on viewing a picture, 1.jure was able to sense the aroma of the atmosphere surrounding the magazine stand. On a similar note, under the picture “lea/2012 la fin le 21.rire” by jegeor (2013), Parallel….. posted, “Ominous clouds… I could hear the loud thunder…well composed!” (Parallel….., 2012, para. 55), while I4ts (2013) commented, “Lovely water textures” (para. 6), regarding a picture titled “upper gooseberry falls” by Ron Layters (2013). Furthermore, a picture taken from great heights of a very long staircase (sizima, Stairs) elicited the response, “I feel dizzy :)” (Mang
Bokeh, 2013, para. 2). Thus, TheAndyMaan, I. jure, Mang Bokeh, I4ts, and Parallel….. each experienced a sensation or a physical reaction to a particular picture.

On another note, under Moby’s (2013) black-and-white picture, “not quite a bridge,” White space (2013) commented, “Wow the weather looks good; freezing here” (para. 1). The picture depicts a bridge with a river running beneath it (Moby, Not quite a bridge). Due to the notion that the picture is black and white, it is not possible to determine for certain whether or not the sun is shining, as the sky is merely gray (Moby, Not quite a bridge). Thus, the sky could be cloudless or it could be completely covered in clouds. In addition, one cannot determine the temperature of a location by merely looking at a picture. As the weather is not detailed in the description if the picture, White space made a speculation regarding the weather based on his interpretation of the picture’s content.

Nostalgia

Another theme evident in the comments on Flickr is nostalgia. In regards to a picture of Caine Road in Hong Kong (hugo poon hp, “Caine road”), tourtrophy remarked, “Interesting perspective. This road brings back a lot of my childhood memories. Thanks for sharing” (tourtrophy, 2013, para. 1). In addition, under a picture in which a pink filter partially covers a field and a blue sky with clouds (sizima, Untitled), The Happy Puffin (2012) commented, “I think of the 1970s when I see this photo” (para. 4). Alternatively, in response to a picture taken by hugo poon hp of a father carrying his daughter in Hong Kong (hugo poon hp, Father & daughter), Peter Mackey (2013) stated, “I remember carrying my daughters like that a long time ago” (para. 2). Accordingly, the content of these pictures prodded subscribers to think of the past.
Lack of Context

While some subscribers experienced nostalgia by looking at certain pictures, other pictures were found to lack context. Some subscribers deemed pictures with insufficient context to be confusing. For instance, in reference to the picture “swing,” which was taken by sizima (2013), hoainiemxua09x (2013) asked, “What is this?” (para. 1). Even though the picture is titled, as well as tagged as, “swing” (sizima, Swing), the ambiguity of the picture caused the Flickr subscriber to question its content. This can be attributed, in part, to the notions that the swing is dirty and that the picture was taken from a bird’s-eye view (sizima, Swing). Others considered pictures with little context to be appealing. A picture of a large and dirty wall with a door (sizima, Door) elicited the comment, “Great shot...leaves everything to the imagination!” (Lulybelle, 2012, para. 1). In addition, gara_g (2012) posted, “Love the simplicity of this image. Beautiful. Peaceful” (para. 6). Thus, the Flickr subscribers found the picture’s lack of context to be interesting and intriguing, rather than a detriment to its merit.

In addition, some Flickr subscribers discovered meaning in pictures with little context. For example, hugo poon hp took a picture at a march in Hong Kong that occurred in July 2012 (hugo poon hp, 1 July march). However, hugo poon hp did not provide information regarding who participated in the march or why people were marching. The only elements evident in the picture are a sign depicting a tank, which has a man hanging off of its gun, and the legs of a number of marchers (hugo poon hp, 1 July march). Regardless of the lack of context, Flickr subscribers found meaning in the picture. Peter Mackey (2012) commented, “Extremely emotional photograph Hugo. Well done” (para. 1), while tourtrophy (2012) posted, “What a shot! The legs and the drawing tell the whole story” (para. 2). Tourtrophy, however, did not
explain the premise of this story. Therefore, his version of the story could differ from another person’s interpretation of the picture.

On a similar note, in reference to a picture of a man staring downward while standing on a balcony (hugo poon hp, “Exit 出口”), tourtrophy (2012) stated, “Interesting use of focus. You have the guy to the right and the exit sign in focus. He must be thinking his exit strategy. Not one of Snowdon’s friend, is he?” (para. 1). In the picture, it is not clear that the man is staring at the exit sign or that he is planning an escape. Nevertheless, tourtrophy developed his own explanation regarding the scene depicted in the picture.

Reactions to Detail

An additional theme uncovered from the textual analysis is that subscribers had various reactions to pictures containing great detail. For example, regarding the picture “a clump of cotton grass” by Ron Layters (2013), itscosmicjim (2013) stated, “Crackin pic Ron, some nice detail here” (para 4). This comment merely acknowledges the notion that the picture is detailed. On a similar note, NASA Goddard Photo and Video (2013) uploaded the picture “Astronaut View of Fires in Colorado [detail].” Comments posted under this picture include, “Impressive shot!” (kadege59, 2013, para. 1), “Thanks for sharing this view,” (LeDoux, 2013, para. 2), and “The zoom is so close!” (Alexandre Dossin, 2013, para. 3). None of these comments concern the actual fires or their potential destruction. Instead, the comments regard the impressiveness of the picture captured by the camera.

Alternatively, NASA Goddard Photo and Video’s (2013) picture “Climate 365” depicts planet Earth. The picture is detailed in the sense that it also contains the statement, “FAILURE IS NOT AN OPTION” (NASA Goddard Photo and Video, Climate 365). According to The Third-Eye (2013), “The phrase is much much more powerful than this, or any other image or
representation” (para. 6). This comment indicates that The Third-Eye found the medium of text to be more influential than the medium of imagery in delivering the picture’s message. In addition, Amélie (2013) posted, “I wish I could do more for our earth than turning off the light and using my bicycle. Maybe Earth would be a better place without us” (para. 2). Such a comment demonstrates that Amélie found cause for contemplation in the content of the picture. Therefore, different forms of detail elicited different responses from Flickr subscribers.

Communication

An alternative theme unveiled from the textual analysis is communication between subscribers. Due to the notion that Flickr is a form of social media, many people posted questions for other subscribers to answer. For example, in reference to a picture of a woman standing in an oddly-shaped wooden building (Caelen, ***), John_Yu asked the photographer, Tony Caelen, “where’d you take that photo?” (John_Yu, 2013, para. 10). Another Flickr subscriber, pencilcaseblog (2012), responded, “This is taken in Belgium, Borgloon (a small village in Limburg!). I’ve been there myself, it was part of a temporary exhibition in open air. But it’s long gone now I think, which is a shame!” (para. 13). Tony Caelen (2013) verified this response (Re: ***, para. 15). In another instance, a Flickr subscriber posted, “great setup, what tripod are you using on the left?” (HarryV27, 2013, para. 2). The photographer, Rasidel Slika (2013), replied, “Calumet mini-tripod and you also need a head for it, I am using this one but would probably advise getting a more adjustable one Calumet tilt-head” (Re: IMG_9756_7_8s, para. 5).

In such instances, the Flickr subscribers were able to communicate with the photographers regardless of their locations. It also did not matter if the subscribers personally knew the photographers. If the pictures were made public and open to comments, subscribers
could interact with those who posted the pictures. In some cases, subscribers tried to expand their connection with the photographers beyond Flickr. For example, o l y (2011) commented to sizima, “I’m secretly hoping that we can even visit you and your studio.... that would be a very wonderful trip for us!” (para. 2). In terms of computer-mediated communication, this comment demonstrates o l y’s attempt to create a relationship that has the potential to result in “emotionally rewarding exchanges” (Walther, 1996, p. 8).

Titles, Descriptions, Notes, and Tags

Besides communicating with the photographers, Flickr subscribers could acquire information about particular pictures from titles, descriptions, notes, and tags. In general, the titles and tags referenced where the pictures were taken, what the pictures portrayed, and/or who took the pictures. For example, the tags listed under “sky” by sizima (2012) include, “sky,” “clouds,” “lake,” “tamakolake,” and “mobile” (“Sky,” Tags section). The tags listed under “mt. baldy” by Moby (2013) include, “Mt.,” “Baldy,” “Los Angeles,” and “California” (“Mt. Baldy,” Tags section). Such tags offer limited context regarding the pictures. In extreme cases, such as “Untitled” by sizima (2013), no tags, notes, or descriptions were posted.

What is more, notes were found on a minority of the pictures studied. The notes were solely accessible on Flickr’s website on the iPad (“Flickr,” 2013). They were not visible on Flickr’s app on the iPod touch (Yahoo!, Inc., Flickr). On the iPad, one note was placed on a plant in the picture “It’s been a long time” by prologuer (2012). The note was written by L’hort de la Lolo (2013), who stated, “love this!” In addition, Ron Layters’ (2013) pictures “trident du tacul” and “ice scream” contained notes that identified the names and heights of the mountain peaks shown in the pictures, as well as the placement of various mountain climbers.
While the notes, tags, and titles offered subscribers a limited amount of information, some photographers provided extensive descriptions of their pictures. Under many pictures, NASA Goddard Photo and Video posted press releases or lengthy narratives, as well as a description of Goddard Space Center. For example, the picture “Story Lab with Twitter’s Mark Luckie” depicts a man standing at a podium (NASA Goddard Photo and Video, 2013). Under the picture, NASA Goddard Photo and Video (2013) posted, “Twitter’s manager of journalism news, Mark Luckie, discussed the impact of Twitter on the news Thursday, July 11th, 11:30-1:00 in the building 3 Goett Auditorium at NASA’s Goddard Space Flight Center in Greenbelt, Md” (“Story lab,” Description section, para. 1). The description also provides information regarding Mark Luckie’s career (para. 2). Thus, not only does the description grant Flickr subscribers detailed information in reference to when and where the picture was taken, but it also presents background information about the man in the picture and the purpose of his visit to the flight center.

On a similar note, under a picture titled “mt. baldy,” a description detailed where Moby (2013) “grew up,” as well as why the Flickr subscriber ventured to the mountain (“Mt. Baldy,” Description section, para. 1). According to Moby (2013), upon moving from a location in Eastern United States, “i vowed to explore the weird and beautiful and baffling area around l.a. and top of my list (well, near the top of my list), was mt baldy” (para. 1). While NASA Goddard Photo and Video added links to websites containing additional information under many pictures, Moby presented a link to a Tumblr account, which offered a further description of Moby’s trip (“Moby’s Los Angeles,” 2013). Through the description of Moby’s past and the pictures Moby took when discovering new things in Los Angeles, I became more aware of Moby’s “self-
perceptions” (Walther, 1996, p. 23). As a result, I found Moby’s uploads more interesting, as I understood the intent behind Moby’s pictures. Thus, I felt as if I was a part of Moby’s journey.

Different Languages

Comments on Flickr were posted in many different languages, including Spanish, English, and French. Comments such as “Espectacular!!!” (JulioSanchezRosso, 2013, para. 7), which means “spectacular” in English, and “Fantastico” (Marquez, 2013, para. 8), which means “fantastic” in English, were not difficult to discern, as these Spanish words are very similar to their English counterparts. However, comments such as “¿Porqué la imagen se ve como si estuviera partida? tiene divisiones!!” (Creatid.will!!, 2013, para.3) were not as easy to translate. According to Google Translate, the English equivalent of this post is “Why the image looks as if it were split? has divisions!” (“Translate: Spanish,” 2013, para. 2). From this, I deduced that the more likely interpretation of the post is “Why does the image look like it was split? It has divisions!!” Alternatively, Google Translate successfully translated “un autre monde, beau..” (C Laurence, 2012, para. 9) to “another world, beautiful..” (“Translate: French,” 2013, para. 2).

Nevertheless, it translated "یحتاجون ألبعض بـ أن أؤمن ولـ كن!؟ .. { الاختقال } ثمّ فاعلتي مـن ليست،" (sadaam.atoom, 2013, para. 1) to “For not the Thagaavty of {Alantqaam} ..?!But I believe that some Ihhtaajohn?,,Crumb {eye}" (“Translate: Arabic,” 2013, para. 2).

Therefore, it is possible that people who do not know languages such as Arabic, and who do not have proper translators, will not know the meaning of many comments on Flickr.

Videos

Of the content studied, only NASA Goddard Photo and Video (2013) uploaded videos in addition to pictures on Flickr (“NASA Goddard Space Flight Center”). The videos portray phenomena such as the phases of the moon (NASA Goddard Photo and Video, Moon phase and
libration, 2013 [hd video]) and the movement of Hurricane Sandy (NASA Goddard Photo and Video, Tracking a superstorm [hd video]). The videos are relatively short, as some videos are between 30 and 45 seconds long, while others last for three minutes (“NASA Goddard Space Flight Center”). In addition, while some videos are silent, others contain instrumental music. The majority of NASA Goddard Photo and Video’s (2013) content, however, is pictures (“NASA Goddard Space Flight Center”).

**Twitter Content**

One theme found in the tweets analyzed for this study is the communication of breaking news. On July 6, 2013, #SFO was listed as the first trending topic at 9:00 p.m. (“Twitter,” 2013, Trending section). SFO stands for San Francisco International Airport. Around 3:00 p.m. on July 6, 2013, @DavidMuir (2013) tweeted, “#BREAKING from ABC station in San Francisco RT @abc7newsBayArea: Plane on fire at #SFO Boeing 777 operated by Asiana Airlines from Taipei” (para. 30). In addition, according to @WestWingReport (2013), “Boeing 777 crash San Francisco Intl. Airport (#SFO). Asiana Airlines plane. Witnesses: ‘Exploded, broke in pieces, engulfed in flame’ (KGO)” (para. 26). Regardless of the notion that Twitter only allows tweets to be comprised of 140 characters, @WestWingReport (2013) was able to convey a lot of information. Not only did @WestWingReport (2013) alert people about the Boeing aircraft crash at San Francisco International Airport, but @WestWingReport (2013) also provided a statement from a witness.

**Tactics**

@WestWingReport (2013) was able to convey a substantial amount of information in few characters through the use of abbreviations such as “Intl.” (para. 26). This five-character abbreviation stands for International, which takes up 13 characters. In addition,
@WestWingReport (2013) implemented incomplete sentences. For example, words such as “a” and “the” were omitted from @WestWingReport’s (2013) tweet in order to economize the use of characters. The use of abbreviations and omission of unnecessary words demonstrate Walther’s (1996) notion that users are often careful in “selecting their language” when utilizing computer-mediated communication (p. 22). Even though the tweets were not written in proper English, they remained comprehensible.

Throughout the day, Twitter was used to provide people with updates regarding the crash. Some of the updates were retweets. For example, @eyewitnessnyc (2013) tweeted, “RT @abc7newsbayarea: #BREAKING: First reports are that there were 290 passengers were aboard the Asiana Airlines flight that crashed at #SFO” (para. 16). Alternatively, approximately three hours later, @ABC (2013) tweeted, “Airplane that crashed in #SFO was carrying 141 Chinese, 77 South Koreans and 61 U.S. citizens, @ABC confirms” (para. 9). Thus, both original tweets and retweets were implemented as forms of news updates.

Others tweets provided links to news stories. For example, @CBS Pittsburg (2013) tweeted, “#BREAKING: FAA confirms airliner crashes on landing at #SFO: http://cbsloc.al/17WLjkF ” (para. 21). In addition, @WesleyLowery (2013) tweeted, “KTVU in Oakland reporting at least two dead, 61 injured in Boeing 777 crash at #SFO. http://www.ktvu.com/news/news/local/boeing-777-crashes-while-landing-sfo/nYfcx/..” (para. 14). While both @CBS Pittsburg (2013) and @WesleyLowery (2013) provided insight regarding the crash, the Twitter users also offered people ways of finding subsequent material. In such cases, the tweets functioned as semi-headlines. If people wanted short and informative reports on the crash, they could simply read the tweets. Consequently, if they were intrigued by
the tweets and interested in acquiring more details, they could select the links and read the news stories.

Some tweets that contained links, however, did not incorporate updates on the crash. On the contrary, they served merely as means for people to obtain additional information. For example, @WSJ tweeted (2013), “Follow our updates on the #SFO crash, including video, photos, and staff tweets, in our mobile-friendly stream: http://on.wsj.com/129HNYR” (para.11). In addition, @ABC (2013) posted, “Press briefing on the #SFO crash expected momentarily. Watch live at http://abcn.ws/live photo: @kgocameraman pic.twitter.com/mDfAmQRQ6” (para. 11). While @ABC (2013) posted a link to a picture in its tweet, other users chose to embed pictures in their tweets. For example, @base (2013) posted a picture of the aircraft following the crash.

Vague Breaking News

On July 7, 2013, tweets regarding the topic Nantucket were utilized to provide breaking news updates (“Twitter,” 2013). According to @BostonGlobe (2013), “BREAKING: Teresa Heinz Kerry, wife of US Secretary of State John Kerry, taken to Nantucket hospital with unspecified medical condition” (para. 2). What is more, @BostonGlobe (2013) posted, “Teresa Heinz Kerry is in critical but stable condition, hospital spokesman says http://b.globe.com/12QZHts ” (para. 6), while @JasonGraziadei (2013) tweeted, “Pilot George Riethof spotted Heinz on a stretcher being lifted into a Gulfstream on the tarmac at Nantucket airport http://www.ack.net/TeresaHeinzKerryHospitalized070713.htm …” (para. 4).

While these tweets provide validation regarding Teresa Heinz Kerry’s whereabouts from people such as the hospital spokesman and George Riethof, they offer less information than many of the tweets regarding the aircraft crash, as Kerry’s medical condition is left unspecified.
In addition, while @theblaze (2013) posted a picture of Kerry in his tweet (para. 13), the picture is not relevant to her hospitalization, as it merely depicts her and her husband talking and clapping at an event (Getty Images, John Kerry and Teresa Heinz Kerry during his ceremonial swearing in at the State Department February 6, 2013 in Washington, D.C.). Therefore, unlike the pictures that illustrated the aftermath of the Boeing aircraft crash, the picture of Kerry did not aid in my comprehension and visualization of the matter at hand.

Promotional Tweets

Although tweets regarding trending topics informed people about breaking news, they also served promotional purposes. The first topic listed as a “Trend” (“FAQ about trends,” 2013, para. 2) on July 4, 2013, at 9:00 p.m. was #BeyonceDance (“Twitter,” 2013, Trending section). This “Trend” was promoted by Pepsi (Trending section). In order to promote a “Trend,” a person or organization must create a Twitter Ads account (“Promoted Trends,” 2013, para. 1). A “Trend” that is promoted is “featured at the top of the list” of trending topics “for an entire day” (para. 3). Implementing its “Promoted Trend” (para. 1), @Pepsi (2013) tweeted, “Attention #BeyHive! Show us some sweet #BeyonceDance moves for a chance to WIN a trip to her show! More here: http://pep.si/1b85HBu ” (para. 26). The link brought me to a website, which outlines the details of the contest (“Pepsi pulse,” 2013, Dance for a Chance section).

Numerous Twitter users posted variations of @Pepsi’s (2013) tweet, as well as other tweets that @Pepsi posted. In many cases, users merely added other people’s usernames to the tweets. For example, @ceebee (2013) posted, “@peso516 ‘@pepsi: It’s a #BeyonceDance off! Show us your best moves & you could win a trip to #NYC to her show! http://pep.si/1b85Gxt’” (para. 87), while @JuLiBethSummers (2013) tweeted, “@melhunnie
Can you dance like @Beyonce? A chance to win tix to The Mrs. Carter Show World Tour in NYC! http://pep.si/17TWQER #BeyonceDance” (para. 36).

Other Twitter users simply retweeted @Pepsi’s posts. For instance, @Reyonce_ (2013) tweeted, “RT @pepsi: It’s a #BeyonceDance off! Show us your best moves & you could win a trip to #NYC to her show! More here: http://pep.si/1b85Gxt ” (para. 9). Consequently, many of the tweets studied under #BeyonceDance were reproductions of @Pepsi’s tweets. Not only was Pepsi’s website incorporated in numerous tweets, but users such as @RebecaRose (2013) and @bornbeyonce (2013) uploaded links to their contest submissions. As @bornbeyonce (2013) posted, “PEPSI WATCH THIS OKAY @pepsi @Beyonce @pepsi @pepsi http://www.youtube.com/watch?v=an5E-3xtg1M … #BeyonceDance” (para. 8). Therefore, while many of the tweets that provided links to stories for #SFO and Nantucket served as semi-headlines for news articles, the tweets for #BeyonceDance functioned as advertisements, as they enticed people to visit Pepsi’s contest website and create their own submissions.

Another promoted trending topic analyzed was #IndependenceEve (“Twitter,” 2013, Trending section). This hashtag was promoted by Newcastle Brown Ale (Trending section). In a tweet, @Newcastle (2013) posed the question, “What do you think you would’ve been doing on July 3rd, 1776 aka #IndependenceEve? Besides still being British of course...” (para. 1). Unlike tweets regarding Pepsi’s #BeyonceDance, which mainly revolved around Pepsi and its contest, many of the tweets posted under #IndependenceEve did not focus on Newcastle Brown Ale. Instead, Twitter users such as @JodiCali14m (2013), @Yeah_MyFlowSick (2013), @ni_phan0596 (2013), and @KillerBeeBack (2013) merely reposted the hashtag. The use of #IndependenceEve without mention of Newcastle Brown Ale may be attributed to the notion that the hashtag has no clear association with its sponsor. Alternatively, many people are familiar
with Beyoncé’s dance commercial for Pepsi. As @x_iHeartHeels (2013) posted, “Pepsi #BeyonceDance is the only commercial I don’t skip on YouTube” (para. 2). Although the link between #IndependenceEve and Newcastle Brown Ale may not have been clear, it was apparent that tweets for #IndependenceEve referred to the day before the fourth of July, as the fourth of July is Independence Day.

The same could be said for #turboview. Although the hashtag is sponsored by Verizon Wireless USA (“Twitter,” 2013, Trending section), the hashtag actually refers to a movie, which was released in mid-July. Therefore, many of the tweets under #turboview regarded the movie without mention of Verizon Wireless USA. For example, @hiyevette (2013) posted, “The cartoon movie? RT @John_E_Smoker: I might have to go see #turboview by myself. Boy that will be creepy” (para. 2). Others, such as @DreYamz (2013), used the popularity of the hashtag to promote their own agendas, which had nothing to do with Verizon Wireless USA or the movie Turbo. As @DreYamz (2013) posted, “#turboview Checkout @CooleyBlack EXCLUSIVE WWSMag FEATURE http://wwsmag.com/updates/cooley-black-chinese-and-champagne/ …” (para. 9). In this case, the hashtag was used to increase the exposure of the tweet.

Generally speaking, the content researched on Twitter and Flickr did not contain a plethora of social “cues” such as “voice inflections” and “gestures” (Walther, 1996, p. 104). In addition, besides smiley faces, the Twitter users and Flickr subscribers studied lacked “facial expressions” (p. 104). Yet, overall, the comments, notes, tags, videos, and pictures from Twitter and Flickr accessed on the iPad (4th generation) and the iPod touch (3rd generation) offered a variety of information to analyze regarding the applicability of McLuhan’s ideas of the medium is the message, hot and cool media, and Laws of the Media to social media accessed on mobile devices. The following chapter provides a discussion of this analysis.
CHAPTER FIVE: DISCUSSION

Through studying Twitter and Flickr on the iPad (4th generation) and the iPod touch (3rd generation), I was able to draw conclusions as to whether or not McLuhan’s notions of the medium is the message, hot and cool media, and Laws of the Media apply to social media, such as Twitter and Flickr, accessed on mobile devices. The answers to my research questions proved to be multifaceted.

The Medium is the Message

According to McLuhan (1964), “the personal and social consequences of any medium—that is, of any extension of ourselves—result from the new scale that is introduced into our affairs by each extension of ourselves, or by any new technology” (p. 7). Critics such as Wilbur Schramm deem McLuhan’s notion of the medium is the message to be erroneous. Through this study, however, I found that the medium played a more significant role than the content in determining “personal and social consequences” (p. 7).

Informal and Brief Communication

In 2006, two phenomena occurred in the world of social media: Twitter was established (Edosomwan, Prakasan, Kouame, Watson, & Seymour, 2011, p. 84) and Flickr was purchased by Yahoo (Graham, 2006, para. 10). Twitter now has over 200 million users (“New compete study,” 2013, para. 2), while Flickr has 87 million subscribers (Smith, 2013, para. 7). One “social consequence” (McLuhan, 1964, p. 7) of Flickr and Twitter is the production and consumption of communication that is informal and brief. In fact, Twitter has a 140 character limit. However, not every tweet studied contained 140 characters. Tweets by @JodiCali14m (2013), @Yeah_MyFlowSick (2013), @ni_phan0596 (2013), and @KillerBeeBack (2013), for example, contained solely the name of a trending topic. While Flickr does not limit comments to
140 characters, a significant number of messages studied were shorter than this limit. Such messages include “Awesome!” (Pyrrhos, 2013, para. 2), “Nice” (LeoRiquelme, 2013, para. 1), and “Excellent shot” (PinusDef, 2013, para. 12).

In addition, many of the social media users neglected to use proper English or correct errors in their writing. This is evident in kadege59’s (2013) comment, “Impressive shot!” (para. 1). In this comment, an extra space is located between the word “shot” and the exclamation point (para. 1). In addition, o l y (2011) posted, “i’m secretly hoping that we can even visit you and your studio.... that would be a very wonderful trip for us!” (para. 2). The Flickr subscriber refrained from capitalizing the “I” in “I’m,” even though the word begins the sentence.

What is more, incomplete sentences and abbreviations were frequently used on Twitter. This is evident in the tweet, “Boeing 777 crash San Francisco Intl. Airport (#SFO). Asiana Airlines plane. Witnesses: ‘Exploded, broke in pieces, engulfed in flame’ (KGO)” (@WestWingReport, 2013, para. 26). While the propensity to use abbreviations and incomplete sentences is intrinsic to the nature of Twitter, as it has a character limit, I found myself using abbreviations whenever possible in searching for content on both Twitter and Flickr. In fact, I constantly looked for ways to reduce my use of the keypads on the mobile devices’ touch screens. This is due to the notion that the iPod touch, in particular, has a small screen that makes typing difficult. para. 2). As 60% of Twitter users access the social medium on mobile devices on a monthly basis (“New compete study,” 2013, para. 2), it is not surprising that people use such informal and brief language in their communication. Therefore, not only do the social media foster informal and brief communication, but the mobile devices do as well.
Content vs. Medium

Many of the photographers on Flickr provided little context regarding their pictures. For example, the picture “Untitled” by sizima (2013) was not accompanied by any tags, notes, or descriptions. In addition, Tony Caelen (2012) named several pictures, such as one depicting two children playing at a beach, “***.” While communication on Flickr and Twitter was often brief or lacked context, this did not necessarily mean that the content was insignificant. On the contrary, certain Flickr subscribers experienced sensations or developed nostalgia when viewing pictures. L.jure (2013), for instance, claimed to be able to “smell the calmness” regarding a picture of a man sitting at a magazine stand (para. 3). Others found sentiment in pictures. Aquaviva212 (2013) described a picture of a girl covering her face with her hands, while sitting next to a person in a hospital bed, as “heartbreaking” (para.2). In addition, breaking news, such as the Boeing aircraft crash at San Francisco International Airport and the hospitalization of Kerry, was disseminated on Twitter. However, due to Twitter’s 140 character limit, many users relied on links to news articles or pictures to offer people extra contextual information.

On the one hand, breaking news such as the aircraft crash is important information. In addition, pictures on Flickr proved to evoke emotions in viewers. On the other hand, none of the tweets or comments studied indicated that the content of the social media established “new scale” (McLuhan, 1964, p. 7) in users’ lives. Therefore, the social media played a more significant role than the content in producing “personal and social consequences” (para. 7). One “consequence” (para. 7) was the ability to constantly remain informed. On Flickr, subscribers tracked the activities of NASA Goddard Photo and Video, as well as the travels of Moby. On Twitter, users followed breaking news stories. The use of Twitter to follow news is especially evident in retweets. As @eyewitnessnyc’s (2013) posted, “RT @abc7newsbayarea:
**#BREAKING**: First reports are that there were 290 passengers were aboard the Asiana Airlines flight that crashed at #SFO” (para. 16). Through Twitter, @eyewitnessnyc (2013) not only gained information about the aircraft crash, but @eyewitnessnyc also shared the information with its followers so that they too could remain up-to-date (para. 16).

Advertising

Twitter and Flickr also produced “consequences” (McLuhan 1964, p. 7) in regards to advertising. This is evident in the use of “Promoted Trends” (“Promoted Trends,” 2013, para. 2) by organizations such as Pepsi, Verizon Wireless USA, and Newcastle Brown Ale. Through such trends, not only were tweets such as “Attention #BeyHive! Show us some sweet #BeyonceDance moves for a chance to WIN a trip to her show! More here: http://pep.si/1b85HBu” (@Pepsi, 2013, para. 26) exposed to millions of people, but feedback was also received from consumers on a global scale. For example, @BreVsSelf (2013) tweeted, “@HannahRaftery1: Pepsi made the best possible decision when they made their promotion the #BeyonceDance” (para. 12), while @power_crystals (2013) posted, “I just bought a Pepsi and its filled with broken glass and a greasy substance? #BeyonceDance” (para. 4). Alternatively, on Flickr, people promoted their own pictures by making them available for public viewing. Subscribers also had the opportunity to join “groups” (Stephens, 2006, p. 58) where they could network and potentially be discovered.

Therefore, the results of this study are consistent with Logan’s assertion that Twitter can be used to “promote something to the general Twitter community” (p. 266). The results are also consistent with the Pew Internet study, which determined that 74% of “cultural institutions such as museums, arts organizations, and performers” (Thomson, Purcell, & Rainie, 2013, para. 3) use social media including Twitter to “engage with audience members,” “get feedback from the
public” (para. 16), and drive “website traffic” (para. 20). Although Pepsi and Verizon Wireless USA are not “cultural institutions” (para. 6), they used Twitter to try to drive “website traffic” (para. 16), as they posted links in their tweets.

Media as Content

In stating that the medium is the message, McLuhan (1964) contends that “the ‘content’ of any medium is always another medium” (p. 8). I found this statement to be valid. For example, Flickr is comprised of text, videos, and pictures, which are media. Twitter is also comprised of media including text, pictures, and hyperlinks. Therefore, while McLuhan’s notion of the medium is the message has been highly criticized, as well as misunderstood by scholars including Lieberman, my research demonstrates that the concept is applicable to social media such as Twitter and Flickr accessed on mobile devices. Not only did Twitter and Flickr develop “new scale” (p. 7) regarding communication, information, and advertising, but the mobile devices provided me with access to the social media at any time and in virtually any location.

Hot and Cool Media

According to McLuhan (1964), print has a “specialist intensity” that “unifies spaces horizontally” (p. 23). Thus, printed text is considered hot (p. 23). In addition, McLuhan deems the photograph to be an example of a hot medium, as it provides people with a “high definition” picture (p. 22). Following McLuhan’s examples, one could surmise that Twitter and Flickr are hot media, as they are comprised of both pictures and text. Although Flickr has been described as “an image-hosting online community” (Stephens, 2006, para. 58), text is implemented in the comments, notes, tags, titles, and descriptions that accompany the pictures. On a similar note, while the majority of content studied on Twitter was comprised of text, pictures such as one that depicted the Boeing aircraft crash were also found on the social medium.
Nevertheless, as forms of computer-mediated communication, Flickr and Twitter must be accessed on screens, such as those of mobile devices or computers. According to Levinson (2001), computers aerate “the hot legacy of the printed word” by bringing forth “the cooler currents of words in motion on screens” (p. 109). Taking Levinson’s statement into account, one could assume that mobile devices make pictures and text on Flickr and Twitter cooler.

Hot

Due to advancements in technology, such as the Retina display on the iPad (4th generation), screens can depict images that are more “accurate” and “vibrant” (Soneira, 2012, para. 16) than in the past. This is evident in the difference in color of the Taxi in Tony Caelen’s (2013) picture, “impact,” on the iPad and the iPod touch. It is also apparent in Twitter’s white background, which was brighter on the iPad. In addition, on the iPad with Retina display, text was sharper, less pixilated, and more defined. This made it easier to read. Thus, the iPad’s Retina display caused a rise in the temperature of the screen.

Cool

According to McLuhan, a hot medium does not require users to “fill in” as much missing information as a cool medium (McLuhan, 1964, p. 23). This is due to the notion that hot media provide users with ample amounts of information (p. 23). While Flickr and Twitter’s content appeared to be hot, as it was sharp and vivid on the screen of the iPad with Retina display, the social media themselves were cool. For instance, Twitter’s 140 character limit compelled users such as @WestWingReport (2013) to use abbreviations in order to disseminate as much information as possible. While I was immediately able to identify commonly known abbreviations such as “Intl.,” I had to look up the meanings of other abbreviations including SFO. I also had to insert words such as “a” and “the” when reading tweets that did not
implement complete sentences. Such tweets include, “Boeing 777 crash San Francisco Intl. Airport (#SFO). Asiana Airlines plane. Witnesses: ‘Exploded, broke in pieces, engulfed in flame’ (KGO)” (@WestWingReport, 2013, para. 26). While this message is comprehensible, I found it choppy and more difficult to read than posts that contained complete sentences. Therefore, the use of abbreviations and incomplete sentences made Twitter cool, as I had to “fill in” (McLuhan, 1964, p. 23) missing information.

In other cases, 140 characters were not sufficient for Twitter users to complete their messages. For example, in addition to news updates, users such as @CBS Pittsburgh (2013) provided links to articles or pictures in their tweets. According to Levinson (2001), links “comprise a quintessential case of a cool system,” as links make “text interactive” (p. 116). As opposed to @CBS Pittsburgh (2013), users such as @WSJ (2013) did not post news updates in their tweets. Instead, they merely presented links, along with brief descriptions of the links, to pictures, live webcasts, or news articles. In such extreme cases, Twitter served as a mere porthole to other sources of media.

Alternatively, Flickr allows subscribers to write lengthy comments. Yet, many subscribers chose to keep their comments short and nondescript. While tourtrophy (2012) posted, “What a shot! The legs and the drawing tell the whole story,” tourtrophy did not explain the meaning of “the whole story” (para. 2). It was up to me to come up with my own interpretation. In addition, in order to portray as much information as possible on the small screens of mobile devices, Twitter and Flickr’s apps use icons instead of words for various navigational purposes. For example, an icon of a house brings users to their home pages on Twitter (Twitter, Inc., Twitter). In some cases, it was difficult for me to discern the meaning of an icon. For instance, when I selected a globe icon on Flickr, it brought me to pictures labeled
“Interesting” (Yahoo! Inc., Flickr). A globe icon is also used by Firefox to translate tweets (Gratton, 2010, Twanslate Section). Thus, the meaning of the globe icon on Flickr was not inherently evident. Flickr’s app also proved to be more difficult to navigate than Flickr’s website. For one, the “Search” option is located at the top right-hand corner of the website (“Flickr,” 2013). On the app, however, I had to press an icon consisting of two circles before selecting the “Search” option (Yahoo! Inc., 2013). Therefore, operating the app required more user activity.

Applicability

I agree with van Koten (2009) and Logan (2010) that the notion of hot and cool media is no longer applicable to society, as social media accessed on mobile devices are simultaneously becoming hotter and cooler. On the one hand, images and text were more defined on the Retina display on the iPad (4th generation). Although the text remained “in motion” on the iPad’s screen, which is “infinitely refreshable,” the screen did not aerate “the hot legacy of the printed word” (Levinson, 2001, pg. 109). On the contrary, the text and pictures depicted on the iPad were hot, as they were vivid and bright. Furthermore, Levinson (2001) argues that “we can see McLuhan’s thermostatic or reversal principle come into play, as the pervasive coolness of electronic texts creates a need for some scraps of detail, some warmth of image” (p. 117). However, the iPad with Retina display offered more than “some scraps of detail” or “some warmth of image” (p. 117). In fact, the iPad portrayed pictures that were high definition, life-like, and “vibrant” (Soneira, 2012, para. 16).

On the other hand, the iPad and the iPod touch implement touch screens, which are highly interactive. The small screens of the mobile devices call for an increase in navigation, as well as the use of icons, which do not always have straightforward meanings. This conflicts with
McLuhan’s (1964) notion that “The effect of hot media treatment cannot include much empathy or participation at any time” (p. 30). Accordingly, screens are becoming both hotter and cooler. The notion that a medium is becoming hotter, as well as more interactive, is also noted by van Koten (2009) in his assessment of high-definition television (p. 90). To further complicate matters, while text on Twitter was sharp and well defined when accessed on the iPad, the 140 character limit made the social medium cooler, as I had to “fill in” (McLuhan, 1964, 23) information when reading tweets that used abbreviations or contained incomplete sentences. The same was true of short and nondescript comments on Flickr.

Therefore, although I was able to identify certain aspects of the social media and the mobile devices as hot or cool, I found that the notion of hot and cool media does not apply to social media accessed on mobile devices when taken as a whole. This is due to the notion that such media are developing to become hotter in some ways and cooler in others. Although the concept of hot and cool media may have made sense in the past to scholars such as Levinson, I found Logan (2010) correct in stating that it “will not be a useful category for understanding new media” (p. 366).

**Laws of the Media**

In *Understanding Media: Extensions of Man*, Logan (2010) makes claims regarding the application of McLuhan’s Laws of the Media to “new media” (p. 40), including Twitter, Flickr, and mobile devices. Through my research, I was able to determine the validity of Logan’s claims. However, I also drew additional conclusions based on my findings. Although social media such as Twitter and Flickr accessed on mobile devices have yet to “reverse” into another medium (Levinson, 2001, p. 189), I was able to infer the nature of this “reversal” (McLuhan, 1964, p. 38) based on my study.
According to Logan (2010), “new media” (p. 6), such as Twitter, Flickr, and the iPod amplify “interactivity, access to information, and two-way communication” (p. 40). Through my research, I found this statement to be valid. Accessing Twitter and Flickr on the iPad (4th generation) and the iPod touch (3rd generation) amplified interactivity, as I had to use the touch screens of the mobile devices to navigate Twitter and Flickr’s apps, as well as Flickr’s website. In addition, the social media increased access to information, such as breaking news regarding the hospitalization of Kerry and the Boeing aircraft crash at San Francisco International Airport. Not only were updates regarding the two situations disseminated through tweets, but many of the tweets contained links to news articles that offered users additional information.

Furthermore, both Flickr and Twitter amplified two-way communication. On Flickr, subscribers were granted the opportunity to ask other subscribers questions regarding uploaded pictures. This was evident when John_Yu (2012) asked Tony Caelen, “where'd you take that photo?” (para. 10). Pencilcaseblog (2012) answered John_Yu’s question by stating, “This is taken in Belgium, Borgloon (a small village in Limburg!). I've been there myself, it was part of a temporary exhibition in open air. But it's long gone now I think, which is a shame!” (para. 13). Tony Caelen (2012) also posted a response to confirm Pencilcaseblog’s statement (para. 15).

In addition, when @Pepsi (2013) tweeted, “Attention #BeyHive! Show us some sweet #BeyonceDance moves for a chance to WIN a trip to her show! More here: http://pep.si/1b85HBu” (para. 26), @bornbeyonce (2013) posted, “PEPSI WATCH THIS OKAY @pepsi @Beyonce @pepsi @pepsi http://www.youtube.com/watch?v=an5E-3xtg1M … #BeyonceDance” (para. 8). Therefore, both Flickr and Twitter provided users with opportunities to participate in two-way communication. In cases such as @bornbeyonce’s (2013), the
communication occurred between a Twitter user and an organization. As Pepsi is a large organization, it is likely that @bornbeyonce does not know the person in charge of Pepsi’s Twitter account.

Similarly, people who post comments on Flickr do not have to be acquaintances with the photographers outside of the social medium in order to interact with them. I was able to add 10 subscribers as contacts even though I did not know them personally. In some cases, I did not know the contacts’ full names. For example, prologuer only provided the name sally. In addition, Ron Layters did not offer a name besides a username. Thus, the person in charge of Ron Layters’ account may not actually be named Ron Layters. Not only did Flickr and Twitter amplify two-way communication, but the social media promoted communication among possible strangers.

Moreover, as was noted in the “Advertising” section of this chapter, I found that Flickr and Twitter accessed on the mobile devices amplified marketing. While Logan (2010) noted that Twitter can be used to “promote something to the general Twitter community” (p. 266), he did not include marketing in his list of elements amplified by “new media” (p. 6). However, I found that marketing opportunities were significantly amplified by Twitter and Flickr. Not only did my contacts on Flickr showcase their pictures, but NASA Goddard Photo and Video (2013) provided descriptions of Goddard Space Center, as well as information regarding events that the center hosted. For example, under a picture of a man standing at a podium (NASA Goddard Photo and Video, Story lab with Twitter's Mark Luckie), NASA Goddard Photo and Video (2013) posted, “Twitter’s manager of journalism news, Mark Luckie, discussed the impact of Twitter on the news” (“Story lab,” Description section, para. 1).
In addition, NASA Goddard Photo and Video (2013) showcased many of the space center’s capabilities in its content. One video depicted the movement of Hurricane Sandy (NASA Goddard Photo and Video, Tracking a superstorm [hd video]), while a picture provided a detailed look at smoke from fires in Colorado (NASA Goddard Photo and Video, Astronaut view of fires in Colorado [detail]). On Twitter, the amplification of marketing was evident in the use of “Promoted Trends” (“Promoted Trends,” 2013, para. 2) by Pepsi, Newcastle Brown Ale, and Verizon Wireless USA. Due to the notion that Twitter has over 200 million users worldwide (“New compete study,” 2013, para. 2), the use of such trends allowed the organizations to market to people on a global scale.

Law Two

According to Logan (2010), “new media” such as Twitter and Flickr render mass media obsolete (p. 40). This notion was indicated in @ellenlynch’s (2013) post, “Just tried to see if any of the news stations had info on the #SFO plane crash. Of course they don’t, you win again Twitter” (para. 29). In addition, while entire news stories could not be contained in 140 characters, Twitter users such as @ABC (2013) and @WSJ (2013) directed people to websites, which are also considered “new media” (Logan, 2010, p. 40). Thus, tweets did not direct users to forms of mass media such as newspapers or television stations.

Nevertheless, this study was limited to a textual analysis of Twitter and Flickr. It did not compare the use of “new media” (p. 40) to the use of mass media. As a result, I cannot say for certain whether or not Logan is correct. On the one hand, Pepsi and Verizon Wireless USA still utilize mass media for purposes of advertising. For example, Beyoncé’s dance commercial, which was referred to in numerous tweets, was aired on television. On the other hand, organizations are also turning to Twitter and Flickr to showcase their pictures and products.
While I cannot conclude whether or not social media are more “dominant” (Logan, 2010, p. 375) than mass media in today’s society, my research demonstrates that Twitter and Flickr are vastly popular for several reasons. Not only do millions of people use the social media to communicate with others and to gather information, but organizations also use the media to “get feedback from the public” (Thomson, Purcell, & Rainie, 2013, para. 16) and to drive “website traffic” (para. 20).

However, when researching the iPad and the iPod touch, I found that mobile devices are rendering laptops obsolete. According to DisplaySearch, which is a part of NPD Group, Inc., in “North America, tablet PC shipments surpassed notebook PC shipments in 2012” (“Tablet PC market,” 2013, para. 3). In addition, a study conducted by Google revealed that, in the United States, the United Kingdom, Germany, Japan, and France, more citizens “now have an internet-capable mobile device than have a desktop or laptop computer” (Carmichael, 2012, para. 3). For example, in the United States, 76% of the population owns mobile devices, while 68% own desktops or laptops (para. 3).

In researching social media for my study, I found that social media accessed on mobile devices have not rendered face-to-face communication obsolete. It is most likely that social media will never accomplish this feat. Nevertheless, social media have become very popular forms of communication in today’s society. According to Jasmine Fowlkes (2012) of USA Today, “A study conducted for online casino Yazino found that one in four people spend more time socializing online, via sites such as Facebook and Twitter, than they do in person” (para. 4). As Hussein Chahine, founder of Yazino, states, “Some people are as used to seeing their friends online avatar as they are their face” (“One in four,” 2010, para. 8). According to Chahine, “People increasingly prefer quick and frequent engagement with instant updates on news than a
prolonged chat” (para. 10). Such “frequent engagement” (para. 10) is possible though Flickr and Twitter, as the social media can be accessed at any time and in any location on mobile devices. Twitter also provides “instant updates on news” (para. 10).

Law Three

As Logan (2010) notes, “new media” effectively “retrieve community” (p. 40). This is evident in the notion that Flickr subscribers can create “groups” and “image pools” (Stephens, 2006, p. 58). Through such “groups” and “image pools” (p. 58), subscribers can choose to share a multitude of pictures with friends and family, as well as with other subscribers throughout the world. More importantly, however, I found that Twitter and Flickr accessed on mobile devices retrieve portability. This coincides with Logan’s (2010) arguments that “new media” increase “access to information” and can be “portable” (p. 223). As breaking news updates are released on Twitter, a person no longer needs to sit in front of a television, buy a newspaper, or turn on a computer to gain information. On the contrary, Flickr and Twitter can be accessed on devices as small as the iPod touch, which can fit inside a person’s pocket. Wherever that person travels, he or she has access to breaking news updates on Twitter, as well as “image pools” on Flickr (p. 58).

Law Four

“New media,” Logan (2010) posits, “reverse into hyperreality” (p. 40), as well as “information overload” and “deception” (p. 235). Although Flickr and Twitter accessed on mobile devices have yet to reverse, I did not find signs that they will reverse into “hyperreality” (p. 40) or “deception” (p. 235). On the one hand, some pictures uploaded on Flickr do not depict reality. The picture “Untitled” by sizima (2013) has a pink filter covering a portion of the picture, while “5B8A7292_HDRs” by Rasidel Slika (2013) implements highdynamic range
imaging to make a car stand out from the background. However, sizima (2013) tagged “Untitled” as “Pixlr-o-matic” (“Untitled,” Tags section). Pixlr-o-matic is used to “Turn your photos into cool looking vintage and retro snaps” (“Pixlr-o-matic,” 2013, para. 1). In addition, Rasidel Slika (2013) tagged “5B8A7292_HDRs” as “hdri,” which stands for high-dynamic range imaging (“5B8A7292_HDRs,” Tags section). Jegeor (2012) also uploaded several pictures that appeared to be manipulated, including “crous.” Jegeor (2012) tagged many of these pictures, including “crous,” as “abstract” (“Crous,” Tags section). Although the pictures do not depict reality, the tags assigned to them indicate that the Flickr subscribers were not trying to be deceptive.

That being said, I found signs of information overload in my study. While browsing a trending topic on Twitter, it was not uncommon for 20 additional tweets to be posted within seconds of selecting the topic. In addition, each of my contacts on Flickr had over 100 pictures available for public viewing. For half of my contacts, this number exceeded 1,000. Rasidel Slika (2013), for example, uploaded 9,851 pictures. A number of pictures were accompanied by over 50 comments, as well as various tags and descriptions. Therefore, I experienced visual and textual information overload when researching Twitter and Flickr.

According to research conducted by MyLife.com, people “are becoming overwhelmed by the increasing number of social networks and email accounts they manage” (Brooks, 2010, para. 2). As the study reveals, “more than 50 percent of the online users surveyed have either taken or have considered taking a ‘vacation’ from social networking in the past year” (para. 2). This may be attributed to the notion that over 40% of those studied have more than one social media account (para. 3). In addition, “the average adult manages 3.1 email addresses” (para. 3). Other factors include “irrelevant updates and lack of time” (para. 2). Nevertheless, the majority of
people studied indicated that they were “afraid of what would happen if they were to step away for a while” from social media (para. 6). In fact, “nearly 60 percent of those surveyed experience anxiety as a result of missing an important event or status update if they don’t monitor their social networks” (para. 6).

Due to Logan’s (2010) statement that “new media” reverse into “information overload” (p. 235), I believe that mobile devices will develop systems that allow for the filtration of information disseminated through social media. Such filtration systems would be customizable. Each user would determine what updates he or she receives. For example, by designating key words, a user could choose to receive alerts only for information that pertains to particular topics. The person could also designate certain social media users as priorities. If the people labeled as priorities create posts, or if posts are created about them, the user would be notified. All other posts would be filtered in order to limit the number of updates a person receives.

Therefore, people would be able to take a social media “vacation” (Brooks, 2013, para. 6), while remaining informed regarding the most pertinent and important matters. People could still choose, however, to individually access and browse social media apps. They would also be able to turn the filtration system on or off at any time if they experience too much “anxiety” about “missing” a “status update” (para. 6). In addition, the filtration system would include software that would provide users the ability to respond to all messages on a single screen. For example, a person could reply to a tweet or a Facebook post without having to select an app or navigate through different screens or tiles, as is necessary on the Nokia Lumia 920 (“Nokia Lumia 920,” 2013, para. 1). Only pertinent messages would be listed on the screen. This would make the process of responding to e-mails and posts less overwhelming. Consequently, the system would grant mobile device users greater control over the information they receive.
As McLuhan (1964) argues, media are likely to experience “reversals or break boundaries” (p. 39) when they undergo the process of “cross-fertilization with another system” (p. 39). The filtration system would be a “cross-fertilization” (p. 39) of social media accessed on mobile devices with the mosaic aspect of the press system, which can “‘color’ events by using them or by not using them at all” (p. 204). According to McLuhan (1964), the press uses mosaics to display “multiple information items” on a single “sheet” (p. 204). McLuhan (1964) notes that “it is the daily communal exposure of multiple items in juxtaposition that gives the press its complex dimension of human interest” (p. 204).

In the case of the reversal of social media on mobile devices, the mosaic would not appear on “one sheet” (p. 204). Instead, it would appear on one screen. In addition, the mosaic would not have “communal exposure,” as each device’s filtration system would be tailored to the user. Thus, similar to the television, which “amplifies the visual, but in an ‘acoustic’ all-at-once sense” (Levinson, 2001, p. 190), the filtration system would utilize mosaics, but in a different manner than the press. The filtration system would also be cross-fertilized with the gatekeeping aspect of the press system. While “the printing regime” had “its own gatekeepers” such as “editors and publishers” (Levinson, 2001, p. 121), the mobile device users would serve as their own gatekeepers by deciding what information they receive.

As Albert Einstein once said, “Any intelligent fool can make things bigger, more complex, and more violent. It takes a touch of genius – and a lot of courage – to move in the opposite direction” (“Albert Einstein,” 2013, para. 1). Moving away from information overload is imperative in today’s society. In a Public Broadcasting Service interview, Charlayne Hunter-Gault asked Postman, “What images come to your mind when you, when you think about what our lives will be like in cyberspace?” (“Visions of cyberspace,” 1995, para. 7). Postman
responded, “the worst images are of people who are overloaded with information which they don’t know what to do with, have no sense of what is relevant and what is irrelevant, people who become information junkies” (para. 8).

**Weaknesses and Limitations**

While this study provides numerous insights into the applicability of McLuhan’s concepts of the medium is the message, hot and cool media, and Laws of the Media to social media accessed on mobile devices, the research has weaknesses and limitations. One weakness of this study is that it was up to me as the researcher to interpret the text. I could not contact all of the people who posted tweets, pictures, or comments to ask them about the meaning of their posts. Another limitation of this study is that I only researched Twitter and Flickr. Thus, many social media were left unexplored, such as Storify.

In addition, I only analyzed a select number of tweets, as well as “feeds” (Stephens, 2006, p. 59) of content from Flickr subscribers. In terms of Twitter, I solely analyzed tweets that pertained to seven trending topics. I collected the tweets from my account on my computer so that I could copy and paste the data into Microsoft Word documents in order to make “repeated observations” (Creswell, 2009, p. 199). After my data collection was complete, I came to a realization. I noticed that trending topics listed on my computer, as well as their corresponding tweets, do not always match those listed on my mobile apps. According to one of Twitter’s design leads, the trending topics and tweets “should match, but it is worth noting that things on Twitter move quickly so they may not always be perfectly in sync” (H, B., 2013). A second design lead at Twitter supported this notion. As the design lead noted, “In general, they should match up” (K, M., 2013). However, “One thing to keep in mind is that when a hashtag is trending, that means there are a lot of tweets associated with it” (K, M., 2013). As a result,
“depending on when you tap on the trend on each device, you may be seeing a different set of tweets come on to your device” (K, M., 2013).

Furthermore, the trending topics I analyzed were “tailored” to me (FAQ about trends, 2013, para. 1). As one of the design leads stated, these trends “are based on many factors about your account and device” (H, B., 2013). However, “Promoted Trends” are automatically “featured at the top of the list” (“Promoted Trends,” 2013, para. 2). “Promoted Trends” (para. 2) were analyzed on three of the days I collected data. Therefore, while accessing the tweets on my computer allowed me to make “repeated observations” (Creswell, 2009, p. 199), it threatens the reliability of the study. This is due to the idea that tweets regarding different trending topics are likely to contain different opinions, pictures, and comments.

However, the recognition that Twitter circulates information so rapidly that multiple devices may not always be “in sync” (H, B., 2013) is crucial, as it further emphasizes the point that the social medium is establishing “new scale” (McLuhan, 1964, p. 7) in society. Just as railroads greatly decreased travel time for people and goods, Twitter decreases the time it takes for people to receive news and other information. In fact, information is disseminated with such speed on Twitter that if a trending topic is not selected at the same instant on more than one device, the tweets that correspond with the topic may differ (K, M., 2013).

Although I also used my computer to look at the content of many comments, descriptions, and tags on Flickr, the content on the computer did not differ from the content on Flickr’s app. Nevertheless, my study of Flickr was limited, as my data collection was restricted to the accounts of the 10 Flickr subscribers recommended to me upon signing up for the service. It is possible that another person who creates an account on Flickr will receive a completely
different list of recommended subscribers. Therefore, his or her research may produce different results.

Conclusion

Through my research, I have concluded that McLuhan’s notions of the medium is the message and Laws of the Media are more applicable than hot and cool media to social media, such as Twitter and Flickr, accessed on mobile devices. The real significance of this study, however, is that it provides an in-depth, albeit small in scope, examination of how people communicate through computer-mediated means, which are popular in today’s society. It is imperative that people understand how communication is affected by technology. In “A Schoolman’s Guide to Marshall McLuhan,” John M. Culkin, S.J., states, “We shape our tools and thereafter they shape us” (p. 70). If this is the case, the more people understand media, the better they will become at envisioning evolution, which McLuhan (1964) argues, “takes place outside the organism” (p. 59). This can be attributed to the notion that he believes technologies to be extensions of the human body (p. 3).

In order to answer “questions” or “specialist problems” regarding media, McLuhan (2003) suggests presenting them to the “mass of untutored, non-specialist people” (p. 292). As McLuhan notes, “When a flashlight shines in your face you cannot see a thing. Now the specialist does this all the time; the flashlight of specialty shines in his face” (p. 293). Due to the notion that this study was limited to Twitter and Flickr accessed on the iPad (4th generation) and the iPod touch (3rd generation), it leaves many “questions” (p. 292) and areas of research unexplored. Future research could analyze other means of communication that are popular today, such as Facebook, or media that have yet to be developed. Additional research could determine whether or not other ideas posited by McLuhan, including “the global village” (Logan,
2010, p. 358), are applicable today. The point is to keep the conversation going by continuing to study media and the ways in which people use them to communicate.
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McLuhan’s Laws of the Media and Their Consequences Applied to the Internet

<table>
<thead>
<tr>
<th>Law</th>
<th>Consequence</th>
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<td>The Internet enhances interactive communication</td>
<td>Led to the challenge of central authority in places such as China</td>
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<tr>
<td>The Internet retrieves the radio, the television, and the telephone, as well as movie theaters and print</td>
<td>People can self-publish material such as books</td>
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<td>The Internet obsolesces “the middleman”</td>
<td>People can buy and sell stock online</td>
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<tr>
<td>The Internet reverses into…?</td>
<td>This has yet to be determined</td>
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*Figure 1.* The four Laws of the Media and their consequences in regards to the Internet. Material for chart was adapted from “Millennial McLuhan: Clues for Deciphering the Digital Age,” by P. Levinson, 1999, *The Chronicle of Higher Education*, 46, pp. B10-B11. Copyright 1999 by Chronicle of Higher Education.
APPENDIX B
CODING SYSTEM: MEDIA

The following questions were used to analyze Twitter and Flickr accessed on mobile devices as media:

1. How does the quality of the screen resolution affect the content on Flickr and Twitter?
2. How does the screen size of each mobile device affect the display of content on Twitter and Flickr?
3. How does Twitter’s limit of 140 characters affect the messages of tweets?
4. How easy is it to navigate Twitter and Flickr on the mobile devices?
5. How do the apps organize content for display?
6. How much information can be viewed on the mobile devices at once?
APPENDIX C
CODING SYSTEM: APPLICABILITY OF McLuhan’S IDEAS

The following questions were used in determining if McLuhan’s ideas of the medium is the message, hot and cool media, and Laws of the Media are applicable to Flickr and Twitter accessed on mobile devices:

Hot and Cool Media

1. Is Flickr a hot medium because it is comprised of pictures and text?
2. Do the screens of the mobile devices make content on Twitter and Flickr cooler?
3. Is Twitter a cool medium because it offers users only a certain amount of information, as messages are limited to 140 characters?

The Medium is the Message

1. How significant is the information disseminated on Twitter?
2. Are Tweets comprehensible even though they can only contain 140 characters?
3. Do the pictures on Flickr contain any messages?
4. Do the comments on Flickr indicate that subscribers gain meaning from the pictures, notes, comments, descriptions, and tags posted on the social medium?

Laws of the Media

1. What aspects of society do Flickr and Twitter enhance?
2. What older forms of media do Flickr and Twitter render obsolete, if any, and how?
3. What previous media do Flickr and Twitter retrieve?
APPENDIX D
CODING SYSTEM: TWITTER CONTENT

The following questions were used to analyze the content of the tweets:

1. What are people tweeting about?

2. How are hashtags used in tweets?

3. What tactics, such as abbreviations, are people using to get their messages across in no more than 140 characters?

4. How are retweets implemented on Twitter?

5. What items, such as pictures or news articles, are people providing links to on Twitter in order to supply users with more information?

6. How effective are Twitter users in conveying information through their tweets?
APPENDIX E
CODING SYSTEM: FLICKR CONTENT

The following questions were used to analyze the content on Flickr:

1. Of what are people posting pictures?

2. How do subscribers respond to the pictures?

3. How do subscribers react to the different angles, lighting, or special effects used to take the pictures?

4. Are the pictures in color or are they black and white?

5. How are notes, tags, and descriptions implemented on Flickr?
VITA

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