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언론정보학과석사학위논문

**Collective Imagination of a Global Epidemic
- Reality Construction Narratives on Newspaper and
Twitter Images of Ebola -**

전 지구적 전염병에 대한 집단적 상상력
: 신문과 트위터에서 유통된 에볼라 이미지의
현실구성 내러티브 비교 분석

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언론정보학과

김 영 립

Collective Imagination of a Global Epidemic

- Reality Construction Narratives on Newspaper and
Twitter Images of Ebola -

지도교수 홍 석 경

이 논문을 언론정보학 석사학위논문으로 제출함

2016년 05월

서울대학교 대학원

언론정보학과

김 영 립

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The image shows three handwritten signatures in black ink. The first signature is for '강명구' (Kang Myung-gu), the second for '이재현' (Lee Jae-hyun), and the third for '홍석경' (Hong Seok-kyung). Each signature is written over a horizontal line that corresponds to the name in the list to its left.

Abstract

This study explores newspaper coverage and social media images of the Ebola epidemic that occurred in 2014. The research was held to show how different media platforms structure a global crisis and what kind of mediated realities are presented to the public. Specifically, the study examines whether a social networking sites' presentation of an epidemic describes a coherent feature of reality, even though individual activities are fragmented and disconnected. The study attempts to find if such information as a whole demonstrates some kind of narrative that is either similar to or different from what is constructed by mainstream media.

For theoretical underpinning, this study relies on the reality construction and narrative theory to rationalize its purpose and methodology. Reviewing foundational ideas that explored the relationship between narrative and real events, the study defines narrative as a type of discourse composition that brings together diverse events, happenings, and actions of human lives and integrates them into a temporally organized whole by means of a plot. Following the narrative theory approach, this study gathers the visual data on the Ebola epidemic and configures them into a coherent narrative structure to explain the event's reality construction and to dissect its meaning-making process.

To test this specification, the study conducts a combination of paradigmatic and narrative analysis to the Ebola photos, collected from two newspapers of United States (*Wall Street Journal*, *The New York Times*) and Twitter, from March to December 2014. In terms of paradigmatic analysis,

the research corpus was classified monthly into 12 categories according to the visual theme in each photograph. Then, reading the fluctuation of the photos' themes, narrative analysis was done by reconstructing the Ebola story through steps of emplotment, which was theorized by Ricoeur and Polkinghorne. The result shows that, like those of mainstream newspapers, images on Twitter also follow the narrative structure that is necessary to understand the reality. However, Twitter narrative differentiates from that of newspapers by forming less ideologically structured discourse on the epidemic. The study suggests that such difference was discovered since unlike newspapers, which few human actors hold the decision-making power on what to report and what not, posts on Twitter are mediated by algorithms that the user activities (for example, clicking 'like' and 'retweet') play the most part.

In discussion, the study reflects the sociological meanings of reality construction narratives in today's digital mediascape and examines on what status does these stories that we extracted from newspapers and Twitter data lie. Especially, in order to explain the narrative construction in Twitter space, the study refers to the postmodern narrative theory that interprets the change in contemporary users' experience with media narrative as pluralistic, unstable, ever-changing and sporadic. Also, understanding that the study's emplotted story is one of many ways to encounter with the Ebola narratives from Twitter photos, the study contemplates on what it means to analyze 'a part' instead of 'the whole' in the digital era, in relation to Latour's monadology. As a result, the study justifies that there is enough regularity in 'the parts' (which is in this case the study's reconstruction of a particular

Ebola narrative) to comprehend the collective imagination, or the “reality” of the crisis, without reducing the set of data in a binary relationship between ‘individual’ and ‘aggregates.’ In other words, we are able to grasp an understanding of the Ebola situation without analyzing the whole, or the aggregate of the multiple stories on the epidemic. Lastly, the study suggests future researchers to consider an empirical way to test the existence of multiple narratives in social media context, and to explore the implications of hidden layers, or algorithms, which operate underneath the users’ narrative experiences that are pluralistic and virtual in nature.

Keyword: The Ebola Epidemic, Reality Construction, Narrative Theory, Visual Narrative, Image, Social Media, Ambient Journalism

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Chapter 1. Introduction

1-1. Purpose and goals

Since the advent of modernity, large scale crises or disasters are mostly not limited to the location where they first occurred. In the era of globalization, the world has shrunk both physically and perceptively; travel time across the globe has diminished, compressing our experience of time and space (Harvey, 1989) while the mass media and the Internet deliver lively images of the events afar, shortening the psychological distance between people from different localities (Moeller, 1999). The implication of such phenomena which McLuhan (1962) called ‘global village’ is that one’s concerns are no longer limited to his or her immediate locality but have expanded to a global terrain. Tomlinson (1999) describes this as ‘enforced proximity,’ which implies increased global risks and threats, as problems occurring in “neighboring” countries can no longer be ignored as happenings that are irrelevant to one’s circle of life.

This problem worsens in the case of infectious disease outbreaks. Numerous scholars have already shown that infectious diseases are themselves cultural productions of globalization (Davies, 2008; Fidler, 2001; Fidler, 1996; Smith et al., 2007). Although it is true that disease spread from one place to another since the Black Death, globalization has dramatically facilitated the spread of virus by breaking down barriers of human movement and enabling migration, traveling and trading in a whole

new scale. As a result, people's anxiety and fear toward contagion outbreaks from distant place climaxed, since there is no guarantee that their homes will be safe, no matter how far they are from the outbreak site. Accordingly, international media are giving more and more attention to such news, creating and disseminating explosive amount of texts and images on the crisis. Broadcasters and photojournalists strive to capture the moments of suffering, devastation, death, and aid that are going on in the infected regions, both to deliver information and to call for sympathy and support. Moreover, thanks to the Internet and social media, not only professional journalists but general citizens also act as agents of information, spreading contents brought from traditional media or even creating their owns and freely uploading them on their online accounts. These amateur contents are then spread through the online network which is in most cases established through the systems of 'follower' and 'likes.' In this process, those contents that are not recognized their significances are buried from people's attention while contents that are recognized through the networking service's algorithm receive frequent exposures by remaining on the main page. Such informational function of social media during times of crisis were recognized as a part of ambient media system where broad, asynchronous, lightweight and always on communication systems constantly update citizens with news and events (Hermida, 2010).

In this sense, this study's aim is to analyze such contents that are created and spread by both traditional media, especially newspaper, and social networking sites during a global epidemic outbreak. Through a comparative observation on newspaper and online representations of an

epidemic, the study hopes to show how the media structure a global crisis and what kind of mediated reality is presented to the public. This is important since the society and individuals construct reality perception by imposing orders to various, seemingly irrelevant information. Expanding on this, the study examines whether a social networking service's presentation of an epidemic describes coherent features of reality and whether it has a possibility to function as an alternative medium that complements the traditional media. Although individual activities on social media are fragmented and disconnected, the study attempts to find if such information as a whole constructs a bigger image of reality and demonstrates some kind of narrative that is either similar to or different from what is constructed by traditional mainstream media. In short, the study hopes to answer whether social networking sites offer a particular lens in perceiving reality, in comparison to traditional journalism, and what kind of informational environment that today's media users are located in.

The researcher chose the 2014 Ebola epidemic that occurred in three countries of West Africa (Sierra Leone, Guinea, Liberia) as a case study. This epidemic grew to become the largest Ebola outbreak in history, with more than 28,000 infected cases and some 11,000 deaths.¹⁾ Due to its lethal, contagious nature and extensive influence, Ebola outbreak soon gained global media attention and was reported frantically. Especially for those Western nations where cases of human infection were found, Ebola was not just an international issue transpiring in some distant place; it was also a local issue, ailing their own citizens. The infected Western individuals

1) Centers for Disease Control and Prevention. "2014 Ebola Outbreak in West Africa: Case Counts", <http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/case-counts.html>

received thorough coverage, starting from their day-to-day health status to personal stories such as family and love relationships. Western media were also extremely focused on the securitization of national boundaries to protect their citizens from this “external” threat. As a result, Western media representations of Ebola received criticism for spreading racist, xenophobic sentiments across the globe. As ‘Africa’ has been a frequent object of stereotyping by Western media throughout history, the Ebola epidemic was expected as an appropriate case to possibly witness the dynamic struggle between the traditional media’s framing of the ‘others’ and the grassroots journalism on social media, which is free from gatekeepers and editorial influence.

It is also necessary to mention that the focus of this research is the images of the Ebola epidemic, rather than texts. The reasons the researcher chose images as research corpus are as follow. First, image is far from an objective portrayal of reality (Barthes, 1972). Rather, it is a discursive formation that is subjective to the creator’s interpretation of reality (Sontag, 1977). Such point is consistent to the study’s aim since it attempts to examine the traditional media and social media’s reality construction that can never be free from one’s social, cultural, and ideological environment. However, although we are living in a flood of images, as Mitchell (1994) called “pictorial turn,” relatively little scholarly attention was given to their meanings and influence. Thus, this study argues that researches on visual contents should be given light in order to acknowledge their power in producing knowledge and to increase the public’s visual literacy. Second, the influence of images during crisis and atrocity has been a controversial issue,

since they visibly ‘show’ the desperate situations of the outbreak regions. The stimulating images approach the viewers instantaneously and emotionally, as they require less comprehension than texts (Moeller, 1999). Especially since the main stage of the Ebola epidemic was West Africa, which is relatively unfamiliar and exotic to the global audience, the power of visuals are expected to be more influential in crafting people’s understanding of the event. Third, since images overcome the language barrier between countries, they are appropriate objects of this study’s transnational approach on a global event. As a result, this study conducts a comparative visual analysis on the Ebola images spread by the United States’ mainstream newspapers and those spread by social networking sites, specifically Twitter.

In order to analyze these images, the study actively invites narrative theory, which argues that human understanding basically occurs through making and telling of stories. By imposing a timely structure from heterogeneous elements of the real world, people construct reality that gives meaning (Ricoeur, 1985/1990). In like manner, this study conducts such process of ‘emplotment’ over the collected images and use narrative analysis to reconstruct the Ebola epidemic stories from two different media sources. Therefore, the study hopes to answer whether such images create a coherent reconstruction of reality in relation to the complicated networked mediascape of today’s users.

1-2. Background of the Ebola epidemic

The first reported outbreak of Ebola virus occurred at 1976, in Zaire (now called Democratic Republic of Congo) and Sudan, and was named after Ebola River in Zaire. About 600 people were infected in these two cases and the mortality rate was 88% and 53%, for Zaire and Sudan case respectively.²⁾ Throughout late 1970s to 1980s, independent Ebola cases erupted across Africa but none of them received media attention. However, in 1989, Ebola virus was first introduced in United States, in quarantine facilities in Virginia and Pennsylvania by monkeys imported from Philippines. 100 monkeys were infected to Ebola and soon animal technicians fell sick, increasing nationwide horror. Although it was later proved that the technicians were not infected to the virus, this incident raised attention and fear of Ebola among Western society. The next big Ebola outbreak occurred in 1995, Kikwit, Zaire. This time it infected 315 people with mortality rate of 81%, spreading to South Africa and Gabon during its two years of lasting. Another serious outbreak happened in 2000, Sudan, with 425 human cases reported.³⁾ At this point, Ebola virus gained global media attention and was enthusiastically reported as “doomsday disease” (Moeller, 1999). The public’s fear on the virus was heightened as it was known that there is no acknowledged cure or vaccine for Ebola. However the public’s interest on Ebola soon faded out for 15 years until at

2) Centers for Disease Control and Prevention. “Outbreaks Chronology: Ebola Virus Disease”, <http://www.cdc.gov/vhf/ebola/outbreaks/history/chronology.html#thirtytwo>

3) Centers for Disease Control and Prevention. “Outbreaks Chronology: Ebola Virus Disease”, <http://www.cdc.gov/vhf/ebola/outbreaks/history/chronology.html#thirtytwo>

last in March 2014, the largest Ebola epidemic broke out in West Africa, particularly Sierra Leone, Liberia, and Guinea, and spreading to Nigeria, Senegal, Mali, United States, Spain, and United Kingdom. However, there were only 6 total cases of infection in non-African nations, which show that the epidemic largely prevailed in Africa continent.⁴⁾ Ebola virus is passed from person to person through direct contact with the blood, secretions or other bodily fluids of infected persons, or from contact with contaminated needles or other equipment. It has a severe acute viral illness often showing symptoms of fever, vomiting, diarrhea, leading to dehydration, and ultimately to internal and external bleeding. The incubation period is 2 to 21 days, while death tends to occur in the second week of infection. Mortality rate of Ebola virus is known to be very high, which has a case of up to 90%.⁵⁾ There is no acknowledged cure or vaccine to Ebola virus and the only way to avoid it is by avoiding physical contact with the Ebola patients.

4) Centers for Disease Control and Prevention. “2014 Ebola Outbreak in West Africa: Case Counts”, <http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/case-counts.html>

5) World Health Organization. “Ebola Virus Disease: Background and Summary”, http://www.who.int/csr/don/2014_04_ebola/en/

Chapter 2. Theoretical Underpinning

2-1. Reality construction and media

The purpose of this study is twofold; first is to examine what kind of mediated realities of a particular event, in this case, the Ebola epidemic, are presented to the public, and second, to analyze how the public reconstructed this event through social media platforms. Thus, it is important to first go through what it means to ‘construct reality’ and the role of media in the meaning making process of the social world we live in.

The reflection of reality as socially constructed by individuals’ actions, behaviors, and beliefs was theoretically coined by Berger and Luckmann (1966) in ‘The Social Construction of Reality: A Treatise in the Sociology of Knowledge.’ These scholars were highly influenced by Alfred Schutz’s phenomenological approach to people’s creation and perception of social reality. Following Schutz’s ideas, Berger and Luckmann argue that society is socially constructed and it is necessary for sociology of knowledge to explore how this process works. In order to explain this thesis, these scholars suggest two propositions of society: first, the society contains objective truths (society as objective reality) and second, the society is established through actions that express subjective meanings (society as subjective reality). Although these propositions seem paradoxical to each other, authors argue that they accurately portray the reality’s double-sided characteristic and that these two are mutually dependent - one cannot stand

without the other. More specifically, the authors explain the social construction of reality as the product of endless dialectical processes of externalization (the process in which society is created through people's physical, mental actions to express themselves), objectivation (the process in which such externalized products obtain objectivity and become institutionalized after some time of habituation), and internalization (the process in which such objectified social world enter into human consciousness after socialization). They describe that individuals and groups who continuously interact in a social system create concepts or mental representations of each other's actions and behaviors, and these concepts gradually become habituated into reciprocal roles played by the actors in relation to each other. Then these reciprocal interactions become 'institutionalized' when they are habituated enough for other members of the society to freely enter into and play out, and in the process, the knowledge and people's conceptions of what reality is become 'embedded' in the institutional fabric of society. At this point, what Berger and Luckmann call 'symbolic universes' are created to provide legitimation to the institutional structure and act as sets of beliefs that are purposed to make such structure plausible and acceptable to the public. In other words, they are ideological systems that "puts everything in its right place" (Berger & Luckmann, 1966). Also, according to the authors, symbolic universes provide order in history by locating all collective events in a cohesive unity of past, present, and future. This concept of symbolic universe is especially important to communication researchers since mass media is one form of such.

Berger and Luckmann conclude by defining knowledge as “the sum total of what everybody knows about a social world, an assemblage of maxims, morals, proverbial nuggets of wisdom, values, and beliefs, myths and so forth” (Berger & Luckmann, 1966). Following them, numerous scholars (Searle, 1995) have contributed to the theory of reality construction by arguing that the real world is the product of various interactions and social flows in cultural and historical contexts. Thus, according to the Constructionists, it can be said that reality is relative and negotiable.

The role of mass media in the process of reality construction has been a central issue to Communication researchers. In general, there were two different approaches to this issue; the American empirical sociology of mass communication viewed the social construction of reality as one type of media effect, while European (especially Frankfurt) school of critical studies considered it as an important aspect of the relationship between culture and society (Adoni & Mane, 1984). While Neo-Marxists questioned the interaction between symbolic contents and institutionalized social order, suggesting that mass media reinforces the dominant ideology, those who were interested in ‘to what extent to mass media contents contribute to the individual’s perceptions of social reality’ contributed on developing theories such as political socialization, agenda setting, and knowledge gap hypothesis (Adoni & Mane, 1984). Furthermore, researchers like Gerbner (1980) and his associates gave comprehensive effort to integrate the empirical study of symbolic contents and the construction of subjective reality, thus conceptualizing the cultivation theory. Gerbner argues that mass media develops people to have a particular perspective on the world through

reconstructed reality that is comprised of selected scenes and camera angle, which is different from the actual world.

Weimann (1999) gave full-scale attention to the ‘mediated realities’ of mass media, and its power to ‘reconstruct’ the objective world. While reflecting the modalities of reconstructed reality, he simplifies the flow of mediated reality into a ‘double cone model.’

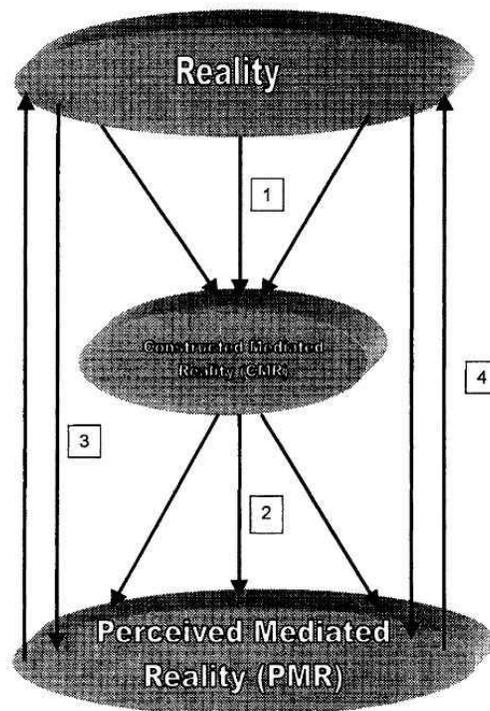


Figure 1. Weimann's Double Cone Model

According to this model, the world is composed in three parts; 1) the reality 2) constructed mediated reality and 3) perceived mediated reality (Figure 1). We can acknowledge that this categorization is similar to Berger & Luckmann's distinction of objective, symbolic, and subjective realities.

Weimann is interested in the first and second steps that are intervened by constructed mediated realities. In the first step, the sender constructs the mediated reality by combining events and experiences of the reality. According to Weimann, although this mediated reality is based on, and contains the components of what has actually happened, it is more powerful, active, cinematic, fast, and glamorous than the real. Second, the mediated reality is delivered to the audience through selective exposure, selective perception, and selective memorizing processes. This selection mechanism operates both consciously and unconsciously and make audience to perceive only particular aspects of mediated realities. Weimann, while relying largely on the cultivation theory, reviews the evidences of reconstructed reality on mass media in various fields (such as violence, sexuality, death, race, nationality) and their influence in people's perception of reality.

At this point, it is important to mention that this study's focus is on what form and content does the media's reconstruction of real event take, rather than finding the effect of mass media's messages on the audience. Especially, the study is interested in the representation of nonfictional event with information purposes, such as news. Numerous scholars shown that news is presented to the public as a 'narrative' from, describing the reality by structuring the events and experiences and simplifying the complicated components of the real world (Schudson, 1978; Tuchman, 1974; Weimann, 1999). In this sense, the mediated reality is not a collection of fragmented events scattered in front of us but a reconstructed narrative, which is formed by selecting significant components and

organizing them in a particular order. Different from these Communication scholars however, this study's focus is not on one individual news story, or one posting on Twitter, but their aggregates, and whether such narrative structure is still discovered when analyzing the whole. Thus, it is necessary to review the general theory of narrative and its relationship with reality construction in the following chapter.

2-2. Narrative's role in (re)constructing reality

As explained above, this study relies on the narrative theory to explain the reality presented on mediated platforms. According to Boyd (2010), the perceptive system that constructs human lives and realities exists in terms of narrative. Such logic of narrative is involved in the entire reality-formation process, both in fiction and non-fiction. (Gottschall, 2013). As a result, this study gives attention to the narratology research, which is a humanities discipline dedicated to the study of the logic, principles, and practices of narrative representation. Although the history of narratology and its core elements and ideas can go back as early as Greek antiquity, bringing Plato and Aristotle's ideas on representational modes and the functional relation between character and action, the development of narratology as a distinct field of study was started by French Structuralists. The term 'narratology' was first coined by Todorov (1969), who called for a generalizing theory that could be applied to all domains of narrative; he argued for a shift in focus from the surface level of text-based narrative to the general logical and structural properties of narratives as a 'universal

representation,’ and established a foundational ground for the science of narrative. Including Todorov, leading Structuralists such as Barthes, Genette, Greimas, and Kermode studied the structure and form of narrative, focusing primarily on novels, myths, and folktales as their research corpus. In ‘Narratology: the form and functioning of narrative’ Prince (1982) settles the Structuralists’ conceptualizations of narrative as “the recounting (as product and process, object and act, structure and structuration) of one or more real or fictitious events communicated by one, two or several (more or less overt) narrators to one, two or several (more or less overt) narrates.” He distinguishes narrative from simple description of events by saying narrative is a representation of at least two real or fictional events (or one state and one event). Moreover, Prince defines narration as an operational explication of the phenomenon of change of state, which consists of three conjoined events: the first and the third event are static while the second event is active. Also, the third event should be the inverse of the first (Prince, 1973). By conceptualizing Structuralists’ key ideas on narrative, Prince contends that narrative functions as a particular mode of knowledge and puts light on an individual’s fate or a group’s collectivity through signifying process.

Although such early narratology was centralized on the literary field, as time passed by it has been widely extended to other various fields such as law, psychoanalysis, film, music, and media, covering not only fictional narratives but also non-fictional ones. As a result, the study of narrative went beyond ‘what narrative means,’ to ‘who is it for and what influence does it make?’ (Choi, 2015). According to Cobley (2001), who inclusively

prescribed the corpus of narrative research by not limiting it to novel, myth, and folktales, narrative is a showing or telling of a story events and the mode selected for that to take place, a movement from the beginning to finish that contains a sort of a digression, and a representation of events that occupy time and space. Cobley refers narratology as a field of study that is interested in the components that build up a narrative and the various combinations between the narrative text and devices that the readers familiarize themselves to understand a particular narrative level. He finds the origin of narrative from the Plato and Aristotle, affiliating narrative as a sort of 'mimesis,' which is not only poetic but philosophical in a comprehensive sense. As a result, while Prince more focused on narratology as a theory of novel, Cobley has extended its meaning to comprehensive theories on narrative, which can be called as 'narrative theory.' Thus, narrative theory now includes subfields that have arisen from the post-structuralist movement and the paradigm shift in cultural studies, such as feminism, post-colonialism, media technological approach, informational approach, and empirical science.

Cobley refers to Hayden White's work on the narrative of non-fictional, historical accounts that marks the transition from narratology to narrative theory. White's work is notable since it first paid attention to the relationship between the narrative and the real world that it depicts. Fludernik (2003) also view White's work as a point of 'narrative turn,' which started to critically view the Structuralist's ideas and embrace multidisciplinary approach to narrative theory. White (1981) argues that there is a common presumptions between fictional narrative and nonfictional

historical narrative that they both are products of human's intention and desire. He says the only difference between novelists and historians is that novelists 'invent' stories while historians 'find' them, and that historians translate a chronicle of events into story components by arranging the events with a signifying system. Thus, while trying to find the meaning of narrativity in representing the real world, White argues that real events do not offer themselves as stories and narrative becomes a problem when we wish to give real events the form of story. Accordingly, White contends that narrative should be viewed less as a form of representation than as a manner of speaking about events. This is because real events are different from stories for two reasons; first, real events do not display a structure or form, and second, they do not appear to human consciousness with a clear conclusion but simply terminate. And unlike the real world, "historical narrative reveals a world that is putatively 'finished,' done with, over, and yet not dissolved, not falling apart. In this world, reality wears the mask of a meaning, the completeness and fullness of which we can only imagine, never experience. They give to reality the odor of ideal" (White, 1981). White continues to argue that such demand for unity and closure comes from our demand for moral meaning, and concludes that narrativizing discourse serves the purpose of moralizing judgments. In this case, the value of narrativity in the representation of real events raises from a desire to present reality with coherence, integrity, fullness, and closure of an image of life that is and can be only imaginary, in White's sense.

However, David Carr (1986) boldly defends against the skeptical direction of White and others who claimed that narrative is a cultural,

literary artifact at odds with the real. He argues that there is a continuity between narrative and reality and furthermore, claims that narrative is an extension of real event's primary feature, rather than a distortion. In order to back up his argument, Carr suggests oppositions toward those with the discontinuity perspective. First, he reconsiders what is 'reality,' and disclaims White's assumption that reality is a mere sequence of isolated events. Referring to Husserl's ideas on protention (tacit anticipation of the future) and retention (the process whereby a phase of a perceptual act is retained in human consciousness), Carr contends that our active lives always consult past experiences and envisage the future, and present is a passage between the two. In this case, "whatever we encounter within our experience functions as instrument or obstacle to our plans, expectations, and hopes," rather than a structureless sequence of unrelated events. Second, Carr disputes White's claim that real events do not unfold as a beginning-middle-end structure of a narrative by saying that the means-end structure of action always displays common features of the beginning-middle-end structure. In other words, a moment in which an action is inaugurated can be regarded as the beginning and the accomplishment of such action as the end. Thus, Carr argues that narrative is a proper representation of reality since human events do have a temporal structure. Lastly, Carr questions whether such narrative conception of experience, action, and existence can be also relevant to "human reality" in social forms, beyond an individual. This is important since this study is interested in the construction of reality which is created by, and presented to the public in a collective sense. Carr answers that it is, by showing that

the structure of social time can be called a narrative structure, not only because it has the same structure and closure that he have shown in the individual level but also because the interplay of roles, such as narrator, audience, and character, can be divided among participants in the group, reflecting a characteristic of narrative structure. Therefore, “narration as the unity of story, story-teller, audience, and protagonist, is what constitutes the community, its activities, and its coherence” (Carr, 1986)

Scholar who more deeply delved into the issue of narrative and human’s understanding of reality in terms of temporality is Paul Ricoeur (1985/1990). Ricoeur argues that narrative is a figuration that imposes the appearance of reality through multistage mimesis of its different components, based on previous understanding of human action. Ricoeur explains how narrative represents the human world by theorizing three stages of interpretation, which he names mimesis 1 (prefiguration of the field of action), mimesis 2 (configuration of the field of action), and mimesis 3 (refiguration of the field of action). First, mimesis 1 refers to an individual’s natural competency to understand the sign systems of one’s own society and to inhabit its culture as a symbolic whole. Second, mimesis 2 means “narrative emplotment,” or in other words the imaginative configuration of the elements given in the field of action at mimesis 1. At this step, emplotment has a mediating function, which configures events, agents, and objects into a meaningful part of a larger whole in which each takes a place in the network that constitutes the who, why, how, where when of the narrative. By putting heterogeneous elements together into is syntactical order, emplotment creates a “discordant concordance,” a tensive unity that

functions as a redescription of a situation in which the internal coherence of the constitutive elements endows them with an explanatory role. Another important characteristic of mimesis 2 is its temporality, since emplotment's linear chronology can reflect different human experiences of time. In other words, the temporality of the story does not coincide with the time of the world in which the story is told nor the time of the actual events that story is said to depict. Rather it is characterized as an interplay of three tiered structure of time (the time of narrating, the narrated time, the fictive experience of time produced through the conjunction/disjunction of the time it takes to narrate and narrated time), and Ricoeur argues that through this structure narrative resolves the insuperable characteristic of philosophical speculative aporias of time. Lastly, mimesis 3 concerns a process which a story comes to life in the consciousness of those outside its imaginary world. It is a total act of comprehension that is completed by the readers, which involves the intersection of the world of the text and that of the reader (Dowling, 2011). In this sense, Ricoeur's three steps of mimesis also implies narrative's characteristic of changeability; since the possibility of redescription of the past offers us the possibility of re-imagining and reconstructing the interpretation of narrative by bringing light to unrealized connections between agents, actors, circumstance, and motives. Thus, Ricoeur concludes that fictional and non-fictional narratives enlarge reality, expanding our notion of ourselves and the world, and their possibilities. Referring to Ricoeur's works, Jerome Bruner (1991) also went beyond on the idea of narrative as a representation of reality but theorized it as an instrument of mind in the construction of reality. As a result, he tries to describe some

features of a world of reality constituted according to narrative principles. He clarifies ten features of narrative while contemplating between narrative's mental power in structuring human experience and the symbolic system of narrative discourse that makes the expression of power capable. The ten features are organized and explained in Table 1.

Table 1. Bruner's Features of Narrative

#	Feature	Description
1	Narrative diachronicity	A narrative comprises an ensemble of ways of constructing and representing the sequential, diachronic order of human events.
2	Particularity	Narrative deals with particular events.
3	Intentional state entailment	Narratives are about people acting in a setting and things that happen to them must be relevant to their intentional states while engaged to their beliefs, desires, values, etc.
4	Hermeneutic composability	Narratives are that which can be interpreted in terms of their role as a selected series of events that constitute a "story."
5	Canonicity and breach	A narrative must be about how an implicit canonical state has been breached, violated, or deviated from in a manner to lead people to see human happenings in a fresh way.
6	Referentiality	Narrative "truth" is judged by its verisimilitude rather than its verifiability.
7	Genericness	As a flip side to particularity, narrative can be classified as a genre. This genre can be thought of as a way of constructing human plights but also as providing a guide for using mind.

8	Normativeness	Narrative is centrally concerned with cultural legitimacy. But this normativeness of narrative is not historically or culturally terminal.
9	Context sensitivity and negotiability	Narrative requires a negotiated role between author or text and reader, including the assigning of a context to the narrative, and ideas like suspension of disbelief.
10	Narrative accrual	Narratives are cumulative and these accruals eventually create something variously called a “culture,” “history,” or “tradition.”

After considerable review of narrative theory and its development through various humanities fields in relation to the concept of reality construction, this study defines narrative as “the type of discourse composition that brings together diverse events, happenings, and actions of human lives and integrates them into a temporally organized whole by means of a plot.” Plot in this sense is a thematic thread, and its integrating operation is brought from Ricoeur’s idea of emplotment. Specifically, plots function to configure events into a narrative by: (a) delimiting a temporal range which marks the beginning and end of the story, (b) providing criteria for the selection of events to be included in the story, (c) temporally ordering events into an unfolding movement culminating in a conclusion, and (d) clarifying or making explicit the meaning events have as contributors to the story as a unified whole (Polkinghorne, 1995). This

study's aim is to operate such stages of emplotment into scattered data of a particular event to create a narrative that reconstructs people's perception of reality. The use of narrative configuration has been regarded as a useful tool in qualitative studies, both as a data and object of analysis to understand the human world. Polkinghorne (1995) has distinguished two types of narrative inquiry that is conducted in qualitative studies: 1) paradigmatic-type narrative inquiry, which gathers stories for its data and uses paradigmatic analytic procedures to produce taxonomies and categories out of the common elements across the database; 2) narrative-type narrative inquiry, which gathers events and happenings as its data and uses narrative analytic procedures to produce explanatory stories. In this case, this study falls into the second category of narrative inquiry. The specific ways on how this analysis is conducted will be explained in the method section (Chapter 4-2).

2-3. Media image and visual narrative

So far, we have reviewed the concepts of reality construction and narrative theory and the relationship between each other. At this point, it is necessary to go over what significance do such concepts have in the production and reception of images, which are the main corpus of this study.

As Mitchell (1994) called a "pictorial turn," we are living among the media-generated images of the world, utilizing them to construct meaning about social, cultural, and political issues. An important point is

that these images are mediated through a partial lens, in which the point of views of political and economic elites who have control over media are reflected. Since images are more subtle form of meaning construction (Gamson et al., 1992), the mediated images seem so normal and natural that the very art of social construction is frequently invisible. This is why more scholarly attention should be given on the media images of events and its relationship with the viewers. While examining the messages of such imagery, Gamson et al (1992) distinguished three main themes that arise in decoding media images: 1) issues raised by the concept of hegemony, 2) framing and frame transformation, and 3) the fragmentation effect. To mention briefly, the issues raised by the concept of hegemony, bringing Gramsci's (1971) works, focused on how the routine, taken-for-granted structures of these images contribute to a system of dominance. However, it is important to note that such hegemony model of culture and media is not a static state but in Kellner's (1990) words, "a shifting, complex and open phenomenon, always subject to contestation and upheaval" (as cited in Gamson et al., 1992). Second issue that arise when studying the process of media images' construction of meaning is frame and frame transformation. According to this issue, the reported events are pre-organized through frames that encode the reality, while readers have authority to decode them in different ways. In this sense, quoting Gurevitch & Levy (1985), media become "a site on which various social groups, institutions, and ideologies struggle over the definition and construction of social reality" (as cited in Gamson et al., 1992). Lastly, postmodern scholars are going beyond the concept of frame and theorize that the reality construction of media images

in the contemporary world leads to fragmentation of meaning. According to the scholars, the compression of time and space and preoccupation with immediacy led to a proliferation of ephemeral images which have no ability to coherently organize frames to provide meaning over a period of time. The result of this phenomena is what Harvey (1989) coins, “a fragmented sense of reality” (as cited in Gamson et al., 1992).

At this point, the study lists reasons for selecting media images as research focus, in relation to their ability to construct the perceived reality. First, images need to be examined because, as we mentioned briefly above, photography is in itself a subjective discourse formation. Photographs can never be separated from their social, cultural context, as they are created by individuals who have distinct perspectives on the society. This was repetitively said by Barthes (1957/1972), who showed photographs’ use in spreading ideologies, and Sontag (1977), who argued that photography is never ‘realistic,’ as it relies on one’s interpretation of the world. Imagery is used to communicate the dominant cultural values and set of ideas, thus reflecting the culture’s ideology and self-image. In this sense, photographs, especially documentary photographs, are not just records of absolute reality but interpretations of one’s perceived reality, which is mingled with the social, cultural, and ideological environment (Joo, 2011). These mediated images are then communicated through cultural codes as they are ‘sign systems’ in themselves, and thus, “messages they carry are always representative” (Prosser, 1998). Therefore, it is necessary to examine photography’s role as a producer of knowledge in order to figure out how the global discourse of the Third World is constructed.

Second, while language and text transmit information, image transmits affect and emotion. Especially when delivering issues that arise in some distant places, it is very important to make the audience “feel” the event in order to attract attention. Journalists make efforts to excite the audience’s imagination, as this imagination is what makes intangible issues tangible. Also, as Barthes (1957/1972) has said, photography is a collective memory of the world. Photographs make indelible impressions to audience as we remember events by memorized images rather than words. And by giving a face to the text, image is an excellent medium that shortens the perceived, imagined distance between the object and the audience. Since “images have authority over imagination” (Moeller, 1999), photographs of Ebola on newspaper and social media make a justifiable corpus for this study, as it attempts to investigate the dynamic process of constructing a collective imagination in a crisis situation.

Lastly, since narrative has transformed from the linear continuity of text and words to non-linear module of visual communication with the pictorial turn and even more, the advent of digital age, deeper understanding on the narrative images became to be required. In other words, it became important to educate the people to acquire visual literacy, which can be defined as the ability to recognize the image’s meaning and components through knowledge on basic visual elements, ability to understand and create visual messages, and using images visual symbols when communicating (Chung, 2007). Moreover, it is also related to the interpretation of images of the past and present, creating images themselves for efficient communication, and judging images’ accuracy, legitimacy, and value (Chung, 2007).

Therefore, this study aims to deeply analyze the mediated images of a particular event to raise the following issues and provide more knowledge on how to understand them.

Chapter 3. Literature Review

3-1. Mass media's construction of infectious disease

With such concepts and theories in mind, it is necessary to examine the previous researches on infectious disease discourse, since this study's corpus is discursive formations produced by society, in the purpose of figuring their ideological influence or sociological effectiveness. Discursive formation of infectious disease was especially heightened with the advent of mass media, as words, images, ideologies, myths and metaphors associated with various kinds of disease began to circulate in an unprecedented scale.

Previous researches that dealt with the infectious disease discourse in the post-colonial era dominantly evolved around the concept of 'us' and 'other.' First to elaborate this concept, Price-Smith (2008) argues that uncertainty toward an unknown disease leads to the psychological repercussions to the public, which are fear and anxiety. And as a defense mechanism, people construct images of the 'other,' "resulting in stigmatization, persecution of minorities, and even diffusion of inter-ethnic or inter-class violence" (Price-Smith, 2008). In order to minimize psychological damage, people establish a perception of "ill" and the carriers of illness as objects to blame. In this sense, epidemics should be regarded as social constructs, "wherein the original damage of the pathogen is exacerbated through human perception (and misperception), the intrusion of affect (fear in particular), stigmatization of the infected, and overreaction by the state"

(Price-Smith, 2008). Similar studies also elaborate on the issue of health and disease as an identity work that creates boundaries between 'healthy self' and 'unhealthy others,' especially through the case of AIDS (Crawford, 1994; Lupton, 1994; Stillwaggon, 2003; Clatts & Mutchler, 1989). Defining identity work as a practice of protecting and reformulating personal boundaries by emphasizing the image of 'others,' Crawford argues that this practice is required when people have to manage the fear of contagion. Identity work operates to protect oneself from symbolic connections to the infected others, by distancing oneself from the negative characteristics ascribed to them. By projecting certain characteristics to the infected - distinctive behaviors, predispositions, social or geographic environment - individuals gain self-reassurance and comfort. In this sense, a disease is used as a 'natural alibi' to enforce defense against dangerous 'others' and places.

Another important global infectious disease that created an interesting discourse is SARS, which occurred in China in 2002. Although the mortality rate was only 9.6%, the public's fear on this disease was so amplified that it even generated cases of human rights violations and racist implementations. Cho (2004) argues that such fear can be understood as a result of collective imaginary on SARS and its discourse; as a disease from the East, SARS was also an object of 'othering' that reminded the Western nations of Yellow Peril. In another perspective, Chiang & Duann (2007) examined SARS coverage in China and Taiwanese newspapers to show what metaphors were used to describe the disease and discovered that they largely used 'the disease is war' metaphor, first coined by Sontag. Meanwhile, Huang & Leung (2006) partly refuted the construction of 'self' and 'other'

in the SARS discourse, by examining the Western-led press coverage of mainland China and Vietnam. They criticized the concept of 'other,' arguing that this proposition ignores the complex context underlying the issue. They supported this claim by conducting content analysis on British newspapers, which showed that the interplay of country's internal and external factors and government's handling of the crisis decide the discourse formation of the disease. According to their findings, China was afflicted with the strategy of 'othering,' whereas Vietnam was shown in a positive light. Lastly, Lee (2005) examined online news coverage of SARS to observe the interaction of the media's global and local themes in a trans-regional crisis. She found that although online news media were commonly regarded as global media, when faced with an infectious disease, they did not adopt an entirely global perspective when covering the news. Rather, online news media appeared to be 'glocal,' as they blended global reporting with local news in order to increase audience's relevance to the issue and prod the public's moral responsibility.

There are several researches done in the field of mass communication on Ebola virus, which broke out in 1995 in Kikwit, Zaire. The first outbreak of Ebola occurred in the 1970s but the 1995 one was the first to gain media's attention and become exposed to global audience. Moeller (1999) says that there are three variables that make an epidemic 'newsworthy': familiarity of the disease, violence of the disease, and the geographical and social incidence of the epidemic. According to these variables, Kikwit epidemic received widespread coverage because it had everything: 'it was dramatic, it was dangerous, it had self-sacrificing nuns as

“angels of mercy,” it had the virus hunters as “disease cowboys”. It was gruesome, it was thrilling. It was a great story' (Moeller, 1999). Thus, Ebola epidemic had high relevance to typical Hollywood apocalypse stories as the coverage used pop culture analogies. In this sense, according to Moeller, the actual Ebola epidemic served to legitimate the horrifying assumptions of these pop culture contents. As a result, the epidemic was told more as a news icon, a spectacle to watch, and a cultural symbol, rather than a reality.

Ungar (1998) assesses newspaper and magazine coverage of the 1995 Ebola epidemic through content analysis in order to find out how the media frame hot crises and manage public panic. As a result, Ungar finds out that when a hot crisis like Ebola breaks out, media first adopt mutation-contagion package. This mutation-contagion package increases public's fear and anxiety about the epidemic by increasing uncertainty and sensationalizing the stories. Ungar argues, however, that media quickly dropped this mutation-contagion package and adopted 'containment package,' in order to allay the public's fear. A containment package was completed by using the strategy of 'othering:' the media set up a clear distinction between the origin of the outbreak and the rest of the world. Joffe and Haarhoff (2002) also examined the representations of 1995 Ebola on British media and came up with the results similar to those of Ungar. Furthermore, Joffe and Harrhoff conducted in-depth interviews with readers of Ebola coverage to examine how they made sense of this crisis after reading news. As a result, they found that lay people felt even more detached from Ebola than portrayed in the media; people did not think that globalization would bring Ebola into their own neighborhood and that it was worse than other

diseases. The horrifying, fantastical images of Ebola rather made audience feel it as a “fiction-like illness, which is not ‘real’ for its British audience” (Joffe & Harrhoff, 2002).

This study differentiates from previous researches on the disease discourse since it primarily deals with images, rather than language and texts, and observes how these images create collective social imagination of a global disease in a particular way. Also, this study conducts a comparative analysis on different media platforms, mainstream newspapers and social media, in order to examine discursive formation of disease in the context of current mediascape. This is necessary because technological advances have brought drastic changes on what contents are communicated to the public and how.

3-2. Social media and crisis

(1) Researches on social media as news

At this point, it is necessary to review the previous literatures that examined the role of social media in creating and spreading news information, and its relationship with journalism. Although the word ‘social media’ is a nebulous term as it can mean an activity, a software tool or a platform, it is used to refer to attributes such as “participation, openness, conversation, community and connectivity, which is largely at odds with the one-way, asymmetric model of mass media communication” (Hermida, 2010). Numerous scholars gave attention to the changes that such new media

brought to the public communication and dissemination of news. (Bruns, 2008; Castells, Fernandez-Ardevol, Qui & Sey, 2009; Shirky, 2008; Hermida 2010). Bruns & Highfield (2012) especially acknowledged this change as a phenomena of citizen journalism, which is defined as “an assemblage of broadly journalistic activities that draw on the voluntary contributions of a wide ranging and distributed network of self-selected participants rather than on the paid work of a core team of professional staff, and utilize internet technologies to coordinate the process and share its result.” They viewed citizen journalism as a direct and determined response to the perceived defects of mainstream journalism, showing the case studies on the 2001 Iraq and Afghanistan Wars. According to them, one important change that citizen journalism brought to the news reporting is the transition from “gatekeeping” to “gatewatching,” as citizen journalists and commentators watch the gates of news organization that pertain to their interests, and capture and compile them as they process and curate news. Similarly, Hermida (2010) called this phenomena as “ambient journalism,” which he defines as “broad, asynchronous, lightweight and always-on communication systems that create new kinds of interactions around the news, and are enabling citizens to maintain a mental model of news and events around them.” According to Hermida, as social networking sites make citizens obtain immediate access to information and each person can also instantly add to that knowledge, they operate as ‘awareness systems,’ which facilitates what Chalmers (2002) describes as “the ongoing interpretation of representations of human activity and of artifacts” (as cited in Hermida 2010). This is consistent to other scholars’ coining of this phenomena, such as “hybrid news system

(Chadwick, 2011),” “networked journalism (Beckett & Mansell, 2008),” and “process journalism (Jarvis, 2009).”

Among various kinds of social networking sites, this study specifically focuses on Twitter, which is a micro-blogging social networking platform that describes itself as “an information network.”⁶⁾ In this site, users can post 140-character messages called Tweets, which they can also include hyperlinks, videos, and images. The conventional user activities on Twitter can be described as ‘retweeting,’ which refers to the reposting someone else’s message and the use of hashtags, which users can indicate a specific topic that enables curation for those who are interested in the same topic. Another important characteristic of Twitter is that it does not require reciprocity when making relationship with other users, unlike Facebook or MySpace. Hermida (2010) argues that Twitter (and other micro-blogging sites) is creating new forms of journalism that offers multi-faced and fragmented news experience, marking a turning point from the traditional paradigm of journalism as “a framework to provide report and analyses of events through narratives, producing an accurate and objective rendering of reality.” An important point that Hermida makes is that the value of Twitter news does not lie in each individual posts of information but on the “mental portrait” that is created by a collective number of messages over a period of time. Similarly, Bruns & Highfield (2012) also argued that Twitter provides a further decentralized and shared platform for news curation in which compiling, collating, and curating the available information on any

6) ‘Twitter 101: How should I get started using Twitter?’, Twitter Help Center, <https://support.twitter.com/groups/31-twitter-basics/topics/104-welcome-totwitter-support/articles/215585-twitter-101-how-should-i-getstarted-using-twitter>>

given topic are thoroughly collaborative exercises. In other words, the individual activities on Twitter can be viewed as “random acts of journalism” that only makes sense when understood in relation to the context of the activities of other Twitter users. As a result, he pointed Twitter as a “platform of produsage” (a hybrid term of producer and user), in which “a gradual and collaborative development of news coverage and commentary by a wide range of users voluntarily making small and incremental productive contributions to the whole, rather than the orchestrated production of news stories and opinion by small teams of dedicated professionals.”

For the past few years, the academic world witnessed a lot of optimism swirling around the influence of Twitter in the creation and dissemination of news. Since the Internet radically undermines the expertocracy of news, the rhetoric of ‘democratizing news’ was populated. Especially, scholars focused on the Twitter’s positive influence in the delivery of breaking news. Solis (2010) mentioned that “news no longer breaks, it tweets,” and Bruns (2012) claimed Twitter as an important component of emergency media-sphere. Even though there were dangers of miscommunication and spreading of rumors, Bruns viewed Twitter in an optimistic light that preferential retweeting activities of Twitter users can actively police against these disruptions by calling out those who are seen as spreading misinformation. Thorsen (2013) also contends that there is an altering relationship between journalists and citizens as the citizens have easier access to eyewitness reporting of events, which led traditional news organizations to accept the audience material as integral component to news

reporting, especially in times of crisis. The use of Twitter in democratizing information during crisis and riots was climaxed during the Arab Spring movement, when the government's control of the mass media led the citizens to actively appropriate the Twitter space for spreading words, images, and the promotion of collective actions against the government (Khondker, 2011; Lotan et al., 2011; Howard et al., 2011; Harlow & Johnson, 2011; Stepanova, 2011; Eltantawy & Wiest, 2011; Wilson & Dunn, 2011; Huang, 2011). Moreover, other previous researches on Twitter proved its advantages in information delivery (Kwak, Lee, Park, & Moon, 2010; Suh, Hong, Pirolli, & Chi, 2010; Cha, Haddadi, Benevenuto & Gummadi, 2010), estimation and prediction through the flow of Tweets (De Longueville, Smith, & Luraschi, 2009; Sakaki, Okazaki, & Matsuo, 2010; Earle, Bowden, & Guy, 2012), and its skill in organizing collective behavior (Kavanaugh *et al.*, 2011; Mabweazara, Mudhai, & Wittaker, 2014; Huang, 2011).

However, there were also scholars who were skeptical whether the digital world and social media were actually "democratizing news." Goode (2012) argued that the idea of devolution of power from the few to the many, from the professional journalism to the citizenry in general, is too simplistic. By reflecting the data analysis from Cha, Haddadi, Benevenuto & Gummadi (2010), which proved that the influence of the top 100 users is exponentially greater than the top 1000, he claimed that Twitter is not a digital coffee house but rather a space where hierarchy and power relations still exist. However, he pointed out that accounts of news outlets, such as CNN and *The New York Times*, were among the ones with most followers

but not necessarily the most commonly retweeted. This raised questions on who are the agenda setters on Twitter as the study proves that traditional news outlets are largely eclipsed by new players. This is in alignment with the study by Lee & Kim (2012), which suggested that Twitter can be assessed as an alternative news media as Tweets with hyperlinks (which mostly direct the users to news articles from mainstream media) were less retweeted than those without the links. According to the study, this indirectly means that Twitter users prefer information produced around their personal network to those created by the news outlets. Another doubts that scholars raise is whether the decision making power of the editorial board has been truly eradicated on the social media ecosystem. Although it is true that Twitter is absent from the traditional gatekeepers who decided on what to publish and what not, the exposure of information is 'remediated' through the website's algorithms. These algorithms "try to sort the important, recent, and popular, deciding who ought to see what," but there is no transparency into how each social networking sites is sorting the news (Bell, 2016).

The review of previous literatures on the relationship between social media - especially Twitter - and news led us to conclude that examination on Twitter's system in producing and spreading information is necessary. It is important to ask exactly what are we seeing from these 'Twitter news' and what meanings they have, since we are oblivious on why we are exposed to such information environment unless we observe it. Thus, this study aims to comparatively analyze the news information presented on the traditional print media and Twitter, to question whether

there is an ideological difference between them and if such micro-blogging sites have a possibility to tell alternative stories.

(2) Researches on social media and infectious disease

The role of social media, vis-à-vis traditional media, in infectious disease communication is getting increasingly important, since they have brought dramatic changes to risk and crisis communication. Before Web 2.0, the flow of information was strictly controlled by emergency managers, and professional journalists acted as gatekeepers of information as they edited the news before they were presented to the public (Winerman, 2009). However, such linear model of communication is now replaced with multi-way interactions between a range of stakeholders and the public. Social media have become the primary channel for people who seek crisis information as they function as information aggregators and fields of “public discourse representing the unfiltered viewpoints of citizens” (Keelan, Pavri, Balakrishnan & Wilson, 2010). Scholars in risk communication argued that spontaneous, capricious, and fragmented actions of individuals have the possibility for producing meaningful information when aggregated, and can be spread out more extensively (Castells, 2009; Hughes & Palen, 2009). Also, in today’s networked world, social media sites provide new ways for people to interact both within and outside the local origin of the crisis event (Palen, Vieweg, Liu & Hughes, 2009). Such a perspective has been widely adopted by *Crisis Informatics* area, which focuses on the social system of emergency response that is both disseminated by the official responders and the public (Hagar, 2006). Specifically, Palen, Vieweg, Liu and Hughes

(2009), while observing the public's virtual participation on social media during Virginia Tech gunfire crisis, optimistically concluded that social media activities during a crisis situation demonstrate problem-solving, fact-checking, and self-correcting abilities.

At this point, it is necessary to restrict 'crisis' to health related issues, since the term embraces a broad range of events and phenomena that can bring different meanings in relation to social media. The first wave of research in terms of Web 2.0 and health crisis consists the estimation and surveillance of epidemiological patterns. Since it takes a considerable amount of time for health institutions and officials to report a structured assessment of the outbreak, data from informal media distributed through the Internet can provide earlier estimates of the pandemic. Chunara, Andrews & Brownstein (2012) attempted to find such possibilities with online media for predicting epidemiological patterns early in the 2010 Haitian cholera outbreak, analyzing the correlation between online news and social media and officially reported disease measures. As a result, they identified potential use of informal sources (HealthMap and Twitter) in estimating the reproductive number of the cholera epidemic. However, there are some limitations to this study since its definition of 'informal media' is quite broad and ambiguous; it has integrated traditional news media with social media, while these two seem to be analyzed in separate domains with regard to their differences in credibility, reliability, and impact. Similarly, Salathe *et al.* (2012) also recognize the potential of digital data sources in providing local and timely information about disease dynamics that would complement existing surveillance systems. They point out that social media

data are advantageous not only because of their large volume but also because they are highly contextual, networked, and increasingly hyperlocal. However, these studies largely differ from the objective of the current study as they did not focus on the contents of such data and what kind of discourse they construct. In other words, this study would shed more light on the meaning-making process of social media contents, than on the estimation and surveillance of epidemiology.

There is a stream of research that gave attention to the contents of the public participation in social media during a health crisis. These studies view social media as public opinion reflector, where researchers can get hints on the public's understanding, topic of interest, and sentiment toward the crisis. Such digital data are fragmented and unfiltered, offering an "instantaneous snapshot of the public's opinions and behavioral responses" (Chew & Eysenbach, 2010). Thus, the studies conducted content analysis on people's social media postings, specifically those from Twitter, MySpace, Blogspot, WordPress, and Live Journal. First, Shan *et al.*, (2014) examined the food crisis coverage by social and traditional media, in a case study of the 2008 Irish dioxin crisis. As a result, they contended that social media users were redistributing the information from expert sources rather than reflecting the public opinion. In other words, social media operated as information disseminators, not as fields of "parallel public discourse" (Shan *et al.*, 2014). However, they also found out that traditional media and social media contents gave different interpretations of the topic, in that traditional journalists focused more on economic consequences and identifiable victims while blog and forum sites gave more focus on global, public reactions and

government management. Also, Chew and Eysenback (2010) realized social media as useful sources for mining, aggregating, and analyzing online textual data real-time, and did content analysis on the Twitter posts on the H1N1 outbreak in 2009. They coded tweets in terms of their topic, the way outbreak is described, and the type of link posted. As a result, they figured out that the tweets contained only 4.5% of misinformation, demonstrating high levels of credibility, contrary to the speculation by traditional media sources. As a whole, the researchers expressed optimism about the potential that social media had for conducting an “infodemiology” study and their feasibility, as they not only disseminated credible information to the public but also provided rich sources of opinions and experiences that reflected the public’s knowledge translation and sentiment. Lastly, Keelan, Pavri, Balakrishnan, and Wilson (2010) observed MySpace posts to examine the public response to Human Papilloma Virus vaccine debate. The research started with the hypothesis that Web 2.0 would serve as a powerful tool to broadcast alternative viewpoints, thus triggering public debates. The results showed, however, that blog activities tended to follow the discourse from mainstream print media, rather than initiating original debates and shifting control over information to users. Also, not many user interactions and contrary commentary were observed.

Such review of the studies on social media’s implications on health crisis communication reveals that the debate is still inconclusive. Whether social media serve as complement, alternative, or mere distributor of traditional mainstream media differ among studies. Also, even though there are several studies that focus on the content of social media posts, they

seem to only tackle the change in volume, topics, sources, and sentiment of the posts; little of them give attention to the entire discourse, narrative, or ideological structure that such digital data construct. Therefore, this study hopes to contribute to our understanding of the Ebola narrative and the political framing imposed on it, by conducting a comparative analysis on visual image data from newspapers and Twitter.

Chapter 4. Research Questions and Methodology

4-1. Research questions

(1) Is it possible to discover a narrative structure from the collection of newspaper coverage photos on Ebola? If yes, what kind of story does it tell chronologically?

(2) Is it possible to discover a narrative structure from the collection of Twitter photos on Ebola and does it represent a coherent reality? If yes, what kind of story does it tell chronologically?

(3) What similarities and differences are shown in the Ebola narratives of two media platforms?

(4) What sociological implications do the reconstructed narratives have in relation to today's digital media environment?

4-2. Methodology

(1) Research corpus

This study considered two media platforms when designing the research corpus: newspaper and social networking sites. First, two newspapers were selected in terms of circulation, political affiliation, portion of international coverage, and dependence on images. Specifically, the Ebola images of *Wall Street Journal* and *The New York Times* from 3/24/2014 (when the first report on 2014 Ebola epidemic was released) to 12/31/2014

were reviewed. Newspapers from the United States were selected, as the U.S. is a major producer of the Ebola discourse, representing the dominant Western perspective. Also, in 2014 Ebola case, virus actually landed on American territory (New York, Dallas), posing direct threat to American citizens. Furthermore, the United States is a leading country that mobilizes international organizations' actions and NGO humanitarian aids to find a solution to the crisis. In this sense, it is possible to say the United States is an interesting field which has ambivalent attitude toward this epidemic: saving their own citizens by quarantining national boundaries from this 'external' threat, or saving the world by seeing this problem as all global citizens' issue. As a result, the study collected 572 photos from *The New York Times*, and 644 photos from *Wall Street Journal*, by extracting photo-containing articles from LexisNexis Academic with keyword 'Ebola.'

In terms of social media platform, Twitter images of Ebola were covered, as Twitter still remains as a dominant social media service in terms of news and information dissemination. These images are representations that do not have national boundaries, publicly opened to users and non-users, and are created by any individuals. Social media serve as spaces where any actors can produce, publish, and disseminate their contents - they are fields of grassroots journalism but are also utilized by mainstream media, NGOs, and governmental institutions to redistribute their coverage. Thus, the aggregate of social media contents should be understood as a large-scale, complex mixture of all communicating actors' voices. Twitter images on Ebola were extracted by searching hashtag Ebola (#ebola). Since hashtag is used as an indicator of a particular subject in social media

environment, the study was able to collect Tweets that have the intention to talk about Ebola. However, the study was not able to collect the whole population of Twitter images since the researcher had to manually look at the photos to analyze them. Due to such methodological restriction, the study decided to sample photos by filtering them according to the value of importance that Twitter users themselves imposed. As a result, the study extracted Twitter images from 'Top' search section, which sorting is based on Twitter's algorithm. Although Twitter has not publicized the exact standards and procedures of the algorithm, the website says that it is based on the number of retweets, replies, and registration as 'favorite'.⁷⁾ As a result, the study sampled 1,500 Twitter images of Ebola, 150 for each month from March to December 2014. Although the study admits that these photos are meagerly representative of the whole population since they were not random sampled, the study's main purpose is to examine the epistemological issues related to the viewers of these photos. Since the study is interested in the construction of perceived reality that is presented by, and to the public, it seems unnecessary to go against Twitter's algorithm and the ordering of Tweets that users first face when they search for Ebola. Therefore, the study collected sample Tweets by following the medium-specific characteristics of Twitter.

7) Twitter Customer Service page.
<http://support.twitter.com/articles/66018-i-m-missing-from-search>

(2) Categorization of images

The collected images were grouped according to the twelve categories that the researcher established after the review of previous literatures on visual content analysis and grounded theory approach. Since there were no previous studies that sorted health crisis photographs according to their narrative contents, the study referenced the existing categorization applied to news photos. In categorizing news photos, the content, story, abstract concept of the image, and emotional effect that the photo evokes proved to be important standards (Laine-Hernandez, 2006). Also, the study referred to the research design of Hong & Oh (2015), which conducted content analysis on the narratives of online photos in different crisis situations. As the coders collected and sorted the photos according to the following categorization, most of the photos eventually fitted into relevant categories. The twelve categories are described below:

① Map: Since the epidemic origin's locality and its spread to adjoining nations were major issues of the event, the images of map, mostly of the three West African nations (Sierra Leone, Guinea, Liberia) were discovered. Also, the statistics of confirmed cases and deaths were often given together, in an attempt to visualize the analyzed information.

② Virus: Microscopic images of virus were discovered, which provided a visible "body" to the event. Since infectious disease is an unsubstantial crisis in which the subject of the event is invisible to human eyes, unlike natural disaster or terrorist attacks, microscopic images of virus were distributed to show what this event actually "looks like."

③ Tragedy (on site): Among the photos taken on epidemic's origins, specifically in the villages of Sierra Leone, Guinea, and Liberia, those with 'tragedy' as central theme were categorized. Especially images that depict deaths, victims, and devastated environment of the event were included to this category. The contents of the photos portray the damage, violence, desperation, difficulty, pain, and deficit caused by the event.

④ Aid (on site): This category includes photos taken on the crisis origin, but with 'aid' as the central theme. Photos in this category show health care workers rescuing and aiding living patients. Receiving aid supplies, giving medical treatment to the patients, and escorting the patients to the headquarters belong to this category.

⑤ Infecting outside: Photos that depict the infected cases outside West Africa, especially in Western nations, were included in this category. The photos of transporting infected individuals to home country, quarantining suspected patients, airport screenings, and other personalized photos of the patient's town, apartment, and family, belong to this category.

⑥ Speaking: Photos of governmental and international organization representatives holding public speaking, announcements, and meetings were issued, as the Ebola epidemic became a global issue. The images of President Obama, the directors of Centers for Disease Control and Prevention, World Health Organization, United Nations and others belong to this category.

⑦ Scientific studies: Since there is no confirmed cure or vaccine for Ebola virus, images of scientific research to find such medicine were discovered. These photos were mostly taken in laboratories or hospital

research centers and depicted the West's high technological advancement, mostly in contrast to the underdeveloped Africa.

⑧ Hope: Photos that portray hopeful, positive atmosphere are coded to this category. The objects of these photos are mostly smiling and healthy, implying recovery and reconstruction. Also photos of major donators and community support belong to this category.

⑨ Education: Since the majority of West Africans were uneducated about the disease and related it with native superstitions, educational community meetings were organized. Photos that show health professionals teaching people on the facts and prevention methods of the virus belong to this category.

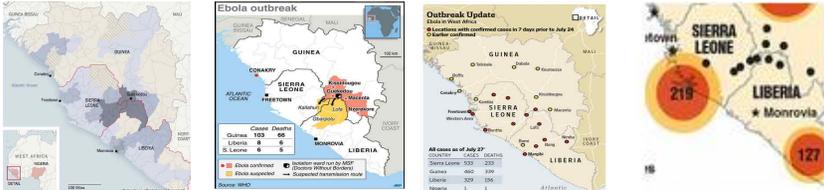
⑩ Caricature: On Twitter, images that humorize the crisis were discovered. These photos include drawings and photos that mock the government and organization's inability in preventing the spread, and photos that make jokes about the event itself.

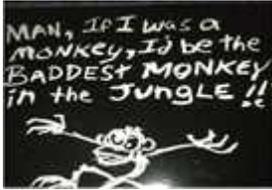
⑪ Horrific: On Twitter, horrific and sensational images of Ebola were discovered. These blatantly showed the dreadful symptoms of the disease, human corpses, and dead bats (which are known as main host of the virus) that are too gruesome to be posted on official media.

⑫ Irrelevant: Some tweets, although the text was mentioning on Ebola, displayed images that were irrelevant to the disease. These photos were attached just to subserve the Tweet's textual meaning. These images usually functioned to show the author's attitude and opinion toward the disease, but images themselves were unrelated to Ebola.

Table 2 shows examples of images by each category.

Table 2. Categorization of photos on Ebola

Category	Examples
(1) Map	 <p>The examples in this category consist of four maps. The first is a general map of West Africa. The second is titled 'Ebola outbreak' and shows the progression of the virus through Guinea, Sierra Leone, and Liberia, with a legend for 'Ebola confirmed' (red square) and 'Ebola suspected' (orange square). The third is titled 'Outbreak Update' and provides a detailed breakdown of cases by country: Guinea (103 confirmed, 66 suspected), Liberia (103 confirmed, 102 suspected), and Sierra Leone (462 confirmed, 339 suspected). The fourth map shows the locations of 219 cases in Sierra Leone and 127 cases in Liberia, with Monrovia marked as a major hub.</p>
(2) Virus	 <p>The examples in this category are three images related to the virus. The first is a 3D molecular model of the Ebola virus, showing its characteristic 'shepherd's crook' shape. The second is a micrograph of a single Ebola virus particle, also exhibiting the characteristic shape. The third is a close-up micrograph of the virus particle, highlighting its surface glycoprotein spikes.</p>
(3) Tragedy (on-site)	 <p>The examples in this category are three images depicting scenes of tragedy. The first shows a soldier in full military gear, including a helmet and camouflage uniform, standing in a dusty outdoor setting. The second shows a person in a white protective suit, likely a healthcare worker, handling a body in a wheelbarrow. The third shows a person lying on the ground in a dark, possibly indoor, setting, with another person standing nearby.</p>
(4) Aid (on-site)	 <p>The examples in this category are three images showing scenes of aid. The first shows a person in a white protective suit, likely a healthcare worker, interacting with a person in a blue protective suit. The second shows a person in a yellow protective suit, likely a healthcare worker, carrying a person on a stretcher. The third shows a person in a white protective suit, likely a healthcare worker, interacting with a person in a brown protective suit.</p>
(5) Infecting outside	 <p>The examples in this category are three images showing scenes of infection outside. The first shows a person in a white protective suit, likely a healthcare worker, interacting with a person in a white protective suit. The second shows a person in a yellow protective suit, likely a healthcare worker, carrying a person on a stretcher. The third shows a person in a white protective suit, likely a healthcare worker, interacting with a person in a white protective suit.</p>
(6) Speaking	 <p>The examples in this category are three images showing scenes of speaking. The first shows a person in a white protective suit, likely a healthcare worker, speaking at a podium. The second shows a person in a white protective suit, likely a healthcare worker, speaking at a podium. The third shows a person in a white protective suit, likely a healthcare worker, speaking at a podium.</p>

<p>(7) Scientific studies</p>			
<p>(8) Hope</p>			
<p>(9) Education</p>			
<p>(10) Caricature</p>		<p>When she got ebola but you still want to fuck</p> 	
<p>(11) Horrific</p>			
<p>(12) Irrelevant</p>			

(3) Narrative analysis

First, according to Polkinghorne (1995), who clarified the use of narrative configuration in qualitative analysis, narrative analysis is a method through which the researcher organizes the data elements into a coherent developmental account that gives meaning to the data (Polkinghorne, 1995). In this sense, the outcome of this methodology is an emplotted narrative, or a story. This analytic task requires the researcher to develop or discover a plot that displays the linkage among the elements as parts of an unfolding temporal development culminating the denouement. This method differentiates from paradigmatic-type narrative inquiry, which gathers stories for its data and discovers common elements across them to produce taxonomies and categories. The difference between paradigmatic analysis and narrative analysis, organized by Bolivar (2002) is presented in the table below.

Table 3. Bolivar's Contrast Between Two Types of Narrative Data Analysis

	Paradigmatic Analysis	Narrative Analysis
Modes of Analysis	Typologies, categories, normally established by the inductive method	Coordinate data and voices in a story or plot, making a new narrative story
Interest	Common themes, conceptual clusters, which facilitate comparison between cases. Generalization.	Specific, distinctive elements. To reveal the unique and particular character of each case. Uniqueness.
Criteria	Established scientific community; formal and categorical treatment.	Authenticity, consistency; understandable, unique character.

Results	“Objective” report comparative analysis. The voices as illustration.	Generate a new narrative history jointly – based on the different voices – by the researcher.
Examples	Analysis of conventional content, “grounded theory.”	Anthropological reports, good news stories or television.

In this sense, this study can be said as a combination of paradigmatic analysis, when categorizing the gathered photos on Ebola, and narrative analysis, when reconstructing the Ebola narrative with these categorized photos. However, the relative importance of the study’s focus relies on the latter, since the purpose of this study is to discover the reality construction and meaning-making process of the Ebola epidemic.

In order to do narrative analysis, Stake (1988) says that the researcher needs to have “some conception of the unity of totality of a system with some kind of outlines or boundaries (as cited in Polkinghorne, 1995). And through this process, the researcher is able to attend to the temporal and subliminal dimensions of human experience by organizing the events of the data along a before-after continuum (Polkinghorne, 1995). Among the types of plot organized, the most basic ones are 1) tragic (the protagonist does not achieve the goal) and 2) comedy (the protagonist does achieve the goal). Important point to note is that, in Polkinghorne’s words, the development of a plot follows the same principles of understanding of the hermeneutic circle; “the creation of a text involves the to-and-fro movement from parts to whole that is involved in comprehending a finished

text” (Polkinghorne, 1995). This is precisely the reason this study conducts a narrative analysis method to understand the reality construction of a global contagion.

Polkinghorne explains specific steps to configure the data into a narrative as below:

- (1) Arrange the data elements chronologically
- (2) Identify which elements are contributors to the outcome
- (3) Look for connections of cause and influence among the events and begin to identify action elements by providing causal relationship between them (“because of,” “in order to”)
- (4) Write a story, which is a temporal gestalt in which the meaning of each part is given through its reciprocal relationships with the plotted whole and other parts.

Thus, the researcher cannot simply aggregate or pile up multiple events but must create a systemic whole in which each elements is interdependent on the other. And the purpose of narrative analysis is not to provide a description of observation of real set of events which makes it inappropriate to ask if such narrative is a “real” or “true” story. The purpose is rather to provide a dynamic framework in which the range of disconnected data are cohered in an explanatory way that provides meanings and enlarges the possibility of interpretation of the real world. Chapter 5 depicts the result of such emplotment and the reconstructed narratives of the Ebola epidemic on different media environments.

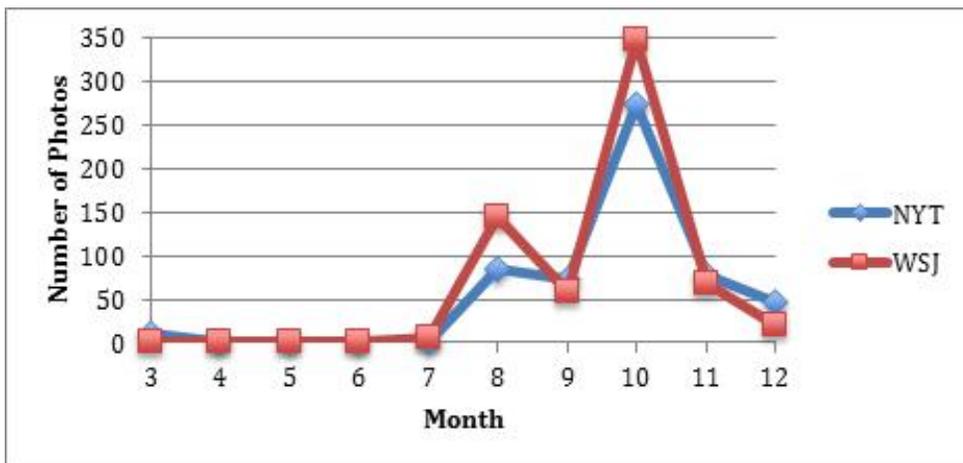
Chapter 5. Result

5-1. Chronological progress of photos on Ebola

(1) Quantitative progression of Ebola photos

Since the total number of photos in newspaper coverage was collected (*The New York Times*: 572, *Wall Street Journal*: 644), the study was able to track the absolute quantity of the photos distributed between March and December 2014. The monthly trend of the number of photos is shown in Graph 1.

Graph 1. Monthly trend of the number of photos on NYT and WSJ



While the first coverage of 2014 Ebola Outbreak appeared in *The New York Times* on March 24, only ten coverage photos were found in March. *Wall Street Journal* started to cover Ebola outbreak from April 1,

but only one photo was found in that month. Both newspapers did not report much on the crisis until July, as only one or two photos were found until then. The media's attention began in earnest from August, when the first known cases of Ebola were to be treated in the U.S. Kent Brantly, a doctor who worked at an Ebola treatment clinic in Liberia, and Nancy Writebol, a charity worker, contracted Ebola and were transported back to the U.S. Starting from this event, the media's attention to the Ebola epidemic increased, reporting on the virus's deadliness and its devastating impact on West Africa. The trend seemed to slow down in September, but it reached its climax in October, when several confirmed and suspected cases emerged outside West Africa. Thomas Duncan, an American who visited Liberia, contracted Ebola and died in Dallas, Texas; American freelance journalist Ashoka Mukpo was flown from Liberia to the U.S. for Ebola care; a Spanish medical worker was infected with Ebola in a hospital in Madrid, a first transmission of the disease outside West Africa; Nina Pham, a health-care worker diagnosed with Ebola was treated in a hospital in Atlanta; Kaci Hickox, a nurse detained in New Jersey for suspected infection of Ebola disobeyed quarantine order, criticizing its inhumane conditions; and other suspected cases of contraction from Australia, France, and Brazil were covered by the media. As Ebola epidemic was upgraded to a global issue, increasing numbers of coverage on international conference, announcement, and speeches were made available in this period, calling for global assistance and care. Additionally, as public distrust toward health professionals grew, articles exposing Western nations' inability to control the disease appeared. However, such interest in Ebola epidemic quickly cooled

down from November, even though the epidemic was far from being controlled.

As for Twitter photos on Ebola, it was impossible to collect the whole population of photos distributed in the specified period due to its large size and storage limitation. However, Symplur Signals⁸⁾, a web-based platform that displays analytics of global Twitter activities on healthcare topics, provided the life cycle of Ebola on Twitter.⁹⁾ This analytics is based on Tweet's texts, not images, but assuming that the number of Twitter images would be consistent with that of related Tweets, it was possible to see the numerical trend of Ebola-related tweets. The result shows a pattern that is consistent with that of newspapers.

(2) Categorical progression of Ebola photos

The photos of Ebola collected from newspapers and Twitter were sorted according to the aforementioned 12 categories, and the number of photos on each category was counted for comparison. The photos were also sorted monthly, in order to show the chronological trend of Ebola narratives. For newspaper photos, the month-by-month number and percentage of photos in each category are displayed in Table 4 and Graph 2. Since the numbers of photos from March to July are so small, the graph depicts the trend from August. The monthly progression of Twitter photos is displayed in Table 5 and Graph 3.

8) Symplur Signals (<http://www.symplur.com>)

9) Lee, T. M. (2015). The Life Cycle of Ebola on Twitter.
<http://www.symplur.com/blog/the-life-cycle-of-ebola-on-twitter/>

Table 4. Number of Newspaper Photos by Category

	March	April	May	June	July	August	September	October	November	December	Total
Map	0	0	0	0	0	8	2	9	5	3	27
Virus	0	0	1	0	0	5	4	6	1	1	18
Tragedy (on site)	8	1	0	0	3	102	46	75	48	17	300
Aid (on site)	2	1	0	0	4	29	29	56	19	9	149
Infecting outside	0	0	0	0	0	43	14	270	21	6	354
Speaking	0	0	0	0	0	14	10	97	13	8	142
Scientific study	0	0	0	0	0	10	0	27	13	7	57
Hope	0	0	0	0	0	4	6	24	12	4	50
Education	0	0	0	0	0	4	9	25	5	1	44
Caricature	0	0	0	0	0	0	0	0	0	0	0
Horrific	0	0	0	0	0	0	0	0	0	0	0
Irrelevant	0	0	0	0	0	0	2	5	0	3	10
Etc	0	1	0	0	0	11	9	27	8	9	65
Total	10	3	1	0	7	230	131	621	145	68	1216

Table 5. Number of Twitter Photos by Category

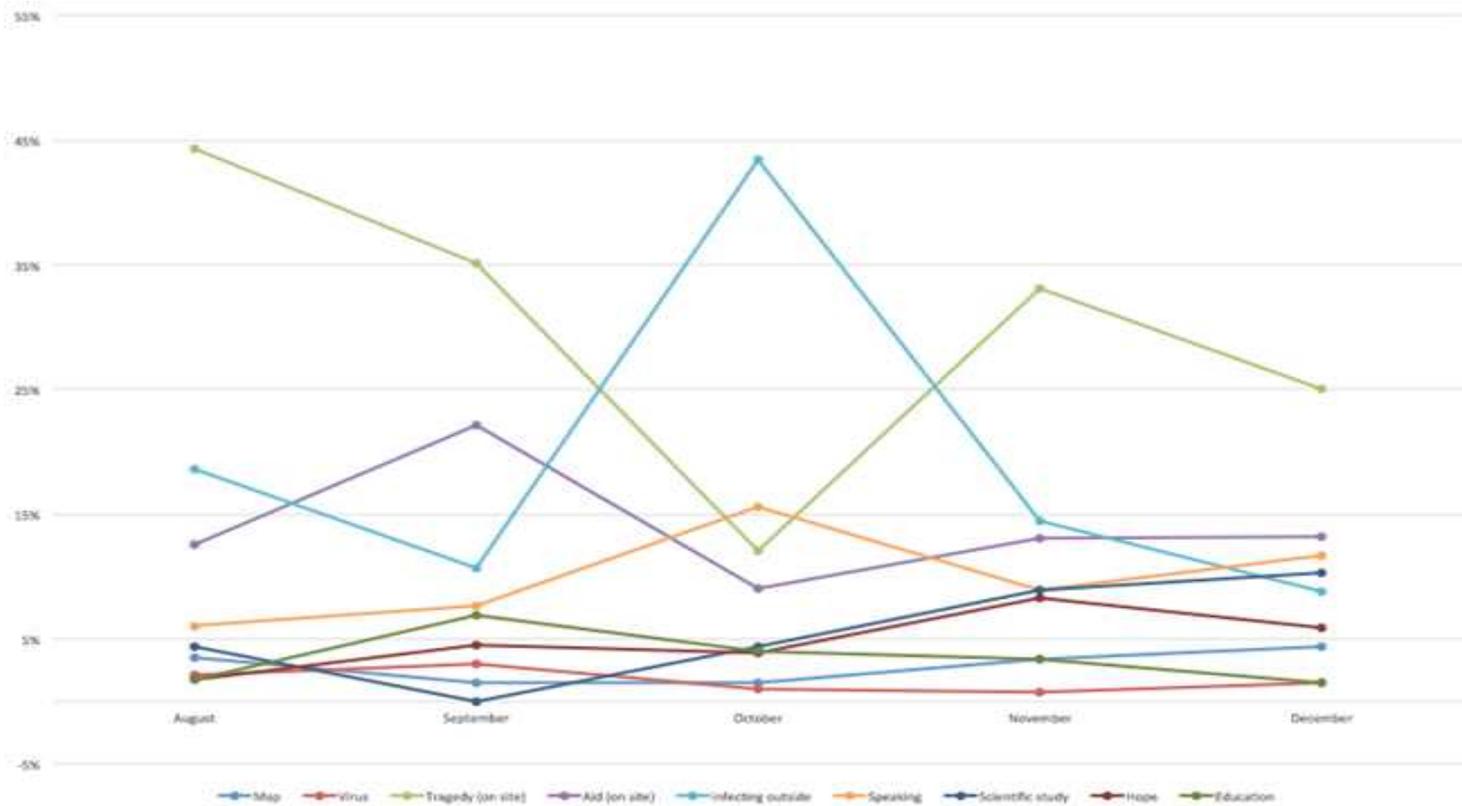
	March	April	May	June	July	August	September	October	November	December	Total
Map	23	8	8	15	9	8	2	2	6	3	84
Virus	27	27	20	13	7	5	1	5	4	4	113
Tragedy (on site)	24	36	19	48	45	44	40	7	21	14	298
Aid (on site)	23	35	15	22	36	20	17	4	23	14	209
Infecting outside	0	2	6	7	8	25	20	44	19	12	143
Speaking	10	2	21	1	4	8	13	23	8	15	105
Scientific study	5	5	7	8	4	13	11	7	11	12	83
Hope	1	0	3	1	2	6	22	10	32	30	107
Education	6	7	8	15	7	10	11	3	6	7	80
Caricature	9	8	9	3	4	3	2	25	8	21	92
Horrific	11	9	9	5	10	3	1	2	6	1	57
Irrelevant	2	3	4	4	8	1	4	13	3	12	67
Etc	9	8	8	8	6	4	6	5	3	5	62
Total	150	150	150	150	150	150	150	150	150	150	1500

Before analyzing each category's fluctuation in a temporal order, it is worth to compare and contrast the total numbers of photos by category in these two types of media. When focusing on the total number of newspaper photos, two categories stand out dominantly; infecting outside (354 photos) and tragedy on site (300 photos). However, for the Twitter photos, the categories that stood out were tragedy on site (298 photos) and aid (209 photos). From this result, the researcher suggests that such difference might have surfaced since the newspapers that the study chose as research corpus are of United States, which shows that their major theme of interest is whether the virus is spreading outside the African regions. While the Ebola epidemic did not receive much global attention while it was swirling terribly in the West African countries, it became a major media event when the infected Western individual was first discovered in August, as shown by the sharp increase in the number of newspaper photos at that period and the type of category that stood out the most (infecting outside). However, unlike newspapers, Twitter users are diversified among countries, although we admit that there are gaps among countries due to the discrepancies on their supply of Internet and average income.¹⁰⁾ As a result, the users' topics of interest are much more diverse and spreaded on a wider range. The researcher also suggests that the focus on 'tragedy on site' and 'aid on site' shows that the Twitter users are more interested on what is actually going on in the outbreak regions. Next are the two graphs that display the temporal progression of categories in percentage, in order to

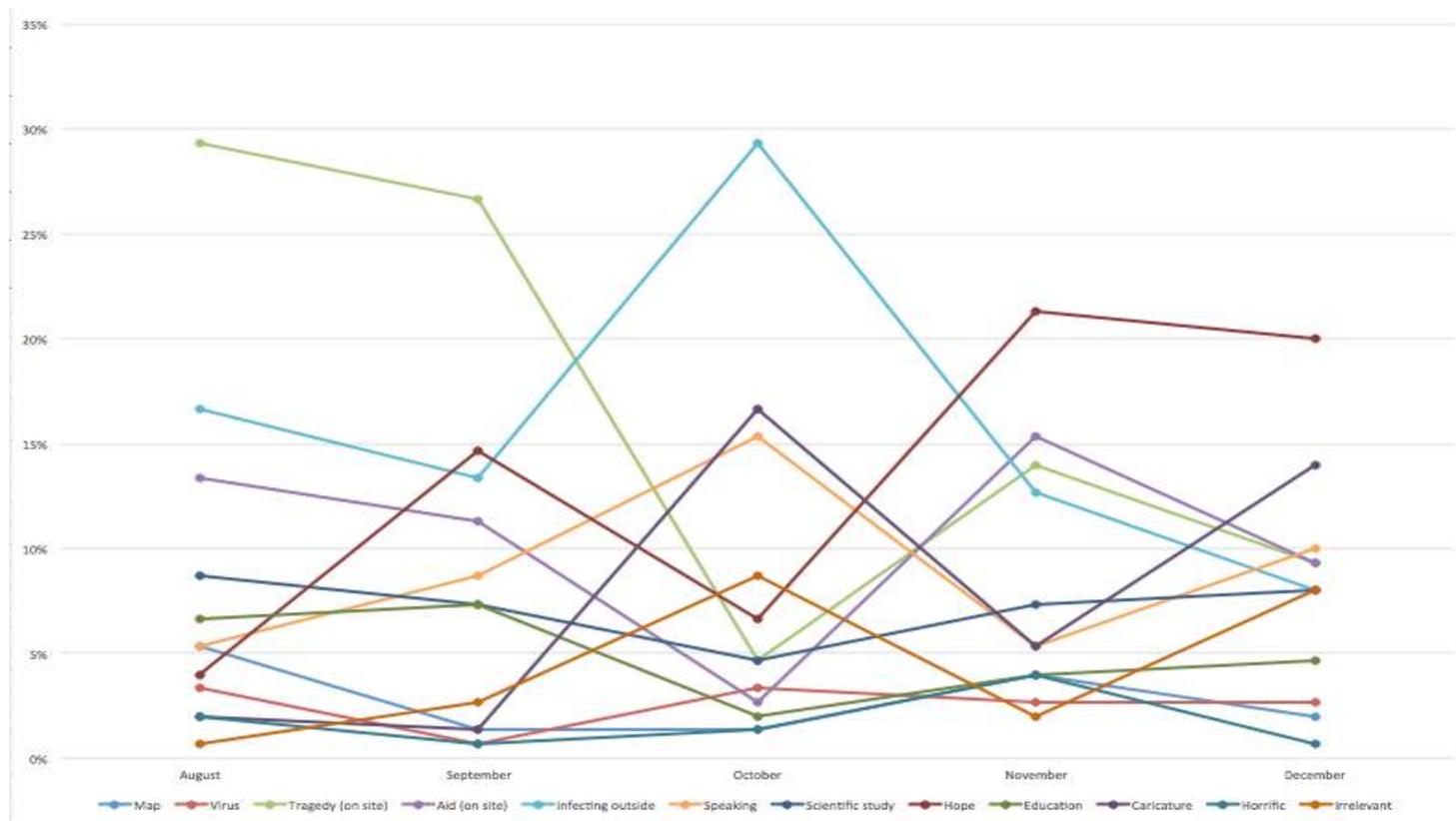
10) The Real Time Report. "Kuwait has most Twitter users per Capita", <http://therealtime.com/2014/01/14/kuwait-has-most-twitter-users-per-capita/>

better compare and contrast the photos' fluctuations between newspapers and Twitter. Chapter 5-2 delves deeply into these photos and closely examines the change in each category vis-a-vis the real time progression of the Ebola epidemic, and reconstructs the reality formation of the epidemic in a narrative form.

Graph 2. Percentage of Newspaper Photos by Category



Graph 3. Percentage of Twitter Photos by Category



5-2. Reconstructing the Ebola epidemic narrative

Although Tweets seem to be communicated randomly and fragmentarily through ‘retweets’ and ‘follows,’ the graphs show that the chronological fluctuation of categories forms some kind of a ‘significant’ pattern. In order to figure out whether it is possible to read the meanings of these photos that convey the visible characteristics of Ebola, the study reconstructed the images’ narrative progression in the context of the epidemic’s life cycle. This will be analyzed in comparison to the narrative formed in mainstream newspaper photos. Newspaper photos differ from Twitter photos since they are intentionally selected by professional journalists as they choose the images that best suit their stories. In other words, since journalists act as gatekeepers of information, filtering, editing, and analyzing them from particular perspectives, the photos are strategically chosen to serve specific narrative purposes. Reading such fluctuation of categories, researcher was able to emplot the Ebola narrative according to the steps mentioned by Polkinghorne. Specifically, after arranging the data elements chronologically, as the graphs display, the researcher looked for connections of cause and influence among the events by referencing the real events of the epidemic. As a result, the study identified five central themes in the categorical progressions of Ebola epidemic from both newspapers and Twitter that operate as core components of their narrative flows.

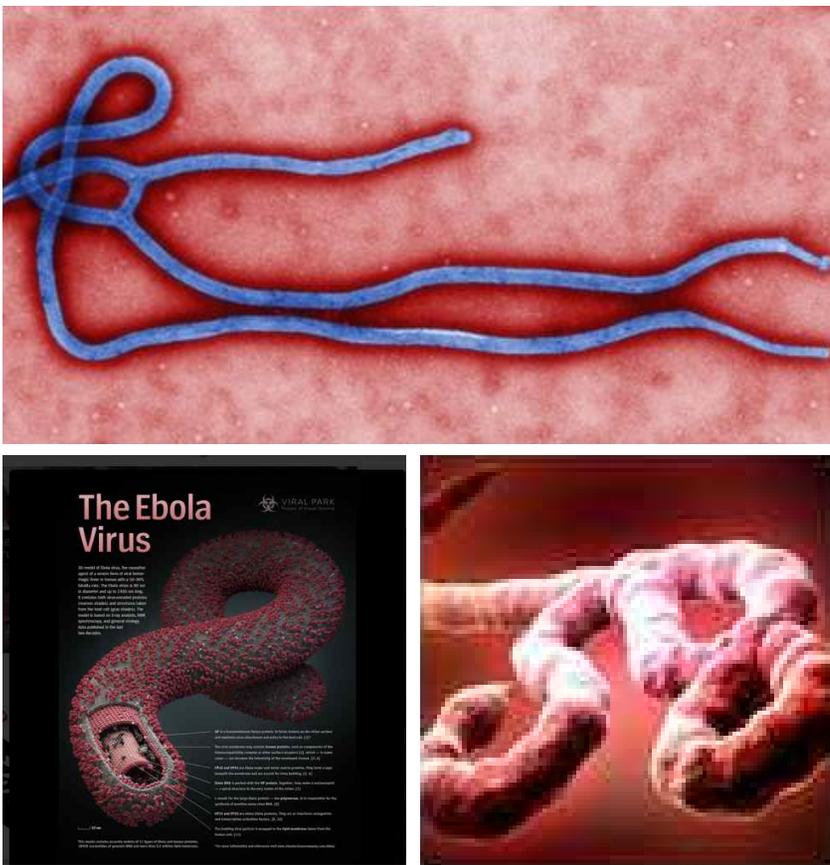
(1) Rhetoric of maps and virus

Although photos of maps and virus were rarely discovered in newspaper coverage throughout 2014 Ebola epidemic's life cycle, they were largely found in Twitter in the early stage of the crisis. In March, the photos of maps and virus each took up 18% and 15% of all the photos collected; these were the largest categories that were found in that month. While map images quickly decreased from April, the virus images were frequently found until May. The photo of map is for an objective and practical use, as it shows the locality of virus's spread with information on the number of infected cases and deaths; the microscopic image of virus too, is a factual and scientific representation of an epidemic that is invisible to human eyes. Through these images, the virus came to have a visible "body," and began to be perceived as something real; the crisis became an existing, tangible reality. Thus, these images can be seen as representations of human desire to control the unknown, to visualize the invisible by embodying it.

However, being more than just factual representations, these photos evoke a repulsive and terrifying atmosphere. First, the microscopic images of virus are mostly in reddish and purplish colors, highlighting the horrific nature of the disease. Also, their wrinkled, twisted formations easily remind one of apocalyptic horror movies in which mysterious, terrifying alien creatures from outer space invade the earth and cannibalize humans. This strangeness that the photos evoke makes the virus perceived as more unfamiliar and unknown; rather than serving to provide information to the

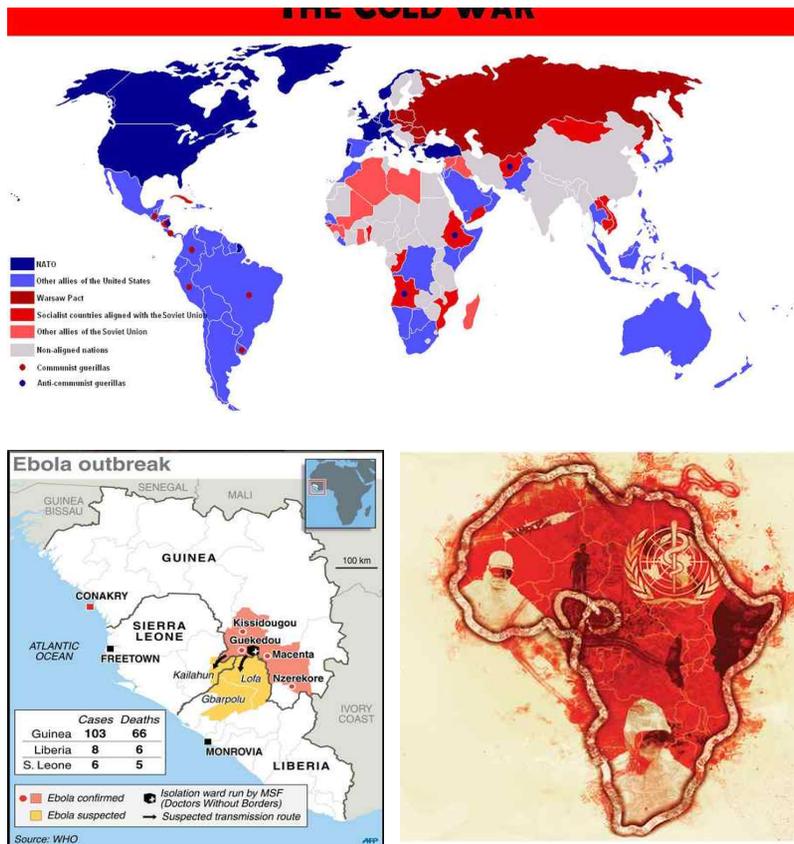
public, these images are materials mainly with emotional appeal, especially focusing on fear. In other words, such images of virus represent the public's collective imaginary on infectious disease. In relation to features of narrative that Bruner mentioned, such point reflects this narrative's genericness, which sets up the story's genre that provides a guide to the audience on how to understand the story. In this case, the narrative of Ebola is under the genre of horror, as people's normal and peaceful lives are disrupted by unknown beings that brought violence and fear.

Photo 1. Microscopic images of virus



Second, the photos of maps mostly displayed the African continent, coloring the infected area with reddish or yellowish color. This is highly analogous to images of maps that were spread during cold war, in which nations that adopted socialism were depicted as “red.” Maps on Ebola also remind such ‘red scare,’ as seen in <Photo 2>. These images on maps are disseminating discourse on the fear of ‘spill out’; spill out of socialism for those of the Cold War, and spill out of virus from the third world for those of Ebola epidemic. Such metaphors can also be found in the rhetoric of ‘containment’ that these two events both utilize. It reflects the Western’s hope to impound the virus in the Third World, creating the boundary between ‘healthy us’ and ‘unhealthy others.’ The image of maps emphasize such territorial imagination between the Western countries and the Third World, working as a mechanism to keep in track the distance between them, which means not only in the literal sense but the psychological distance between the tragedy and their daily lives. These maps also remind of the AIDS outbreak, which serves as a precedent, as the West remembers it as a failed case to contain a deadly virus that originated from Africa. Such point shows the Ebola narrative’s context sensibility, since these maps are assigning a context of a narrative on how to understand this crisis, by giving referential points on the traditional ways that they were dealt. Thus, the early spreading of the map photos on Twitter reflects the public’s mounting fear of the disease and the fail of containment.

Photo 2. Maps of the Cold War (Top) and Ebola Epidemic (Bottom)



(2) Emphasizing tragedy on site and apathetic images of aid

In newspapers, from July to September, a large number of photos focused on the tragic situation in West Africa. Similarly, from June to September, the majority of the Twitter photos were categorized as ‘tragedy on site.’ This shows that the major topics of Ebola discourse on newspapers and Twitter were consistent with each other in this period. As for the Twitter photos, a large number of them were relaying from mainstream

media sources, including newspapers and television broadcastings; this is logical since non-West African Twitter users had very limited access to the things that were happening on site. The Twitter posts from professional or freelance photojournalists dispatched to West Africa were also largely retweeted. Obviously, unprofessional photos taken by common Twitter users rarely attracted considerable interest from the public. Occasionally, however, there were snapshots of the scene taken by common users in West Africa, even though not many of them were found due to the technological limitations in those nations. Although the photos were of poor quality, they were accepted as significant because the users were on site and were able to deliver lively photos of the scene.

As time passed, the images of tragedy in newspaper photos started to emphasize the objects' facial expressions using close up. This indicates that the photographers' chance of contact with the victims increased, and at the same time, they tried to appeal to the viewers' emotions. These photographs are typically found among traditional media's photojournalism images of crisis. A lot of them depicted young children, reminding the viewers of the 'giver' and 'receiver' discourse of power relations between nations, as Sontag (2003) claimed. While further empirical research is required to argue this point, the newspaper photos of victimized children emphasized West African nations' fragility and powerlessness. This trend shows that newspapers are bound to the existing dominant discourse on infectious disease that originates from the Third World. The professional journalists cannot be freed from the traditional way of handling a contagion, whether such influence is exercised consciously or unconsciously.

Photo 3. Images of tragedy on site
(top: newspaper ; bottom: Twitter)



The Twitter photos, however, remained more impersonal. Most of the photos, while depicting tragedy, focused on the entire scene and background using long shots. This reflects the fact that the Twitter users' interest were resting more on the factual side of the situation on site, than on emotional attachment between the objects and the viewers. Such 'cold distancing' between the image objects and viewers seems to happen in Twitter because it is an ideologically unstructured space in contrast to mainstream newspapers. Twitter users are relatively free from the dominant discourse because of its non-hierarchical, unfiltered system.

On both newspapers and Twitter, fewer photos on aid and rescue were found than those of tragedy on site, but they tended to follow the trend. It is difficult to say which came first, since the number of both categories increased and decreased almost simultaneously throughout the trend. It is important to note that differing from typical images of rescue, which evoke a sense of hope, aid images of Ebola were highly apathetic. Since the health care workers' bodies were entirely covered up with protective suits, their facial expressions were totally hidden. For this reason, there was a blurred line between images of tragedy and aid, as photos of aid tended to create a ghastly atmosphere of emptiness.

Photo 4. Images of Aid



This reminds us of what McLuhan (1989) called media's 'alienating effect,' in which media rather make the audience feel more distant from the things presented by disassociating visual images from all other sense (as cited in Tomlinson, 1999). In Tomlinson's (1999) words "The medium acts as a sort of cordon sanitaire protecting our local spaces from the 'reality' of troubling distant events and alien practices," thus creating a moral detachment.

(3) Fear of virus “spill out”

First cases of infected patients being transported outside West Africa happened in August, which is reflected in the slight increase of ‘infecting outside’ category in both newspapers and Twitter photos (19% and 17%, respectively). This category drastically surged in October, however, recording 43% in newspapers and 29% on Twitter, as multiple infection cases outside West Africa occurred. Accordingly, the on-site photos plummeted both in newspapers and on Twitter, reflecting people’s dramatic loss of interest in what was happening in West African nations. Such a climaxing fear of the virus’s spread and its landing in one’s “own” territory can be seen as a cultural product of globalization. The fear of virus’s arrival through air travel was hyped, as images of airplanes and other transportations were frequently found in both media. These photos directly show that infectious disease is a cultural product of globalization and a new problem that today’s modern societies face. As previous literatures on globalization shows, these photos reflect the negative aspects of the “global neighborhood” since the crisis that happens in a distant nation can no longer be thought as irrelevant to one’s own. In other words, these images show the side effects of the technological advancement that contemporary societies blindly pursued.

In both newspapers and on Twitter, photos of patients outside West Africa were very personalized. The close-up shots of their faces were largely distributed with their names, and the pictures of patients’ family, neighborhood, apartment, and school activities were shared. These photos mark a turning point in Ebola epidemic’s life cycle, as the crisis is no longer perceived as a distant event but what is actually happening, and soon

will happen in people's front yards. The images on media no longer allow viewers on the spot of 'cordon sanitaire,' but function as live broadcasts of things occurring in one's neighborhood. Twitter photos during this period depicting infected cases on Western countries were also very personal and intimate. Such personalized photos evoked a familiar and emotional attachment to the patients as if they were someone that the viewers have previously known of, creating a sharp contrast to the images of the collective, anonymous deaths in West Africa.

Photo 5. Fear of infection



(4) International cooperation vs. containment operation

Consistent with the rise of ‘infecting outside’ category were the images of government and international organizations’ speaking. This category both rose in newspapers and on Twitter, reflecting the increase in global interest in this issue. Reading the images with accompanying explanations, national and international leaders urged global support for stopping the virus’s deadly attack, appealing to global citizenship and shared responsibility for this universal threat. Such images can be associated with the discussion of ‘imagined community,’ which demonstrates the weakening power of the nation-state and the rise of new kinds of kinship (Anderson, 1991). People that we have not known of become familiar and intimate due to the media’s spread of personalized images, and the images of powerful figures calling for cooperation further emphasize viewers’ imagination of “the world as neighbor.” These images can also be read in relation to Tomlinson’s discussion of cosmopolitanism, in which wider cultural commitment and responsibility are required of global citizens because of ‘enforced proximity’ caused by the media (Tomlinson, 1999).

However, while some of the images in this category called for global support, more images were talking about exercising quarantine and securitization operation in order to protect their nations, states, and neighborhoods from this “external threat.” For example, an image of Andrew M. Cuomo, the governor of New York, depicted him announcing mandatory quarantine orders to all doctors and travelers who have had contact with Ebola victims in West Africa. Photos of Jong Un, Kim the North Korean leader, illustrated that the country will close its borders to international

travelers for fear of infection. These images can be read in relation to the discourse on containment, which is states' tactic to compensate for the weakened legitimacy of nation-states, as they fail to protect their citizens. In order to regain authority, the states speak to the people's demand for safer and circumscribed home, by enforcing their perceived, imagined boundaries between nations. Therefore, the newspaper images of international and governmental speaking can be read as the manifestation of such political maneuvers, while those of Twitter reflect the public's demand for cordon.

Photo 6. Images of global support vs. quarantine



Notable category that only appeared on Twitter in this period is ‘caricature.’ Images in this category include cartoons and meme pictures that mock the experts’ inability to control the disease. These images directly reflect the public’s sentiment toward the crisis and the officials’ handling of it. The fact that these images were widely distributed on Internet, positioning on the ‘Top’ section in Twitter, shows people’s mistrust and antipathy to those in charge. Since there was no cure for Ebola and scientists failed to understand the disease completely, Ebola posed threat to epistemic modern societies and their belief in science, and the public’s anxiety and frustration to this fact were represented in these sarcastic caricatures. This point explicitly shows that going beyond the role of an information aggregator, Twitter served as a horizontal space for a public discourse. In relation to the context of reality, the public’s reactions were freely displayed and shared, differentiating the Twitter’s Ebola narrative from that of newspapers.

Also, in terms of Bruner’s features of narrative, these photos mark the breach of canonicity since they show how an implicit canonical state has been violated, or deviated from in a manner to lead people to see human happenings in a fresh way. Unlike the newspaper narrative that mostly sticks to the previous means on dealing with the infectious disease, Twitter narrative departs from it by suggesting an alternative ways to view the situation, by threatening the global leaders’ authority. Thus, these photos question the traditional ways that stories on infectious disease were told, showing that narrative is historically and culturally nonterminal in nature.

Photo 7. Caricatures criticizing experts' inability



(5) Message of hope

As the heated attention toward infected Western individuals cooled down, the newspaper images in fact lost much interest in the Ebola issue, with the number of Ebola images decreasing drastically from November. In Twitter, however, the category of 'hope' surged, as images of recovery, donation, and reconstruction were detected. These images tend to be very intimate and emotional, shot in close-ups and emphasizing the objects' facial expressions. Referencing the news articles of this period, Ebola epidemic

was far from being controlled since deaths were still increasing in West Africa. However, Twitter users tended to retweet images that portrayed such hope and optimism. These images typically depict fully recovered patients, smiling with their family. The images on site also portray children laughing, going back to school, and cooperating to reconstruct the village. This shows that Tweets no longer sank into the tragedy but started to demand more hopeful and positive messages on the epidemic. It is possible that people no longer wanted to see the shocking and desperate reality of the crisis and instead chose to fantasize that Ebola was now controlled, making it as an event of the past. Such overall flow of Tweets gives the impression that Twitter users are collectively directing the understanding of reality, through retweets and replies. It seems that there is a historically accumulated and shared frame, or pre-comprehension in understanding such infectious disease crisis.

Photo 8. Images of Hope



Chapter 6. Discussion

6-1. Reflecting the sociological meaning of reality construction narratives on social media

So far, we have examined the reality construction narratives on both traditional and new media, specifically newspapers and Twitter, and analyzed them comparatively. As a result, the study discovered that the employment of Ebola narrative was possible in both media, as there seems to be a coherent flow of images that structures the story elements. However, it is important to note that there is no guarantee that the general users of both media would read such large quantity of images carefully in the manner of researchers, or get exposed to them in a chronological order. Therefore, the study is preconditioning a position of an ideal reader when reconstructing the Ebola narratives as written in Chapter 5-2. In this sense, this study aligns with discourse analysis researches or representation studies since they also collect a logical corpus with justified means and excavate the ideological meaning underneath, by assuming the position of an ideal reader. Such methodology is reasonable since we cannot show any sociological effectiveness of such ideology without the role of a subject. Under the Structuralist regime, researches on traditional narrative space such as newspapers and television conditioned that the reality is structured through dominant ideologies practiced by institutions, and that through the critical analysis of the text we are able to reach such political structure on reality. This is because in the case of traditional media, the producers of knowledge

were relatively evident and fixed, since the institutions and the editorial boards have the gatekeeping power to control what to report and what not. Therefore, in the case of newspapers, the methodological approach to analyze the mediated reality by imposing order on the possible plot components seems to be valid.

However, it is necessary to examine if the same principle applies to social media, since in this case the subject of enunciation is equivocal. There is no central subject that has control over the information covered but multiple voices exist, as any users are able to contribute their own. The users are both the producers and audience of information and they have freedom to navigate among the individual posts in every different manner. In the process, Twitter's complex algorithm that is based on one's 'followings' and 'followers' influences on what information that an individual user encounters with. In this study also, the corpus of Ebola photos on Twitter is collected on a particular point of time, and in most cases the users do not encounter them in a temporal order following the Ebola epidemic's real time life cycle. Rather, these photos are provided as a huge chunk of data in a hierarchial order imposed by Twitter's algorithm. Thus, it differentiates from a traditional narrative space since the story elements are broken into pieces and scattered without order (Hong & Oh, 2015). It is the combination of Twitter's algorithm, individual user's navigating pattern, and the time point of searching that puts order into the #ebola photos. In other words, the reconstructed story of Twitter photos are never fixed; it is a multiple, multi-timed, and multifaceted text that is always changeable according to the order of importance that is conditioned

by time, network, and hashtag (Hong & Oh, 2015).

Such point in many ways refers to Andrew Gibson (1996) and Mark Currie's (1998) claim on postmodern narrative theory, which no longer assumes the coherence and homogeneity of narrative. Mentioning Virilio's (1991) idea on postmodern space that "the geometric dimensions are increasingly ceding to fractionary dimensions and becoming nothing more than momentary surface effects" (as cited in Gibson., 1996) Gibson claims that the reality should be understood as a world of dispersed or scattering structures whose amplitude can no longer be measured; it rather "offers us the space of the real as a multiple for radically indeterminate space." As a result, the narratives in such postmodern space exist fundamentally in a virtual form. Gibson calls this as change from "plot tree" to "plot network," since the plot appears as a process rather than a stable sequence and the players are able to have a multiple number of plot experiences rather than a single one. Therefore, in terms of postmodern narrative theory, "narrative space is now plastic and manipulable - it has become heterogeneous, ambiguous, pluralized, opening up as a variable and finally indeterminate feature of any given narrative world" (Gibson, 1996). Such claim to deconstruct the narratological system as a whole no longer assumes the reader's central position in interpretation or the existence of network to tie the shattered pieces of reality to construct the whole, when understanding the reality construction process as a particular form of knowledge. In other words, the reality and knowledge do not exist under an overarching pattern but are fundamentally sporadic, random, and accidental, like "an island created contingently over a swirling ocean of disorder" (Hong & Oh, 2015).

The same also applies to the corpus and narrative that this study reconstructed; it is important to note that the story of Ebola on Twitter photos is an unstable one that can always change with the players' participations, which can vary from merely clicking 'likes' to updating new post. Therefore, it is important to acknowledge that today's media users are positioned in an informational environment that enables them to encounter multiple plot experiences that exists as a 'parcours' (narrative as a voyage or 'course through'), rather than a 'narrative discourse.'

6-2. Latour's monadology and the relationship between 'individual' and 'aggregate'

At this point, it is necessary for us to ask what it means to analyze the 'part,' which in this case, the study's reconstructed Ebola narrative from the Twitter photos, in relation to the 'whole,' which is the aggregate of diverse narratives possible as a result of all Twitter activities. In other words, if it is impossible to collect the whole and the organized structure of digital corpus is pluralistic and unstable, how do these collective activities on social media mediate the relationship between an individual and the social?

As mentioned above, this study's research corpus, which is collected at a particular point of time by searching #ebola, can be likened to an island that is momentarily crystallized upon the ocean of disordered data. In order to deduce the sociological meaning of this data set, we apply Bruno Latour's (2012) suggestion on the epistemological turn from 2 level stand

(2-LS: one for the element, the other for the aggregates) to 1 level stand that eliminates the distinction between the level of individual component and that of aggregated structure. Also, the study refers to the insights brought from the study of Hong & Oh (2015), which applied Latour's theory on Twitter users' collective action during Haiyan Typhoon in the Philippines. Latour argues that in our current digital network environment that allows us to follow people's digital traces no matter its quantity and the time passed, there is more complexity in the elements than in the aggregates. Therefore, while it was commonsensical for existing sociology to treat data about social connections by defining two levels, such paradigm on the position of social order should be shifted, in order to overcome the reduction of relationship between individual and social.

In order to explain this point, Latour brings Tarde's notion of 'monad,' which can be defined as "a historical and variable 'real' that is created by one's navigation between the individual and structure according to mutual connection" (as cited in Hong & Oh, 2015). In relation, this study's research corpus that is composed by searching #ebola can be understood as a monad. Using this concept of monad, Latour explains how each individual's different activity forms a momentary order when viewed as a whole, like the narrative structure that we found from the Ebola photos. Although in the 2LS perspective it was thought that there is a dispatcher, or a central controller that organize the behaviors to create a structure, Latour argues that this is a monad, not an emerging structure, as each monad possesses its own particular view of the 'whole.'

With such change in perspective, we are able to witness a paradigm

shift in social science research. The existing researches mostly preconditioned the difference between the individual and aggregates and separated the micro and macro levels while analyzing the data. In terms of existing literatures on reality construction, as mentioned by Hong & Oh, researches on discourse analysis, semiotic analysis, and actor-receiver analysis all fall into this category as they attempt to excavate the ideological mechanism or dominant meaning under the collected texts. These studies assume the existence of structure and explain the phenomenon as the result of structural power operating on the content production. The analysis that this study conducted on the newspaper images on Ebola falls into this category also, as its purpose was to find the ideological meaning from the narrative structure by collecting all the coverage photographs from the selected newspapers. However, in terms of the social media space where Latour's monadology can be applied, we are able to replace such 2LS epistemology by substituting our notion of 'a part of the whole' to 'each individual being's own particular view of the whole' (Hong & Oh, 2015). Applying this idea, the #ebola corpus is a result of connections that are designed by various modes of navigation between data, not a result of interactions between individuals to create the whole. In other words, because we are nowadays able to access innumerable quantity of news tweets of a particular issue, the tweets that an individual encounters and the aggregation of whole tweets became flat, or similar enough for us to deduce the sociological meaning from each connection of a particular perspective (Hong & Oh, 2015). As a result, through Latour's monadology, we justify that there is enough regularity in 'the parts' (which is in this case the study's

reconstruction of a particular Ebola narrative) to comprehend the collective imagination, or the “reality” of the crisis, without reducing the set of data in a binary relationship between ‘individual’ and ‘aggregates.’

Table 6 summarizes such contrasts between the level stands in relation to the study’s dataset from two different media.

Table 6. The contrasts of reality construction mechanism between newspaper and Twitter

	Newspaper (mass media)	Twitter (social media)
Subject	Institutional entity	Individual
Level stand	2-LS Individual-structure	1-LS Monad
Type	Media object	Algorithmic object
Content	Fixed textuality Unchangeable	Unstable textuality Changeable
Formation	Ideologically structured enunciation	Multiple voices
Corpus	‘Whole’	‘Part’
Reality Construction	Narrative	Possibility space for Narrative

Chapter 7. Conclusion

To sum, the study analyzed the Ebola narrative through newspapers and Twitter images in time sequence. The purpose of the study is to examine what possibility the collective data on newspaper and Twitter provide for constructing the reality and figure its sociological meaning. The research was conducted by collecting images on Ebola in the coverage of *The New York Times*, *Wall Street Journal* and Twitter, and analyzing their contents and distribution over time. For newspapers, all images in Ebola coverage were collected, while for Twitter, the 'Top' 150 photos were sampled each month due to the impracticality of collecting the whole population and for the purpose of following the medium-specific algorithm that users encounter when searching #ebola. After research corpus was collected, the photos were sorted into 12 categories on a monthly basis. Based on narrative analysis, which gives a causal structure over a heterogeneous set of data in the idea of emplotment, the researcher read the fluctuation of categories chronologically to discover a narrative pattern. The result showed that the newspaper images started to manifest a trend from August, illustrating the following narrative; images highlighting the tragedy and desperation occurring on site -> fear of infection spreading outside West Africa -> ambivalent international and governmental speaking of global cooperation and containment operation -> the miserable consequences of the epidemic to African nations. However, the Twitter narrative on Ebola started from March, first depicting microscope images of virus that emphasize the imagination of an unknown enemy -> tragedy happening on site in a

perspective of cold distance -> emotional response to virus's spread to Western nations -> caricatures mocking the governments' and organizations' inability to control the virus -> messages of hope that mark the epidemic's end, not in a real sense but in people's perception. Thus, the study identified that chronological processions of Ebola images on both mainstream and social media were following the elementary narrative structure that was necessary to understand the reality. Meanwhile, the different characteristic of newspaper and Twitter narratives enables the research to suggest that Twitter is an ideologically unstructured space, relatively free from traditional grammar on framing disease discourse. Referring to the previous literatures on Twitter's relationship with news reporting, this maybe because unlike newspapers in which few human actors (the editorial board for example) hold the decision making power on what to report and what not, information on Twitter is mediated by algorithms that the user activities, such as 'like' and 'retweet' play the most part. Also, the graph of newspaper's monthly distribution of categories suggests that there seems to be two dominant topics in covering the epidemic, while others remain minimal: 'tragedy on site' and 'infecting outside.' On Twitter, however, the distribution is much more diversified, as more categories proceed unstably and capriciously, adding more colors to the Ebola narrative.

The purpose of this study in some ways aligns with the interest of 'ambient journalism' researchers, as they were also interested in Twitter's journalistic function and its possibility of participating in users' reality understanding processes. As mentioned in chapter 3-2, these studies assessed Twitter as a field of citizen journalism in crisis situation, as it

instantaneously spreads information of the actual site and allows interaction between users. Such researches on ambient journalism argue that Twitter is practicing journalism by operating awareness system through ordinary, and always-accessible information. An important point to mention is that in the system of ambient journalism, users may not keep in touch with all the information that is incessantly produced. In other words, people do not follow the information comprehensively but are exposed to only parts of them, by looking at Tweets or retweets of their followers or searching a particular hashtag at one point of time. Bruns & Highfield (2012) recognized such features of Twitter's informational environment and said "the resultant knowledge base which is established and continuously maintained through these processes exists everywhere and nowhere at the same time." In other words, the users can only assume the whole flow of the story in their shoes that perceiving the reality becomes fundamentally virtual.

As a result, the study acknowledges that there is no guarantee that newspaper readers and Twitter users consume such images in a chronological order as the above graphs display. The data only show that people were positioned in such an informational environment that could be exposed to these photos. The Ebola narrative written in chapter 5-2 is a story that an ideal newspaper reader, or an ideal Twitter user might have reconstructed while they view these media. In other words, the narrative that the researcher read is a preferred interpretation of Ebola that people might have possibly read, under the human history's previous understanding of crisis. Thus, this study can be understood as a sub-topic of discourse

analysis research, as its purpose is to figure the discourse's ideological effect or reality-formation by assuming an ideal reader. This is because the text's sociological effect can be only practiced through readers, who are the subjects of interpretation.

Another limitation of this study is the fact that in today's journalism landscape we cannot explicitly split the worlds of print media and social media as they are getting more and more interconnected. The traditional value and manuals of print journalism is meeting an unprecedented change to the digital turn and is adopting new procedures to adapt to this transition. Not only the news outlets have their own websites that post online news and individual accounts on various social networking sites, but applications such as Snapchat has launched a news platform 'Discover,' which allows users to view news in the form of Snapchat stories that only lasts 24 hours.¹¹⁾ Snapchat has partnered with CNN, Yahoo News, ESPN and others, radically changing the forms and reception of news. Therefore, it is important to consider such transformation of media ecosystem and the redefinition of journalism in future researches.

At this point, the study ends by reconsidering the user experience of social media and suggesting a future research area that seems necessary to investigate. As mentioned above, Twitter users can meet these images irrelevant to the timely order of the crisis and read them in every different path. The narrative on Ebola, which is constructed through contacts with temporally reversible corpus, is not a fixed, stable story of one point of

11) Tweedie, S. (2015). "How to use Snapchat's New 'Discover' Feature." Business Insider. Retrieved 5 June, 2016, from <http://www.businessinsider.com/how-to-use-snapchat-discover-feature-2015-1>

time but a pluralistic, multi-timed, and multifaceted text. This point can be related to the postmodern narrative theory that Gibson (1996) and Currie (1998) claimed on. Gibson argued that a shift from coherence to complexity is occurring, as researchers are departing from the view of narratives as stable structures. In the perspective of a post-structuralist critic, narrative should not reduce its complexity and heterogeneity while the key is to sustain contradictory aspects of narrative through deconstruction. The postmodern narrative approach to narrative no longer assumes the process of reality-formation as a form of knowledge, the reader's central position in interpretation, nor the existence of network to tie shattered pieces of reality to construct the whole. The order of ration and reality does not exist as pattern but is fundamentally sporadic, random, and accidental (Gibson, 1996).

Also, understanding that the study's emplotted story is only one of many ways to encounter with the Ebola narratives from Twitter photos, the study contemplates on what it means to analyze 'a part' instead of 'the whole' in the digital era, in relation to Latour's monadology. As a result, the study justifies that there is enough regularity in 'the parts' (which is in this case the study's reconstruction of a particular Ebola narrative) to comprehend the collective imagination, or the "reality" of the crisis, without reducing the set of data in a binary relationship between 'individual' and 'aggregates.' In other words, we are able to grasp an understanding of the Ebola situation without analyzing the whole, or the aggregate of the multiple stories on the epidemic. As a conclusion, we suggest future researchers to consider an empirical way to test the existence of multiple narratives in

social media context, possibly utilizing network analysis and other computing measures. Also, it is necessary to further dissect the meanings of hidden layers, or in other words algorithms, underneath the digital space in order to better understand the implications of users' experiences with virtual narratives that are pluralistic and ever-changing in nature.

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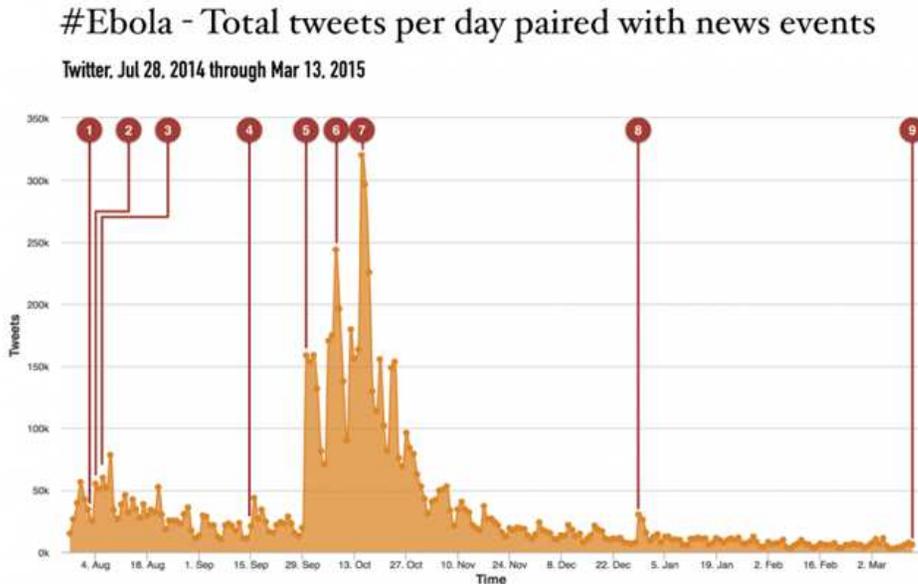
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Appendice

Appendix A: Symplur Signals data



1. August 2, 2014: First US Ebola patient arrives at hospital in Atlanta, Georgia.
2. August 5, 2014: Second US Ebola patient arrives at hospital in Atlanta, Georgia.
3. August 7, 2014: First European Ebola patient arrives in Madrid.
4. September 15, 2014: President Obama announces that the US is sending up to 3,000 troops to West Africa to assist in responding to Ebola outbreak.
5. September 30, 2014: Man in Dallas, Texas is first to be diagnosed with Ebola on US soil.
6. October 8, 2014: Man diagnosed with Ebola in Dallas, Texas dies

of the disease.

7. October 15, 2014: Second nurse caring for Ebola patient in Dallas, Texas is diagnosed with the disease.

8. December 29, 2014: Woman is first to be diagnosed with Ebola in the UK.

9. March 13, 2015: Healthcare worker who contracted Ebola while volunteering in a Sierra Leone arrives at Maryland hospital.

국문초록

전 지구적 전염병에 대한 집단적 상상력 : 신문과 트위터에서 유통된 에볼라 이미지의 현실구성 내러티브 비교 분석

이 연구는 2014년 서아프리카 3개국에서 발병한 에볼라 바이러스 사태에 대한 신문 보도 사진과 소셜 미디어에서 유통된 이미지를 비교 분석한다. 본 연구의 목적은 서로 다른 미디어 플랫폼이 에볼라 사태와 같은 전 지구적 위기를 어떻게 조직하며 대중은 어떤 매개된 현실들을 마주하게 되는지 알아보는데 있다. 더 구체적으로, 트위터, 페이스북과 같은 사회 연결망 서비스에서 이용자 개개인의 행위들은 분절되고 제각각이어도, 이 온라인 공간에서 이용자들이 보게 되는 전염병에 대한 전체적인 모습은 정합성 있는 현실을 보여주는지 알아보고자 한다. 다시 말해, 트위터 공간에서 유통되는 에볼라에 대한 정보들이 통합적으로 보았을 때 내러티브의 구조를 띄고 있는지, 그리고 이는 신문에서 구성된 내러티브와는 어떤 유사점과 차이점이 있는지를 탐색한다.

이를 위해 본 연구는 현실구성과 내러티브론에 이론적 근간을 두고 있다. 내러티브와 실제 이벤트의 관계를 탐구한 기존 이론들을 검토한 결과, 본 연구는 내러티브를 인간의 삶에서 일어나는 다양한 이벤트, 사건, 행위들을 모아 시간적으로 구조화된 플롯을 만들어내는 담론 구성체로 정의한다. 연구자는 이와 같은 내러티브론의 접근 하에서 에볼라 전염병에 대한 시각 데이터를 수집한 후 내러티브의 구조로 조직화하

였다. 이를 통해 이 사건의 현실 구성을 파악하고 의미를 생성하는 과정을 살펴보고자 한다.

연구를 수행하기 위해, 미국의 주류 신문들 (*Wall Street Journal*, *The New York Times*)과 트위터에서 2014년 3월부터 12월까지 유통된 에볼라에 관한 사진들을 수집해 계열 분석과 내러티브 분석을 혼합해 사용한다. 먼저 계열 분석의 경우, 각 사진에서 드러나는 주제를 바탕으로 연구 코퍼스를 12개의 카테고리로 나눈 후 월별로 분류하였다. 다음으로, 분류된 사진 내러티브의 시간 흐름에 따른 그래프 변동을 읽으면서 리코르와 폴킹혼이 이론화한 ‘플롯 구성하기 (emplotment)’의 단계에 따라 에볼라 이야기를 재구성하였다. 그 결과, 주류 신문과 마찬가지로 트위터 이미지들 또한 현실을 이해하기 위해 필요한 기본적인 내러티브의 구조를 띄고 있음을 볼 수 있었다. 그러나 트위터에서 구성된 내러티브는 그 내용 면에서는 신문보다 이데올로기적으로 덜 구조화된, 또는 전염병에 대한 전통적 담론과는 차별화되는 이야기를 보여주었다. 연구자는 이 같은 차별점이 발견되는 이유는 몇 명의 인간 행위자들이 무엇을 어떻게 보도할까에 대한 결정 권한을 가지고 있는 신문과는 달리 트위터 포스트들은 이용자들의 행위(예를 들어 ‘좋아요’를 클릭하거나 ‘리트윗’을 하는 것)에 따라 구성된 트위터의 알고리즘에 의해 매개되기 때문이라고 제시한다.

논의 부분에서 본 연구는 오늘날 디지털 미디어 환경에서의 현실 구성 내러티브가 가지는 사회적 함의를 고찰하고 신문과 트위터 데이터를 통해 추출한 에볼라에 대한 이야기가 어떤 위상에 있는 이야기인지 탐색한다. 특히 트위터 공간에서의 내러티브 구성이 가지는 의미를 고찰하기 위해 현대 사회에서 미디어 내러티브에 대한 이용자들의 경험이 다원적, 산발적이고, 불안정하며, 언제나 변화 가능한 모습으로 바뀌고 있

음을 지적하는 포스트모던 내러티브 이론을 인용하였다. 또한 본 연구에서 구성된 이야기가 트위터 공간에서 이용자들이 마주할 수 있는 여러 다양한 이야기들 중 하나임을 인정하면서, 디지털 시대에서 ‘전체’가 아닌 ‘부분’을 분석하는 것의 의미를 라투르의 모나드론의 입장에서 성찰하였다. 마지막으로, 본 연구는 이러한 다중 내러티브들의 존재와 그 의미를 확인할 수 있는 실증적 연구들과 이용자 개개인마다 다른 내러티브의 경험을 야기하는 디지털 환경에서의 은닉 레이어, 또는 알고리즘에 대한 후속 연구의 가능성을 제언한다.

주요어 : 전염병, 에볼라 바이러스, 현실 구성, 내러티브론, 영상 내러티브, 이미지, 소셜 미디어, 항시적 저널리즘

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