

MEMORY POLITICS: SOCIAL MEDIA MEMORY PRACTICES
IN THE KOREAN FERRY *SEWOL*
MEMORIAL WEBSITE

by

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ABSTRACT

The rise of digital media technologies has changed how we remember the past. This study examines the memorial functions of Web 2.0 and digital memories. I suggest that memory practices that use Web 2.0 technologies are not just extensions of older forms of human memory practice based on a dichotomy between technological and human memory practices in which one is seen as determining or changing the other; memory practice with/in materiality, specifically Web 2.0 memory practice, is a collective where heterogeneous realities are mingled in the same domain, and the intersection entails new meanings, capacities, and potentials of memories. Borrowing methodological insights from actor-network theory (ANT), I examine the human actors (users and administrator), Web 2.0 technologies (interface and database/server), and political factors (terms and policy) on the same ontological level to show how the mixture of social factors and technological elements becomes memories and/or memorial website. To illustrate this human-technical network of social media memory practice, I examine the online memorial site for the Korean ferry *Sewol*, *Citizen Network Remembering The Sewol* (www.sa416.org), an extensive online public documentation that commemorates the tragedy of the Korean ferry *Sewol* sinking. Through this study, I reveal the ways in which the various actors, including humans and nonhuman, function, and I show how each node of network intersects in the practices of memory production and the politics.

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CHAPTER 1

INTRODUCTION

“Your friend shared a memory from April 26, 2014.” A familiar photo came up on my Facebook NewsFeed one day. The photo was taken 1 year prior by my friend when I traveled with her last year. The photo pulled me to the past without any effort of recalling. It was the “Year in Review” service of Facebook where I can see the post I or my friend uploaded on the same day last year or years ago. I (or my friend) archive and recall the past, but Facebook simultaneously evokes and recalls my memories of the past unexpectedly and automatically. This is not a story for Facebook only. Flickr, YouTube, Instagram, and any other websites or blogs where we can preserve our daily to special events create a huge archive, and function as reminiscent media. Now, we are living with/in digital devices and social media; “digital memories become us” (Hoskins, 2009, p. 1). From mundane to special and from individual to collective, our lives are stored in digital forms and become digital memories. Memories are embodied and emerged here and there on the Web in different forms of practices.

Memory is inherently organic but the act of remembering is inorganic – the act is social, political, cultural, and even technological. Specifically, even before digital memories, memories have been coupling with technologies and/or media, which is

a medium of storage. Ephemeral and intangible memory is embodied in a specific materiality. Belinda (2003) has emphasized technology as the main focus for memory studies, specifically in *The Erasure of Technology in Cultural Critique*, she argues that:

There is no live memory, no originary, internal experience stored somewhere that corresponds to a certain event in our lives. Memory is entirely reconstructed by the machine of memory, by the process of writing it retreats into a prosthetic experience, and this experience in turn retreats as we try to locate it. But the important point is this: our perception, and our perception of the past, is merely an experience of the technical substrate.

As well as human perception of memories, the materiality embodied memories – from human body to memorial, photo, film and digital media – traverse different systems of social, political, cultural time and/or space. Thereby, memories and meanings of memories are continuously reconstructed with/in its format of contents. For the act of remembering, contents of memories and their media are always dialectical pair.

From Plato to the present, organic memories have been externalized by and have coevolved with technology. The digital evolution has not changed this interindividual coupling between memories and technology. However, digital media introduces “different equations of ephemera into our remembering process and capacities as well as new means to preserve, restore, and represent the past” (Hoskins, 2009, p. 31). This relevantly new technology of memory raises question about ways of re/constructing memories in Web 2.0 environment.

This research explores technology of memory, focusing on the new topography of Web 2.0 memory practice. In this thesis, I actively interpret technology but avoid the technological deterministic approach to the memory media, the argument that media formats determine our meanings of memories. I draw on one tradition of science and

technology studies (STS), rethinking media with both a degree of technological logic and its social usage. Moving away from technological determinism, STS has philosophical, sociological, and historical accounts of science and technology, examining the social contexts and contingencies of technology. STS assumes that technology is always in the making; and both social factors (culture, social usage, economics, and politics) and material factors (such as artifact, technological code, design, and architecture) are vital [f]actors to consider.

Following the STS perspective, I explore Web 2.0 memory practice through a case study of one memorial website in South Korea, *Citizen Network Remembering the Sewol* (www.sa416.org). By drawing a sociotechnical network of memory practice, I ultimately examine interactions and power relations to meaning-making in Web 2.0 memory practice.

CHAPTER 2

TRANSDUCTIVE MEMORY PRACTICES

Materiality and memory practice

In *The Work of Art in the Age of Mechanical Reproduction*, Benjamin (2008) delineates tensions between a loss and a gain from technological reproduction of artworks. The term “aura,” which means “the unique apparition of a distance” to an authentic space and time, explains how technological reproducibility changes artworks (Benjamin, 2008, p. 23). Through technological reproduction, artworks can be repeated and more easily exhibited; the repeatability and mass existence enable the viewer to get closer to things, but the art loses authenticity. Authenticity is proven by history, which means untouchable physical duration, unique ownership, and the historical testimony (Benjamin, 2008, p. 22).

Beyond the term “aura” itself, the gist of Benjamin’s argumentation is about distance. Benjamin (2008) draws boundaries between the natural and technological, articulating the intervention of materiality into the relationship between nature and the patterns of human perception. In Benjamin’s articulation, technology, materiality, and any other things other than natural or natural human perception are explained in the same vein. Following Benjamin, I use technology as an echoing term of materiality in that

both turn other elements or qualities tangible and visible. After Benjamin, most studies about materiality have focused on the same theme – the collapse of distance between nature and human perception caused by cultural artifacts and new technologies.

Technologies bring things closer to the masses (Benjamin, 2008, p. 22); mechanical ages have extended human bodies and perception in space (McLuhan, 1964, p. 3); and technologies replace a sense of here and there with the mental confusion of near and far (Virilio, 1995, p. 35). The real landscape, painting, and sculpture, which have aura in Benjamin's explanation, lose their distance because everything is brought equally close within a photo and film. Now, different physical locations “meet within a single electronic screen;” that of the computer (Manovich, 2002, p. 174).

The mediation of technologies toward getting things closer has also resonated in memory studies. After Benjamin, the decay of aura has been frequently experienced in technical memory practices – films, photos, museums, documentaries, fiction, pop songs, and Internet sites. Even though the authenticity of the Holocaust is intangible, we can experience the event in the Holocaust memorial museum at Washington D.C., the comic book *Maus* (1980), the movie *Schindler's List* (1993), and several digital archives. Such memory vehicles bring the past close and visible to the masses and reconstruct the past (Landsberg, 2004).

Such things other than natural human perception have been called materiality, technology, and/or a vehicle of memories that enable intangible human memories and perception to become visible and tangible. Bringing the past tangible and closer, memory is externalized outside of human bodies and embodied in different cultural and material forms. Unlike history, memory studies assume that “evidence of the past resides in every

mode of public expression in everyday life,” such as wedding ceremonies, gestures, household artifacts, cloths, and art exhibitions (Zelizer, 1995, p. 232). Besides such cultural forms, human beings have spontaneously cultivated enduring memory vehicles to close the distance on the past and keep the ephemerality of a specific moment. Here, materiality – architecture, monument, photography, film, and computer – is tied to memory practices, and “cultural and individual memory are constantly produced through, and mediated by, the technologies of memory” (Sturken, 2008, p.75).

I am using the terms *technologies of memories*, *memory media* and *memory vehicle* to indicate any materiality that embodies a specific moment of the past and evokes memories. It is axiomatic that technologies collapse the distance between nature and human being, as well as the past and the present. Through technologies, human beings draw the past in the present and re/construct the past in the interaction with the present. Media and memory, however, are not separate entities, which means technologies enhance, transform, extend, and replace original memories, but memory vehicles continuously shape our memories, “warranting the term ‘mediation’” (VanDijck, 2007, p. 16). The term “mediation” seemingly implies a linear relationship that technologies serve as neutral memories with its fixed materiality and transmit it; however, as Sturken (2008) noted above, technologies not only mediate but also produce memories. Mediated memory objects never represent a fixed moment of the past; memory vehicles produce temporal meanings and relations of memories in the interaction with different systems of notions at different periods of time.

In this sense, both human beings and materiality produce memories and engage memory practices. The relationship of nature-technology/materiality-human has

prompted discussions about the distance between nature and human, but science and technology studies (STS) has frequently explained the distance between machine and man. From man and machine coupling (Simondon, 2010) to the figure of the cyborg (Haraway, 2006), most STS scholars have concentrated on explaining an inseparable relationship between man and machine and the interplay between them. Going back to memory practice, memories are continuously reconstructed in collectives – “assembles human and non-humans” – following Mackenzie’s (2002) term. Mackenzie (2002) articulates the term “transduction” where assemblages “come into being at the intersection of diverse realities,” mediating between different orders in diverse realities. The diverse realities entail “a knotting together of commodities, signs, diagrams, stories, practices, concepts, human and non-human bodies, images and places” (p. 18). Transduction is a process “whereby a disparity or difference is topologically and temporally restricted across some interface” (Mackenzie, 2002, p. 25). Transduction understands a mode of unity as a process “without presuming underlying substance or identity.” The transductive process is composed of some disparity, discontinuity, or discrepancy within a domain; such heterogeneous realities and potentials are linked and modulated, entailing new capacities, relations, and practices (p. 18).

In that Mackenzie explains not just about enclosures of things but ways in which something comes to be what they are, the idea of transduction is important to understand the relationship between materiality and human being. In the idea of transduction, each element determines the mode of existence through its directions and relations with others. Each reality, both human and nonhuman has a power in collectives more than a part of the sum. Thinking transductively means the process of separating and binding the

collectives (societies, cultures, technology and so on) and thinking about the emergence of new potentials in the intersection of disparity. The ideas of transduction where the collectives are composed of heterogeneous realities and such intersections between disparities entail new capacities that allow me to attend to the processes that deconstruct and link technology of memories and interpret the intersection in the processes as new potentials of meanings. In other words, transduction allows me to examine process of how capacities and the fabric of our collectives are constituted, avoiding any slant emphasis on human or technology.

We can think of memory practice transductively. As Halbwachs (1992) has noted, memories are already repetitions. Memories have lost the initial form and the appearance because they are continuously engaged in very different systems of notions at different periods of our lives (Halbwachs, 1992, p. 47). While history emphasizes the endurance of the past based on evidentiary rules and truth claims of contents, memory relies upon ways of organizing and re/constructing contents, the narrativization of the re/construction, and the grammar of truth claims (Zelizer, 1995). The process of organizing, re/constructing, and narrativizing the past is called memory practice.

In my thesis, there is no privilege of determining meanings of memories between memory vehicle and human being. A memory vehicle is an interface where heterogeneity reconstructs memories. However, heterogeneity in memory vehicles is not neutral: a literary or cinematic narrative, an architectural plan, and a database each present a different topography of ways in which its discrepancy is modulated to meanings of memories. Contemporary memory scholars have studied such technologies of memory and its rhetorical power, specifically focused on how such materials engage in memory

practices (Sturken, 1997; Young, 1992; James, 2005; Choi, 2014). Such studies inspire transductive theorization of memory practices by illustrating interactions with a variety of factors surrounding the mnemonic media, which means materiality and/or technology that evokes remembering and a specific meanings of memories.

The concept of transduction exemplifies rethinking about diverse resonances in collectives and coupling between various realities. In this thesis, memory practice can be considered as a process of transduction in that the memory vehicle is not an independent entity but the domain of intersection between disparities – time, space, viewers, and its architecture. Meanings of memories are always cocreated between human beings and materialities of memory vehicles in a crossing of visible and invisible heterogeneities (Law & Mol, 2002).

Here, I turn to studies of memorials to illustrate the transductive process of memory practices. After interpreting studies about memorial in terms of transduction, I will examine how memory practices with memory vehicles fit into transduction, and how it relates to transduction in digital environment.

Memorials as a space of transduction

Studies about memorial space and monuments/memorials have rich examples of the ways that memories are reconstructed in the dynamics of heterogeneous realities. By spatializing memories, the place of memories always incorporate the products of various memory apparatus and its context (Blair, Dickinson & Ott, 1991, p. 29). Most studies examined meanings of memorials by illustrating how such memorials interact with other entities in the sphere – its architecture, temporality, politics, and living bodies.

A memorial has its intended semiotic meanings from its creator. A political regime builds a memorial as “a social and physical arrangement of space and artifacts” in order to organize space to privilege certain historical and/or ideological narratives (Mayo, 1988, p. 62). Seemingly immortal materials, bronze or stone, are shaped into the timeless icon of a hero, and expect the permanence of meanings it connotes (Young, 1992, p. 295). On the other hand, memorials externalize counter-meanings of memories through its form and contents. Against this political power of remembrance, artists negate the illusion of permanence and a single signatory with counter forms of memorial, which are unfinished, invisible, and vanishing forms of monuments: the counter-monument resists a single authority by evolving with whole traces of its makers among artist, art object, and viewer; evokes an absence of memories through the negative space of the memorial; and criticizes the rigidity of the monument through the site-disruption (Young, 1992). Either ideological meanings or counter-meanings, a memorial’s meaning interacts with its architecture and contents in the purpose.

However, the intended meaning is not fixed. The meanings carved into the memorial are transformed through time. The endurance of materials has cultivated new meanings by interacting with a different period of time and a specific political context. The Soviet Union’s heroic statue of World War II was erected as a symbol of the Lenin cult and icon of patriotic war at first, but the same memorial has evoked contested memories of Lenin, WWII, and criminal cruelties from the Stalinist tyranny after the dissolution of the Soviet Union (Nina, 1983; 1995). Memorials are usually fixed in a single space, but time drags initial meanings into new contexts, estranging original meanings in the moment of the present.

The memorial also interacts with bodies of visitors. The existence of a memorial in a public space creates the place where visitors engage the process of meaning-making. James (2005) articulates a memorial's function in the context of major social transformations in Western industrialized societies – traditional, modernist, and post-modernist. Unlike how traditional monuments honor heroic deeds, modernist monuments evoke contested memories, warning the repetition of historical tragedies or criminalities. However, postmodern monuments demand engagement of audiences, inviting thoughtful reading of the memorials (James, 2005, p. 25). As the most striking example, the Vietnam Veterans Memorials in Washington D.C continuously negotiates and reconstructs meanings of the memorial based on viewers' actions, who are the veterans, the families and friends of those who died, and others (Sturken, 1997). Not only do audiences' gestures toward the memorial influence the ways in which the present interpret the memorial but also their additional expressions with digital devices – taking photos, recording videos, captioning, and displaying it on web sites – show how contemporary viewers interpret the memorial and the past (Choi, 2014, p. 113).

Likewise, memorials' meanings are not determined by just its initial intentions of establishment in a fixed materiality but re/constructed in the dynamics of the space. A variety of contingent structures and entities are entangled and meaning of memorials resonate the idea of transduction. Diverse domains – corporeal, geographical, economic, political, biopolitical – are cut across memorials, and new potentials and meanings of memories emerge in the intersection. With those dynamics, memory practice in memorials becomes a process of transduction, which means various realities are intersected and create unpredicted meanings of the past. Meanings in memorials are

neither determined by human beings nor embodied in the artifact itself, but meanings are negotiated by the intersection in the diverse realities.

We have learned that memorials are spaces of transduction, and all disparate realities shape meanings of memories, regardless of the initial intention of the memorial. Then, how does transduction connect to digital forms of memories? In the following chapter, I will discuss heterogeneous domains in Web 2.0 memory practices.

Transduction in Web 2.0 memory practice

As our lives have been digitized, ways of keeping the past have also changed. “Digital memories become us” (Hoskins, 2009, p. 1). Digital devices enable additional memory practices beyond ways in which people preserve the past in previous eras. People capture their mundane as well as their particular experiences of memorial places by using their mobile camera, archiving the photos and videos on their personal computer, and sharing them with family and friends in online websites. Our posts in online space become memories on social network sites, and people participate in a virtual tour of museums and traumatic memories at online memorial sites. Just as photography and cinema changed our ways of seeing, digital media modifies our act of recollection and remembering.

Specifically, computer networks, such as the Internet and social media, create an entirely new context of communication, and the context is intermingled as a new mode of heterogeneity. As Manovich (2002) noted, “the computer screen becomes a battlefield for a number of incompatible definitions – depth and surface, opaqueness and transparency, image as illusionary space and image as instrument for action” (p. 90). Such new terms

and dimensions have changed the topography of realities in Web 2.0 memory practice.

Simply, Web 2.0 memory practice is composed of a dichotomy between human archiving and computer archiving. Gehl (2011) traces back to the basic architecture of computers, the Von Neumann Architecture, to explore the system of Web 2.0. The basic system of computers is separated into the processor and storage: the processor focuses on the immediate data processing, and the storage function contains all the command code and data of the computer. Based on this basic structure, computers have developed toward both faster processing and bigger storage space. Improvements in processor speed achieve so called “real time” processing; developments toward storages enable computers to shift data out of time (Gehl, 2011, p. 1231). This dual architecture of computers has been duplicated on the Internet, and users and websites’ owners split up power of dual ability.

Several Web-based softwares – social networking sites, blogs, websites, and Wiki – are linked together through one key feature: Web 2.0 users fill the empty template of the website with the contents they make (Gehl, 2011, p. 1232). Based on immediacy and archiving ability of computer, Web 2.0 media companies create a business model that always has new contents to gain attention of viewers. Through immediate processing, Web 2.0 sites hand over power of contents-creating to their users, achieving ever-increasing contents. Web 2.0 builds empty templates and invites users to fill the website. From professional to amateur, users become archivists of Web 2.0 sites with their technical ability, creating dynamic content – video editing and uploading, write comments, post photos, and rank media contents (Gehl, 2011, p. 1232). Instead, website owners hold the power of archiving. Web 2.0 sites owners create massive server farms to

store user-generated content, and use the archived content as data for the website's purposes and cultural/economic/political values. Through websites' archiving power, every user-generated content intentionally or unintentionally contributes to justification for the website's existence. Web 2.0 contents become users' participation as well as the data of the website.

The dialectical layers – human archiving and computer archiving – imply Web 2.0 memory practice comes from not only human participation of storing their present as memories, but also computer archiving capacity of making contents out of the users' archiving moment. In that, Web 2.0 memory practice is already dialectical, Web 2.0 cannot be simply reduced in the dichotomy. Computer archiving is not as autonomous as human archives. Computer working is composed of various internal technological logics, and all, including human practices, transduce Web 2.0 memory practices.

Manovich's (2002) five principles of new media well-explain the internal logic of computer, and the trait of new media is flourished in digital archiving. First, new media is composed of numerical representation: digital code. All analog media sources are converted to digital code; thus "media become programmable" (p. 27). When users post the content they make, each content is digitized. Second, since each qualified source becomes quantified, new media elements are modular in that each element maintains a discreet and separate identity even when the elements are assembled into a larger object. Web pages consist of separate media elements – photos, texts, links, and so on – and every element can be accessed separately, retaining its individuality. Furthermore, since all elements are stored independently, contents in the website are very easy to delete, substitute, or add new objects without affecting the overall structure of a larger object (p.

30).

Also, these two traits of new media allow the third and fourth traits: automation and variability. For automation, “human intentionality can be removed from the creative process” (p. 32). Through algorithms, computer or software programs can automatically adjust, modify, and create contents under program control. This links to the fourth trait of new media, variability, in which a new media object can have different versions instead of identical copies. Despite this, each version has the same elements that maintain their separate identities because of modularity. Here, Benjamin’s (2008) authenticity becomes useless. Through variability, “a number of different interfaces can be created from the same data” (Manovich, 2002, p. 37). Thus, variability enables users to have many options to perform with/in a program or a media object.

Most importantly, the final principle is transcoding between computer language and cultural language. Even though every cultural source is converted to numerical data, computer or media display the data as a human-readable form. Necessity of transcoding creates two different levels of communication on the computer: user level of communication practice and computer level of archiving, accessing, and creating contents. As a result, human and computer meanings are blended there.

Deconstructing Web 2.0 memory practice, there are human participation and computer archiving through different digital codes, programming, data, interfaces, human/computer language and practice. The heterogeneity interrelates each piece, and creates meanings of memories embodied in the website. Even though human users generate meanings of memories, the meanings are not owned only by the human being. All elements negotiate new potentials, meanings, and practices of memories.

Software is intersected with various realities and entities – cultural, technological, and political – involving a complex web of relationships of human design, policy and regulation, economic interests, and cultural concern (Langlois, 2014, p. 14). In the end, meanings of memories in Web 2.0 mean translations of networks of heterogeneous things and practices.

Then, how do such things become memories? The new form of transduction implies that we need to redefine digital memory practice through the new topography of transduction. This research aims to unravel Web 2.0 memory practice with a new form of materiality and the heterogeneity, redefining the transduction of memory practice with/in the website.

The plan of the work: Mapping human-technical network of
Web 2.0 memory practice

In *After Methods*, Law (2004) asks about the messes of reality, “vague, diffuse, unspecific, slippery, emotional, ephemeral, elusive or indistinct”: can social science catch some of the realities which do not “really have much of a pattern at all”? (p. 2). Even though studies in cultural studies and anthropology have analyzed such realities, social science methods are missing. Law (2004) opens methodology to understand a networked or fluid world with unpredictable and unspecific agency and structure. Conventional methods have handled realities with specific and acceptable statements, representations, or depictions of realities, but certain kinds of realities cannot be condensed into the textual and pictorial form. The realities are constructed with multiplicity and the relations with each other, and their relations interweave together in unexpected ways (Law, 2004,

p. 147-156).

This worldview echoes transductive thinking in memory practice. Disparity in collectives are not always well represented within the existing methodological approach. Memories are re/constructed through transductive process of heterogeneities. Meanings are not simply linguistic, but involve social, political, technical, psychological, and material practices. Meaning has been traditionally seen as the human mind mapping onto a reality, but meanings are also shaped by the materials and techniques used to produce meanings (Langlois, 2014, p. 63). Langlois (2014) notes “technocultural meaning” as the study of meaning which requires not only looking for human practice at the textual and/or pictorial content but also at the technologies, materiality, political and social processes that create the conditions of the practice of interpretation. Specifically, memory practices with/in software are overlaid by independent human memory practices, political and economic languages, and computer processing. Due to this complex web of meaning-making, different approaches to grasp topography of relationships are required, ways in which to look at the heterogeneous relationships between the social and technologies as one of assemblage (Phillips, 2006).

Actor-network theory (ANT) synthesizes the heterogeneity of the processes that create technosocial networks. The perspective of ANT orients researchers away from choosing a single linear relationship between technology and society. ANT sees science and technology in technosocial networks, challenging perspectives that both scientific/technological development changes society and technology is changed by political forces and the social interests in different historical contexts. Without being concerned with casualty between technological and social change, the discussion of ANT

starts with the perspective that there is nothing purely human but only mixtures of human and nonhuman elements.

Following this basic assumption, Law (1992) explains the term “heterogeneous networks” as a key concept of ANT. Heterogeneous network means that “agents, texts, devices, architectures” are effects generated in, and are essential to, the patterned network of the diverse materials (Law, 1992, p. 380). It means that both human and nonhuman actors must be understood, and thus the network is defined through interrelated relationships between them. Radically speaking, these networks are composed of not only human beings but also any materials, like machines, animals, texts, money, and architecture; all elements are called heterogeneity. The end product comes from a lot of hard work “in which heterogeneous bits and pieces” create the final network (Law, 1992, p. 381).

Furthermore, ANT argues no fundamental duality between human and objects in an analytical stance (Law, 1992, p. 383). Instead of illustrating the division between technology on the one hand and the social on the other, ANT focuses on “the interpenetration of the social and technological by focusing on the agency of both human and non-human actors, and their relationships” (Langlois, 2014, p. 54). Through such approaches, ANT reveals how (human and nonhuman) actors and organizations mobilize and juxtapose in heterogeneous network, and how such actors generate social ordering (Law, 1992, p. 386). The task of ANT is “to characterize these networks in their heterogeneity,” and explore how the network comes to “be patterned to generate effects like organization, inequality, and power” (Law, 1992, p. 381).

I find many confluences between the concept of transduction and ANT. Through

mapping human-technical networks of heterogeneity, ANT enables research to represent processes of separating and binding collectives, transduction. Since transduction emphasizes potentials of meanings that derived from the individuality of each element and its intersection, ANT's emphasis on heterogeneity and its relations in networks allows me to examine methodological insights regarding transduction of Web 2.0 memory practice.

Applying ANT to this research, this research attempts to understand how to unravel transductive processes of memory practices, specifically in a Web 2.0 website, as it crosses a heterogeneous domains of realities such as human perception, politics, technologies, temporality, and spatiality. My aim in this thesis is: 1) to map this topography of memory practice with a case study of the Korean ferry *Sewol* sinking memorial website (www.sa416.org), *Citizen Network Remembering the Sewol*, and 2) to ultimately reveal the politics of memories, in other words, what is at stake in negotiating meanings of memories in the network? I build this thesis theoretically on transduction and methodologically with ANT. Following the idea of transduction, I treat the *Sewol* memorial website as a place of transduction where disparity embodied in the website becomes a meaning of memory, and I borrow methodological insights from ANT by revealing heterogeneity in the network of human-technical memory practices and power formation between them.

I began with academic discussions of materiality and memory practice, crossing STS and memory studies. In the previous chapter, I illustrated my theoretical insights from transduction that our collectives and its capacities are composed of individuality of human and nonhuman; meanings of memories are also entailed by intersection in the

heterogeneous realities. ANT resonates the worldview of transduction and allows methodological insights to deconstruct memory vehicles.

Following the ideas of transduction and ANT, Chapter 3 includes a case study of Web 2.0 memory practice through one of the Korean memorial websites, *Citizen Network Remembering the Sewol*. Without hierarchy or casualty between technologies and social elements, I deconstruct elements of memory practice in *Citizen Network Remembering the Sewol*, and describe what human and nonhuman elements are involved in the topography of memory practice.

Then, in Chapter 4, I examine politics, how each element links together or contests to make meanings of the ferry *Sewol* disaster. I am not concerned with the meaning of the memories, but I focus on the system of meaning-making in Web 2.0 memory practice. ANT is a description of actor-network, but the examination of network always links with the question of power. What and how heterogeneity engages in the network of human-technical memory practice means how the linkages contact with power formations in relational effects. Thus, Chapter 4 draws on the relational effects of human and nonhuman to negotiate meanings of memories with/in the website.

Through this process, I hope this thesis offers critical insights into memory vehicles by examining possible contingencies of creating memories' meanings. In other words, this thesis is the critical conversation about memories, technologies, and technologies of memories.

CHAPTER 3

MEMORY PRACTICES IN THE FERRY *SEWOL* MEMORIAL WEBSITE, *CITIZEN NETWORK REMEMBERING THE SEWOL*

The Web 2.0 place of memory practice that I find fascinating for both memory studies and science and technology studies is the Korean ferry *Sewol* memorial website, *Citizen Network Remembering the Sewol* (www.sa416.org). The website was spontaneously established by citizens to collect the memories of the *Sewol* disaster.

On April 16, 2014, the Korean ferry *Sewol* sank with 476 passengers, including 325 high school students who were going on a field trip. After the accident, 275 people died in the deep sea and 9 people are still missing. The tragedy was unprecedented not only because of the huge human loss and the unfortunate death of the young, but also because of the remarkable effort of witnessing and saving of rich records. After this tragic disaster, mainstream media were not the only narrators of the events. Korean citizens participated in recording the aftermath of the accident and reporting different narratives of the accident from mainstream media. In citizens' engagement, another kind of reporting emerged: memorializing online.

After the tragedy, *Ik-Han Kim*, a professor in the Records, Archives &

Information Science department of *Myoung-Ji* University, and other professional archivists began archiving works about the aftermath of the accident at *Jindo*, where the ferry sinking occurred (Kim, 2014). Professor *Ik-Han Kim* promoted the work of recording in the interview with a newspaper *Hankyoreh*, and invited citizens who wanted to join the memory practice. Citizens and civic groups organized an association and recorded the aftermath of the accident at *Jindo*.

A nonprofit organization, *The Beautiful Foundation*, held a fundraiser to prepare the system of archiving and build the repository, and a digital archiving company, *haru616*, donated the technological system of the Korean Ferry *Sewol* memorial website. The website is operated by nonprofit and nongovernment organizations. Every work of a citizen association was uploaded on the website. The memory practice was extended by citizens, especially by people who were armed with personal computers. This memorializing online was an extension of the spontaneous memory practice in the streets and squares nationwide. Citizens filled public spaces of the disaster site, the city where victims lived, and their residential city with artifacts, such as flowers, paintings, yellow ribbons, and posters, to cherish the victims. The temporary artifacts were removed a few months later, but the commemorative practice migrated to cyberspace. City residents, visitors, and commuters were made into witnesses of the tragedy; and the records were also uploaded on the memorial website. The website displayed a various range of responses to the accidents, including pictures, artworks, transcripts of interviews, and the promotions of the social rallies and exhibitions. The website is also linked to another memorial site for the *Sewol* tragedy, Facebook and Twitter, creating this remarkable network of online memorial sites.

This chapter describes disparate existences in the Korean ferry *Sewol* memorial website as a case study, and how each element on the website transduces memories or meanings of memories. Through this case study, I map human-technical networks of Web 2.0 memory practices. The *Sewol* memorial website is an example that can explain human and nonhuman memory practice without innate hierarchy between them. In the political economic perspective, social media is related to a new form of hierarchy and social system, digital capitalism (Gehl, 2014). All websites pursue their monetary values, and human practices in the website are rarely detached from commercial values of the website. All participatory practices, which create a metaphor of social media as democratic and equal media, denote free and immaterial labor (Stiegler, 2009). The website I chose was created by spontaneous human participation as a nonprofit and nongovernment website for memorial works. By choosing this website, I detach human practices of collective memories from capitalistic perspectives of labor, and thus more clearly reveal the topography of human-technical network of Web 2.0 memory practice.

The memorial website is a place of transduction, where heterogeneity is intermingled with memory practice. Most studies of online memorial have focused on the participatory trait of the Internet, illustrating different forms of memory practice in terms of a human actor (Haskins, 2007; Hoskins, 2009; Maj & Riha, 2009). However, if we regard the computer as a communicative agent, not merely as a tool of human participatory practices, the topography of Web 2.0 memory practice becomes more dynamic and heterogeneous.

This chapter deconstructs possible elements of memory practice on *Citizen Network Remembering the Sewol*. In Figure 1, I visualize the heterogeneous network of

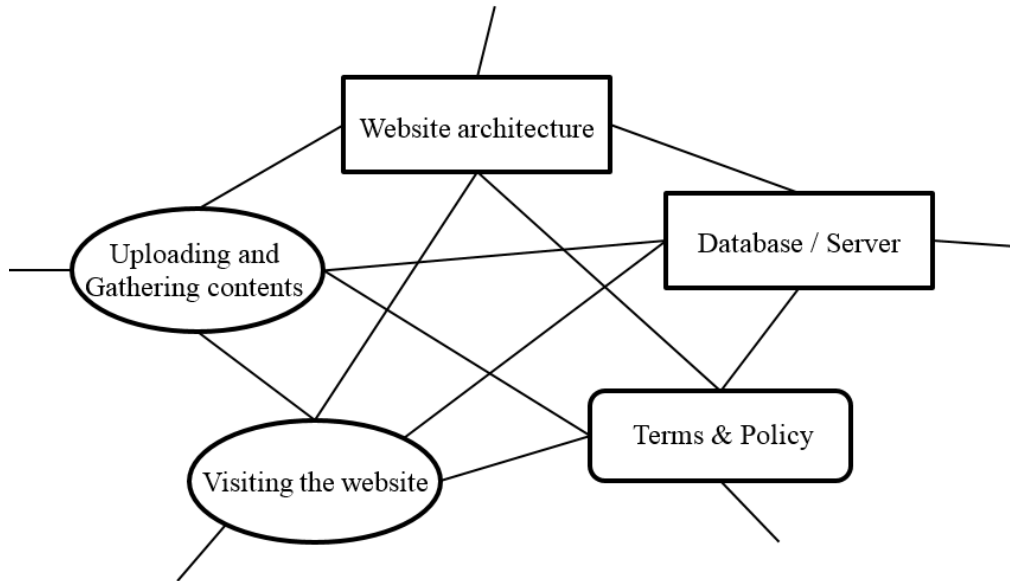


Figure 1. Mapping human-technical network of the ferry *Sewol* memorial website

the website. In this chapter, each node is articulated in terms of how each element engages in memory practice and meaning-making process.

Uploading and gathering contents

In the aftermath of the ferry sinking, memories were uploaded to social media websites by citizens – volunteers, archivists, visitors, and city commuters. Citizens spontaneously uploaded their eyewitness account at the disaster scene. The postings proliferated throughout the Internet. Their eyewitness accounts and online reporting expanded to the area outside of *Paengmokang* at *Jindo*, the nearest port to the spot of the accident.

Citizens designed a variety of social events to remember the disaster and its victims. *Paengmokhang* was decorated with yellow ribbons. Families of the victims

wrote their wishes on the yellow ribbons for the safe return and survival of the missing family member, and tied it to the fence in the port. Supporting families of victims and comforting them, citizens engaged in spontaneous memory practice in the streets and squares. Citizens tied yellow ribbons at the school gate of *Danwon* high school, where the student victims attended; the front plaza of a group memorial altar; Seoul plaza and *Cheongge* plaza at the capitol city of Korea; and various streets and plazas in Korea. Ethnic Koreans overseas also participated in the campaign: students decorated the tree in front of the Korean consulate general in Los Angeles and migrants engaged in a street rally in the United Kingdom (“Citizen Network,” 2014).

These memory practices migrated to online space through citizens’ digital devices. On June 5, 2014, citizen supporters and members of the nonprofit organization official assembled to gather and archive scattered memories. The association planned to establish a storing place at *Ansan*, where the student victims lived, and create a website and Facebook account. On both the Facebook account and the memorial website, the association uploaded their plan of social memory practice – exhibition, rally, and campaign. On June 23, 2014, they announced a campaign for gathering the scattered *Sewol* memories. They opened both online and offline donations to gather digital records (photo/images, videos, audio file, websites, SNS comments, and documents of prayer, diaries, postscripts), papers (printed materials, a reporter’s notebook, and information leaflets), and articles (yellow ribbons, placards, messages, and artworks); citizens and nonprofit organizations have gathered such records as memories of the *Sewol* tragedy (“Citizen Network,” 2014).

On the website, citizens spontaneously uploaded and donated pictures of *Sewol*

memories. According to the website's report, they gathered donations of 186 documents, 797 photos, 96 videos, 24 artifacts, and 30 oral statements until June 24, 2014 ("Citizen Network," 2014). Also, there were 22 photos citizens directly uploaded from June 2014 to September 2014. The administrator reports the present condition of donations. From the Korean Institute of National Records, citizen volunteers and journalists, the nonprofit and nongovernment organization *Chamyeoyoenda* donated audio/paper recordings at *Jindo*, pickets, yellow ribbons, visitors' book at a group memorial altar, and notebooks. The association has organized and digitized those artifacts. Also, citizens donated their digital photo files and videos; and the digital archiving company *haru 616* donated an archive of web-postings for the *Sewol* disaster. Some families of the ferry victims contributed videos that their deceased family members took on their mobile phone right before the ferry sinking. Those digital evidences are being preserved by the association's temporary digital repository and they are organizing these things for display ("Citizen Network," 2014). Part of the contents are also uploaded on the Facebook account for *Citizen Network Remembering the Sewol* by the administrator of the association.

By uploading and gathering contents to the *Sewol* website, citizens spontaneously create memories of the *Sewol*. The citizen organization aims to unite scattered memories on the website, and citizens have participated in the online memory practice by donating their eyewitness accounts. In the spontaneous process of memorializing in a public space, not only survivors or families of victims but also city residents, volunteers, commuters, and tourists have witnessed memories of the *Sewol* as it happened directly in front of them. They transformed the liminal experience in the aftermath of the ferry sinking to the online space, and the digital evidences have created an archive of collective memories.

Even though every citizen donates different forms and contents of memories, the collection of shared memories “are instantiated beyond the individual by and for the collective” (Zelizer, 1995, p. 214). The rich records that a diverse group of citizens share and discuss, including their personal memories of the *Sewol* disaster, on the website are not only evidence of the present but also sources for the future. Every content they uploaded – photos, videos, naming of contents, and comments – contests different memories of the mainstream media and governmental narrative; and negotiate meanings of the disaster by going through the different contexts of time.

Visiting the website

Through citizens’ participation of gathering and updating memories, regular people furnish a space where disparate memories are embodied as collective memories of the ferry *Sewol* disaster. The website, as a site of collective memories, invites people to not only update their eyewitness accounts but also to search and navigate memories of other people on the *Sewol* disaster. Users who upload nothing and did not witness the aftermath of the *Sewol* can experience memories of the *Sewol* by navigating the collective memories on the website.

Memory practice with media entails quite different experiences. Landsberg (2004) argues a new form of public cultural memory where a person deeply feels memories of the past, which s/he did not go through, at an experiential site such as memorial, a movie theater, or museum. Beyond simply understanding a historical narrative, people can shape their subjectivity and politics through this new form of memory practice, called “prosthetic memories,” through experiences with/in screens and memorial spaces.

Through the technologies of mass culture, memories are transportable to anyone, regardless of nationality, ethnicity, and generation. Specifically, prosthetic memories often mark a trauma by engaging secondary experience of a trauma. Landsberg's prosthetic memories challenge the claims of authenticity, which are attached to traditional forms of memories, and disenfranchise its ownership of memories (Landsberg, 2004, p. 2-3).

On the website, there are a variety of contents from real moments of the ferry sinking to feelings in the aftermath of the disaster. Some visitors of the website have no authentic link with the disaster and/or aftermath memory practices. Despite the absence of biological inheritance and organic memory, visitors construct memories through a broad sense of community and sympathy. Visitors of the website see messages for wishing a safe return of the missed, desperate moments of the ferry sinking through victims' mobile phone records, and families of the victims' shrieks at incompetent government. Every materiality of memories mediates the memories and evokes feelings. In fact, I do not have any family relations or kinship with victims, and I even had spatial distances from my residential area of South Korea. Despite the spatial and mental distances, I can share what is going on in Korea through such posts as these on the website. Specifically, victims' mobile records of the moments right before the ferry sinking are restored by their parents; they evoke strong, shared emotions in the national trauma. Victims' parents shared the digital records of mobile videos with the association, and the records were uploaded on the *Citizen Network Remembering the Sewol* Facebook account on April 15, 2015, 1 year after the disaster. On the 1 year anniversary, the website reconstructed the ferry disaster with recorded photos from the victims. There

were photos of the students anticipating their field trip on the day before the ferry sinking, and photos of the students waiting to be rescued wearing life vests. Such contrasting images evoke inconsolable grief for me; I experience and share emotions and memories by just clicking and seeing the contents on the website. Without participation in uploading, visitors share feelings on the website, regardless of the spatial and temporal distance.

Besides, visitors create a new form of prosthetic memories through different experiential practices on Web 2.0. On the website, visitors can search, view, tag, and share contents; memories are interpreted in a different meaning through the path of each memory practice. Even though visitors view the same website, what each user clicks and reads cannot be the same as every other user. Users can see different contents in the same website and conduct their own memory practice by tagging, sharing, and (technically) saving. For example, I visited the memorial website and clicked on some pictures citizens uploaded. After seeing photos, I traversed to its Facebook account. I shared a picture of the victims' shoes on my Facebook account, and clicked the "Like" button for three pictures about an exhibition of victims' drawings. These paths shape my own experiential practice on the web, and other users may not follow the same routes as mine. Through their own paths of practice, each user creates a different form of memory meanings in the same website. The shared and tagged contents are situated in different contexts by migrating from the website to visitors' personal social media accounts. Authenticity, which has already collapsed with Landsberg's articulation, cannot have meanings anymore; each user transduces memories in their own context and memory practice, and each user's memory is intermingled with individual and collective memories. Visitors of

the website are not spectators but active participants of memory practice.

Regardless of uploading or not, each user becomes an active subject of memory practice by constructing their own meanings of memories through a new form of prosthetic memory. Through the experiential practices, visitors create secondary content by making sense of what they saw in the website, and the secondary content they make is linked with other sources on the web without distinctions between original and derivative. The example of this practice was my motivation for this research. I saw the digitized wish messages on my Facebook NewsFeed. My friend shared the contents on the *Citizen Network Remembering the Sewol* website, and added comments on it like “Don’t forget.” The post was shared by 72 more people in his “Friend” network on Facebook. The post gives experiential practices to me as a viewer of the content, and it is the end product of my friend and/or other friends’ secondary practices. Sharing and leaving contents are another form of experiential practices beyond the direct uploading of content.

Thus, in a national trauma, visitors of the website share memories of the ferry sinking and their prosthetic practices contribute meanings of memories.

Website architecture

Users can actively choose what they upload, delete, view, and share. Users are definitely active subjects of memory meaning-making by either uploading or just searching. However, several nonhuman actors are densely interlaced with such human memory practices. The active participation occurs in relatively small physical space. In Web 2.0 memory practice, users are gathered in the online space through their personal

computer or digital devices, rectangular monitor and keyboard or mobile phone. The materiality narrows the distance between nature and human, decaying traditional meaning of spatiality and temporality. On the web, users freely upload and/or navigate memories. This new form of space, websites, also participate in memory practice by interacting with human users.

For users' activities, the website interface is designed to contain a communication system that provides interactivity. Interactivity comes from the basic system of a computer, evolving toward more immediate processing; the system is duplicated to social media interface (Gehl, 2011; Chun, 2011). Based on interactivity, each website contains its own architecture, and the architecture influences human practices in the website.

On *Citizen Network Remembering the Sewol*, there are two categories to which users can upload their contents by themselves – “Online donation” and “Uploading contents.” On the online donation section, users can grant their digital records to the website administrator by installing the program, Innorix File Transfer Solution. After installing the program, users fill out the online form, which includes the donator's name and a real name authentication process, information about the document (producer's name, date and time, location, event information, and so on), the form of record (photo, video, and so on), agreement of publicizing online (open or close), copyright agreement, and file upload. Users also can send their files to the administrator via email or mail. Some records that donators agree to publicize online are displayed in the “Viewing records” section, and the contents are allowed to be searched for online. At this moment, the display of online donation is in the course of preparation, but the administrator briefly describes what contents are donated through offline donation in the “Present situation of

donations” (“Citizen Network,” 2014).

Also, users can spontaneously upload their digital records on the “Uploading contents” section. In the category, users spontaneously upload their pictures, videos, writings, and comments by clicking the “Contents upload” button. Users can upload the name of the content, the content, and an explanation of the content. Website visitors can see the content and leave comments.

Except in these two categories, only the administrator can upload the contents. Users are allowed to view, leave comments, and share it through their social media account. The administrator uploads the present situation of content donation, exhibition and campaign information on the “Event” section. There is no content upload button on the “Event” page, and the section is managed only by the administrator.

Even though it is not for content uploading, users can participate in the categories “Apply participation” to share any skills (video shooting/editing, writing, and webpage management) and financial donations with the association. Also, users can leave comments on all content and share the content with their social media account by clicking the “Share it (Facebook/Twitter)” button.

Likewise, the interface provides a communication system where users can participate and interact with the platform. In fact, the interface is the only actant who is interacting with the human actor; namely, users can upload their contents or meanings without knowledge of coding and processing beneath of the platform. Thereby, the content on the interface engages in the meaning-making process. In other words, the platform determines what human actors are able to do on the website, and it shapes, produces, and shares meanings with human beings. Figure 2 represents how the main

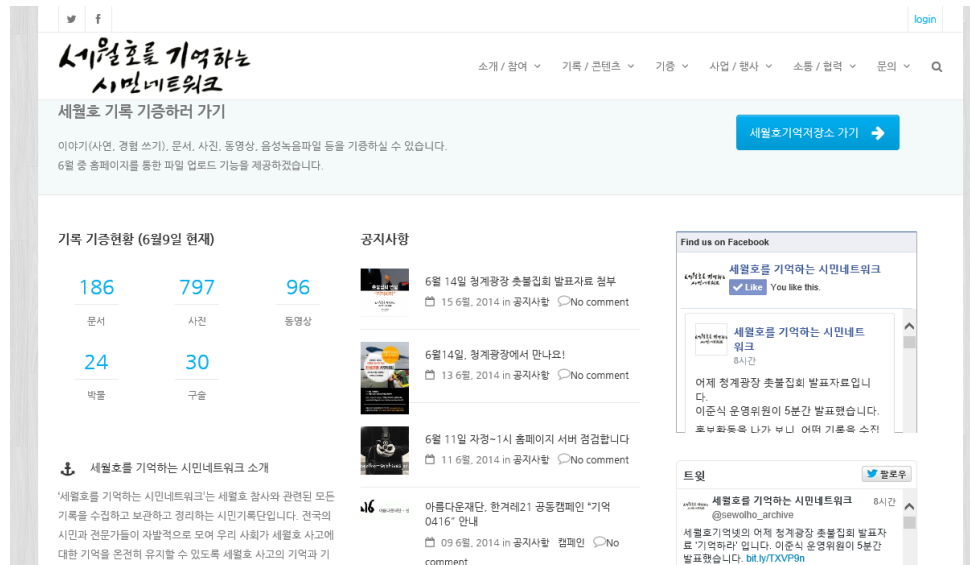


Figure 2. Screen shot of *Citizen Network Remembering the Sewol* main page (www.sa416.org, June 24 2014). Reprinted with permission from *Citizen Network Remembering the Sewol*.

page of *Citizen Network Remembering the Sewol* initially displayed.

On *Citizen Network Remembering the Sewol*, what users can do is upload files, donate their records, leave comments, view content, and share the contents through their social media account. Users can spontaneously participate in these practices and choose what they want to do; but they cannot perform whatever practices other than what the interface can support. Users' participations are limited to the website's capacity and platform. Depending on the website architecture, what users can do and what they can engage in is transformed. For example, the association has the same website on Facebook. The administrator of *Citizen Network Remembering the Sewol* updates what is going on in the *Sewol* memory practice, including the website (www.sa416.org) and outside of the online space. The Facebook platform has no categories, but all the contents users upload appear not only on the uploader's page but also on the timeline of the

uploader's friends in a reverse-chronological order. For a group page, every Facebook user can affiliate with the page with one-click, and the administrator and members of the page can upload any content, leave comments, push the "Like" button, and/or share content. With a huge network in Facebook's friend system, contents of any users' participation to the interface are displayed on hundreds of accounts' timelines.

The difference in platforms causes different memory practice for users. Because of the interface design, *Citizen Network Remembering the Sewol* website needs a curating process, matching contents with well-fitted categories. However, since Facebook has no categories, users have uploaded content without categorizing work. Also, while *Citizen Network Remembering the Sewol* website needs users' regular visiting and navigating the website, the Facebook page provides all content to users' timeline as soon as anyone uploads content to the page. People with no connection to *Sewol* can be easily exposed to memories of the *Sewol* through his/her personal practices on Facebook. The sharing system of Facebook provides easier updating of contents: any Facebook content about the *Sewol* can be shared and displayed on the *Citizen Network Remembering the Sewol* Facebook page. On the other hand, contents are available at *Citizen Network Remembering the Sewol* when users upload content at the exact URL of the website.

Besides influencing users' practice, the website interface regulates archivable forms, or what becomes technologically visible. On *Citizen Network Remembering the Sewol*, users can upload already digital records by themselves, and other forms of content cannot be uploaded or be digitized by the administrator. Through "About us," the website encourages citizens to upload any memories and records of the ferry *Sewol* sinking, but not every document can be archived. The archivable form of memories is determined by

the website interface. In terms of technical support, users' content must be digitized as visual forms – photos, videos, and texts. Even though citizens can donate any recorded memories of the *Sewol*, the memories can be displayed in only visual forms. *Citizen Network Remembering the Sewol* also gathers offline donations for their records. The gathered records are displayed and classified at the storing place in *Ansan*, and the association digitizes records to upload online by taking pictures of materials. The digitizing process takes a long time, and the website is still preparing to display contents they gathered. Despite a huge storage capacity and immediate interactivity of Web 2.0, the website cannot display every content that users donated.

The same contents are displayed in a different form and this entails disparate effects. Contents will be added continuously, and interfaces will be transformed over time. The website must be kept fresh, and the interface lends itself not just to spectatorship but also to participation in achieving rich records of memories. In fact, *Citizen Network Remembering the Sewol* website has been under construction because of the 1 year anniversary, April 2015. On the main page, the association stipulates that they are renewing the website to intensify sharing memories with citizens and updating information. In the meantime, the association has updated and linked events on their Facebook page. Because of its easy access and different platform, there is seemingly more active participation of citizens on the Facebook page. After updating the website, the website platform must evoke different memory practices and meanings of memories. We cannot imagine what the new website will look like, but any display changes of ways in which users participate – uploading contents, navigating categories, searching contents, posting comments, and sharing contents – in the memory practices on the

website influence users' retention and meanings of memories. This aspect will be linked to the website's database trait, which I will discuss in the following chapter.

On the website platform, there are a variety of intersections, and the interface creates a coherent symbolic world where diversities can be made to work together (Langlois, 2014, p. 83). In the interface, every memory practice is neither sole human practice nor only computer programming. Computer practices are translated to human-readable forms in the website interface, and human interactions with a computer are delivered to a computer server by following coding process. Between computer practice and human practice, interface contributes to create meanings of memories through translation from human language to computer language and vice versa.

Database/Server

If the interface connects human practice with computer practice, what is going on beneath the interface? Galloway (2012) notes that “objects are never humans to computer” (p. 12). It is always data itself. As I mentioned before, the representation in the interface needs a digitizing process from cultural artifacts to digital codes: photographs and video need to be taken by digital devices, texts need to be typed, and already existing media forms need to be digitized. Through the process, every record becomes data, and the data are stored in a database. Once digitized, the data “have to be cleaned up, organized, and indexed,” becoming a new algorithm, database, which means “a structured collection of data” that is organized for fast search and retrieval (Manovich, 2002, p. 218).

Websites are rich examples of a database. Each website is defined by HTML, and

it is presented with a sequential list of images, links, videos, sounds, and texts. A new element can be added to the list, and such elements become collections of the database. The collection always grows and is never complete. This trait of databases influences the meaning-making process of memories.

Citizen Network Remembering the Sewol is a collection of digital memories. The website is presented with a variety of data – images, texts, links, and videos – and data are continuously added on the website database through human practices. New elements can be added to the end of a list or inserted to anywhere. The database structure, adding new elements over time, entails “the antinarrative logic of the Web” (Manovich, 2002, p. 220). Unlike how a traditional film and television documentary transfer meanings in a series of connected events, the Web includes meanings in the collection of the database. Every new element is overlaid by previous ones, and the collections do not guarantee a single narrative. In other words, new elements are added over time, and the website becomes a collection, not a narrative.

Thus, ways in which users make meanings in a nonsequential database influence meanings of memories. Users navigate several interfaces, and there is a level of material organization underneath. While a film creator provides a series of connected scenes with a narrative, the database’s creator provides a set of related links on the website. By following links, users traverse a different database and server. Manovich (2002) articulates hypernarrative or interactive narrative, which means the sum of multiple trajectories that the database records of users are linked (p. 227). The user’s trajectory is possibly constituted as one coherent narrative by choosing databases in a particular order. However, user’s access is usually in a random order, and we cannot expect what

meanings are created in the users' trajectory.

On *Citizen Network Remembering the Sewol*, visitors of the website navigate a set of contents that other users uploaded – photos, videos, and texts. Each content has a narrative, but the sum of each content is heterogeneous. A photo of the city decorated with yellow ribbons narrativizes citizens' wishes; a photo of a rally implies resentment; and an exhibition leaflet has a narrative of intended information. The website creates sets of heterogeneous data, a database, and it could include more than one narrative.

Moreover, there are links and tags. The link and tag are unique traits of the Web, and they create a huge set of databases by linking separate databases of each website. Even though the website creator provides an empty template that users can fill in without any intended narrative, the website administrator adds related links and tags on the website. In

“Participating group,” the administrator introduces a participating group who share intentions with the website organizer. The page provides the list of groups and links to their website. Users and visitors can traverse different databases by clicking links. The linked website has a different database or a different organization of the same database. Similarly, regular users can provide this kind of link by tagging their social media account. The uploader can leave a small button, a tag, and it leads users who click on it to the uploader's blog or social media account.

Manovich (2002) articulates that database and narrative are inherently adversaries (p. 225). Narrative is a closure form but it is interpreted differently by a spectator. However, a database has no consecutive stories, but a huge set of data structures. Meanings are created in users' navigating, indexing, and archiving. Some website algorithms create users' narrative by tracing their navigation. Amazon recommends some

books that you may like based on matching between their indexation and users' searching. However, we cannot assume that every user creates their own path in a particular order of clicking. The new media database includes a variety of cultural forms. The cultural forms are represented in the material level, but narrative is dematerialized (Manovich, 2002, p. 231).

Unlike narrative, new elements can be added anywhere and existing elements can be revised in the database. In a Web 2.0 environment, there is no enclosure of interface, database, and meanings. The website organizes a huge set of data, and users create meanings by interacting with separate or related databases. Without assigned narrative, meaning-making in the web is always a translation and/or process throughout a huge network (Galloway, 2012, p. 33).

Terms and policy

Interface and database imply a material level of Web 2.0 memory practice. Because of its materiality, social media is seemingly imperishable as a memory vehicle. The belief is also guarded by everlasting capacity of storage. The archival function of social media originated from the basic architecture of computers. Through improvements toward a huge storage of ever-increasing content in Web 2.0, Web 2.0 sites and digital media focus on preservation of user-generated content, and "it seems to make digital media an ever-increasing archive in which no piece of data is lost and thus central to progress" (Chun, 2011, p. 97). By looking beneath the interface, however, social media storage capacity is not ever-increasing or everlasting. Every website has their own terms and policy, explaining their rule of data preservation; the temporal duration of content's

influences on memories' meaning.

On the *Citizen Network Remembering the Sewol*, the website administrator articulates how donated documents are preserved. The association has regularly displayed all content citizens uploaded on the website; preserved other paper materials or artifacts on the offline storage; and digitized part of them to archive on the website. Specifically, the website vaguely articulates about time periods of records preservation (“FAQ,” “Citizen Network,” 2014):

Donated records are preserved in the *Sewol* archive to share the documents as a social memories. Depending on *Digital Preservation Law*, documents will be under the evaluation at the determined date, and filtered documents that can be preserved everlastingly. Unselected records can be returned to donators or discarded.

Even though the website encourages users to upload anything, the website does not preserve whatever the users upload. The preservation of content is determined by the *Digital Preservation Law*, enacted by the *National Archive of Korea*. According to the *National Archive of Korea*, digital records over 10 years must be transferred to a long-term preservation format. The format should guarantee the authenticity, accessibility of records, and the function of backup. Some records among the long-term preservation records can be converted to permanent preservation records. The repository must have organizational viability, technological and procedural suitability, system security, and procedural accountability. The repository is examined by the Chair of *National Archive of Korea*, and they encourage the website administrator to submit metadata of the digital records. Metadata must include appropriate descriptive, administrative, structural and possible preservation (“Digital Preservation Policy,” 2015).

According to copyright policy on *Citizen Network Remembering the Sewol*, all

donated records belong to the website, including ownership, authority to dispose, and application (“Citizen Network,” 2014). With devolved copyright, the website administrator applies the *Korean Digital Preservation Law* to recorded content, and there are several elements that are interrupted to permanent preservation based on the national law. The website administrator establishes technological suitability to keep records secure and accessible. For a long-term or permanent preservation, the administrator regularly updates its technological forms and submits metadata of the content. Metadata must be machine readable; but a human must know what each code means and translate it to a human-readable format. With the translation process, metadata provides record-ness that contributes to indexing the data and proves the authenticity of data in the future (“Digital Preservation Policy,” 2015).

With interacting with time, records are re-evaluated by the technological support, the website administrator, and the government, and they are sorted as to whether to dispose, preserve, or temporarily archive. Even though content is uploaded by ordinary users, the evaluation of content is conducted by the website administrator or government. Also, the administrator must update the format of data to keep it from technological change. In the case of selection as a permanent preservation of records, its meanings and future searching of the data is determined by metadata.

Digital preservation emphasizes the significance of records in the future. Depending on future usage, digital records are determined as to whether to be preserved or be discarded. In that the website has no narrative and memories are reconstructions, the database and memories from the website are ever changing and grow by the political dimensions of records as well.

CHAPTER 4

MEMORY POLITICS IN THE *CITIZEN NETWORK*

REMEMBERING THE SEWOL

In previous chapters, I illustrated the possible heterogeneity of Web 2.0 memory practice, and how each element works in the human-technical network. On the website, human actors and nonhuman actors interlace with each other as a network: the website is a collection of human activities, interface, database, and policy. Through interaction with this heterogeneity, the website mediates different elements and creates new relations and meanings. A website itself appears “as collections of items,” and such interface provides users various practices – viewing, navigating, and searching (Manovich, 2002, p. 218).

I argue that meanings of memories emerge and are transformed in interactions in the network of human and nonhuman actors. Langlois (2014) defines meanings as “the space where the transition from signification to making sense problematically unfolds” by turning simple signs of words, images, and sounds into existential markers through our relationships with/in the world and others (p. 23). However, it does not mean that meaning-making is a simple linguistic process of a Saussurean model – signifier and signified. As Deleuze and Guattari (1983) noted, meanings are not formed by the centrality of the signifier but by the product of an ensemble of processes in which not

simply linguistic but also social, political, technical, and material realities are involved (p. 243). Concerning technologies, links between the human body and materiality have been changed, and the traditional view of meaning, as only a human capacity and/or only a linguistic process, becomes limited. Meanings are an effort to understand “the conditioning of the practice of interpretation itself through material, technological, and social processes” (Langlois, 2014, p. 64). On *Citizen Network Remembering the Sewol*, meanings of memories are re/constructed through transductions of heterogeneous elements and its realities.

Beyond describing the topography of memory practice, I illustrate how each element intersects and how the assemblage contributes to power formations in a human-digital archive. In other words, the previous chapter describes “actor,” and this chapter articulates the “network” of such nodes.

Foucault (1980) argues power formations are always attached to the production and distribution of meanings (p. 119). Foucault’s work of power is developed in his studies of discourse, where “power and knowledge are joined together” (Foucault, 1980, p. 100). Foucault (1972) articulates the modern power of regime of archiving in discursive practice, revealing how the forms of discourses are tied to a social system through selection, exclusion, and domination. In premodern times, to become the object of description and documentation was to remember the object as a hero, and it was a symbol of the powerful. Heroic or memorable lives were documented as a privilege (Laermans & Gielen, 2007, p. 5). Unlike this premodern power of archiving, the modern power regime archives ordinary individuals: the child, the patient, and the madman. Through archiving, a modern power regime – medical institutions, schools, and

legislatures – creates discourse about commonalities, and the discourse distinguishes between normal and abnormal. Foucault notes, what is archived is the target of control and discipline and it is “no longer a monument for future memory, but a document for possible use” (Foucault, 1991, p. 192). In modern times, power is attached to institutions, and they shape meanings and define the relationship between subjects.

In premodern and modern archiving, the system of the power regime is quite simple: subject of archiving practices and objects of documentations. From premodern to modern, power is migrated from object to subject through discursive practices of meaning-making. According to Foucault (1972), power is exercised by deciding what can be spoken in a specific system and degrees of meaningfulness. In other words, a subject who can control “what can be spoken” and “how it can be spoken” has power of discursive practice (Foucault, 1972, p. 118). However, the dichotomy between subject and object of archiving is limited in digital archiving because unexpected elements intervene in heterogeneous networks of human and nonhuman archival practices.

Following Foucault, Kittler (1990; 1999) articulates “discourse networks” to rethink media with a new degree of scientific rigor rather than evaluate media by focusing on the view of its social usage. In terms of curation of archiving, “networks of technologies and institutions that allow a given culture to select, store, and process relevant data” (Kittler, 1990, p. 369). Since the website is not a narrative but a database, all items on the network become pieces of meanings. Thus, more complex power formations emerge in the assemblage of communication technologies, cultural/social process, and institutions. Since there are more diverse subjects and objects of archiving cut across the discourse network of Web 2.0 than before, the system of the power regime

is not simple.

Going back to *Citizen Network Remembering the Sewol*, users – uploaders and visitors – are the most visible agents of archiving by deciding what is archivable and meaningful. In the metaphor of Web 2.0 participatory platform, everybody can engage in the meaning-making process, opposed to journalistic privilege. Journalism is regarded as a site of memory construction by creating frameworks to understand the world (Kitch, 2008, p. 312). By reporting the news of a contemporary time, journalism serves as the main narrator of the present event and the main institution of recording and remembering. The ways that journalism remembers have influenced how memory takes shape (Zelizer, 2008, p. 85). After the ferry *Sewol* sinking, however, mainstream media was not the only narrator of reporting what was going on during the disaster.

The ferry *Sewol* disaster has been represented in not only national resentment toward the government but also distrust toward the press. During the aftermath of the disaster, mainstream media reported a great effort by the Korean government, showing the overnight rescue activities and emergency meeting of the government. However, families of the victims refuted this view and spoke of the government's sluggish response in rescue operations and the insincere reporting of mass media. Families of the victims and their citizen supporters created other places where their voices could be sensible and the memorable redistributed.

The differences between mainstream media coverage and real situation are debunked by social media. Opposing the mainstream media coverage of overnight rescue activities, social media users posted photos of the sea at night without any lights. Also, social media users reconstructed the details of the accident through victims' mobile

phone records, survivors' testimonies, and mass media coverages. The timeline Web users provided revealed not only the incompetence of the government but also biased reports by the mainstream media. Unlike how mainstream media merely provides a timeline from the ferry tilting to overturning, the citizens' timeline on *Citizen Network Remembering the Sewol* elaborates the detailed process of rescue, the timeline of the ferry sinking crossing over the victims' calling for help, sending a distress signal from the ship captain, the reaction of a seascape, rescue process, and the number of victims and survivors per hour. Such elaboration debunks how the government and police system properly coped with the disaster and shows how mainstream media reported incorrect information in a back-scratching alliance between the government and mass media.

Against mainstream media, users are narrators as well as curators of the *Sewol* memories on the website. By engaging in memory collecting, users have the right to create, classify, and remove content, within limits though. Users can upload any content they think memorable and create their own meanings of each content by classifying it through the title and description of the content. In the aftermath of the disaster, users reconstruct the circumstances of the sinking through restored videos from victims' mobile phones; cherish victims and their family by migrating a public monument to online memorializing; and criticize an insecure social system and government by uploading photos of public rallies. Users have uploaded not only the timeline, but also photos of cities decorated with yellow ribbons, videos from victims' mobile phone, rallies in public plazas, and exhibitions for cherishing victims. Their content contributes to meaning creation. Through their photos, users express antipathy toward the government and mainstream media. In fact, the *Sewol* memory practice tends to protest against the

government. It began with the families of victims' actively protesting to pursue the probing truth of the disaster and the enactment of a special law. Citizens have gathered support for the victims and their families against the government. Such protest movements are copied on the website; now, the contents become a main narrative of the *Sewol* website memories. The website articulates "Let's gather scattered social memories of the *Sewol*" ("Citizen Network," 2014). However, since users mainly upload pictures of public rallies and protest, the *Sewol* memories contain more political tendencies.

It means how the user curates content – uploading, displaying, and ordering – influences meanings of memories. Citizens' photos and videos become sources for future memories of the *Sewol*. Users become a powerful narrator by rearticulating the memorable and the sensible. Users own the right that decides the importance of content, and every content they uploaded – photos, naming, descriptions – becomes a part of the *Sewol* collective memories and counter memories. Users "dispute over the distribution of the sensible" from mainstream media and government; reconfigure the communal distribution of the memorable; and make the invisible visible (Ranciere, 2010, p. 38). In addition to a narrating role, users curate parts of the display. In "Content upload," users have the right to delete content as well. Considering the database trait of the website, users can transform the display of contents by uploading, editing, and removing contents. Contents and/or data of the *Sewol* memories that are already uploaded can be removed anytime by the users who initially posted the memories; the ability reconstructs not just the content displayed but also the context of memories' meaning-making.

As well as the act of content selection, users contribute to create meanings of memories through categorizing and naming. With their photos and videos, users provide

a description and name for the content. When users upload their content, users describe information about the document. With victims' picture, there are different meanings between naming, "Cherishing them," and titling them "Let's reveal the truth." The latter is a more active and political meaning-making process. Also, the title and description given by uploaders are important to the search algorithms, which means the future online searching of memories. Once contents are uploaded, visitors of the website can search any words through a search engine, such as Google or Naver (the biggest portal site in South Korea), or inside of the memorial website; and the website shows the content that has the same word in the description and naming. The result influences visitors' narrativizing memories of the *Sewol*. For example, if I type "the probe" on the search engine of the website, I can see six pieces of content that contain the word "the probe" in their naming and description, regardless of the initial categorization from uploaders or administrators. Those six contents were about the promotion of social rallies to probe the truth of the disaster. The result was quite different from the end list when I typed "ribbon" on the search engine. There were four pictures of cherishing victims with yellow ribbon decorations. The result of "the probe" evokes my awareness of a problematic social system; the contents of ribbon create sympathetic emotions.

All content that users uploaded create a site of memories, the place that embodies concrete traces of the past (Nora, 1989, p. 22). Consensual notions attached to the website help define the *Sewol* memories. Without users' participation in building the archive of "the nomination of the visible," counter and/or collective memories of the *Sewol* would not exist (Foucault, 1994, p. 132).

However, users are not a sole agent of the archival project. The administrator of

the website is highly involved in the curating. In fact, curating work of *Citizen Network Remembering the Sewol* is mostly accomplished by administrators. Regardless of users' direct uploading of content, most of the collecting of work is conducted by online and offline donation of documents. Administrators and a citizen association gather and classify the records, and digitize them. The information of documents given by the initial uploader is important, but the administrator categorizes and classifies collected records. Except for the "Contents upload" section, every menu of the *Citizen Network Remembering the Sewol* is managed by the administrator. Once citizens donate artifacts of memory, administrators select and upload donated contents on "Viewing records." No one knows whether every collected data are exhibited on the website. Like users' content curating influences meaning-making of the *Sewol* memories, ways in which the administrator arranges content creates new meanings of memories. Since the website is inherently a collection of items, a database, meanings are different depending on which data come next or emerge together. The selection of data among a huge collection is the website users' work, but the administrator's curation of display highly influences memorializing in the database. "[T]he ability to collect data from numerous disparate resources, collocate it" and plan to use in the future has a decisive effect in making meanings of memories (Bowker, 2005, p. 227). Meaningfulness comes from arranging archived records into memories, not from mere collections of documents itself; power emerges between the tensions.

However, meaningfulness is not fixed. Both users and the administrator re/distribute the memorable and archivable, but the memories attached to the archive engage in very different systems of notions at different periods of time, like other forms

of memory practice. However, Web 2.0 memory practice has not only given meanings to users through its content but also the nonhuman forces transform memories continuously.

The website's technology allows the display and curation of archived objects outside of the website through a huge network of links. The administrator provides related lists of other URLs as links, and the website's technology enables easy access to other websites. Through the "Share it" button, the contents can be moved to another context. On the other website, meaningfulness is represented in a different system. The number of hits on the *Citizen Network Remembering the Sewol* equates to the number of "Likes" on its Facebook account. Also, the same contents are placed on different sets of data, and the contextual meanings of memories are transformed there. The photos of victims' shoes I explained in a previous chapter are put in a different possibility of meaning by technically moving the content to my account. There are different users who have kinship with me, and it causes different routes of prosthetic memories. The photo of shoes with the *Sewol* victims' picture on the *Citizen Network Remembering the Sewol* and the same photo posited with my Grand Canyon travel pictures create totally different practices of meaning-making.

Without traversing, the website platform itself can be transformed anytime. Since the website platform regulates what users can do in the website, different meanings of memories can emerge in a new form of interface. Website interface transfers meanings of memories by determining the archivable form. The website grants the right to select content to users, but it does not mean every content can be archived. There is no technical filter of contents' regulation; but technology limits the archivable forms or what becomes technologically visible. Users can upload only born-digital records, or born-analog

records must be uploaded after digitizing. Without technical support, not every record citizens spontaneously gathered can be displayed on the website. The interface technically filters the archivable memories, and the administrator refilters the contents during digitizing contents and categorizing.

Furthermore, on the website interface, there are traces of users and it has potential to create meanings. On the war memorial, visitors' engagement is usually represented as traces of their touching, leaving artifacts at the memorial, and written messages; and such traces of engagement interact with meanings of memories (Sturken, 1997). Like memorials, the website embodies traces of visitors' participations, but the participation in memory practice is visualized with the number of views, comments, and shares. In addition to the participation of content creation, each website has different ways in which users express their engagement in the basis of Web 2.0's participatory platform. On *Citizen Network Remembering the Sewol*, users can engage the uploaded contents by leaving comments and sharing it through users' social media account. Each participation adds new meanings to what is already there. For leaving comments, the new content is added following the original content, and it is accumulated or revised by the next visitor. In fact, contents on the *Citizen Network Remembering the Sewol* have no comments. However, such content is migrated to their Facebook account by the administrator. Because of easy access to Facebook content through individual NewsFeeds and Friend networking, there were hundreds of "Likes," comments, and shares. Even though it was the same photo of the original website, the photo on Facebook created more active participatory meanings of memories.

The exact view of the content appears on the website platform as hits.

Furthermore, these visual evidences determine the value of the content. Even though all archived items of memories have equal weight, the number of comments and hits represents the content's degree of meaningfulness in the future. Meanings of memories are always contextual and liberated from their usage, but meaningfulness on the website is represented as use-value or exchange-value of content (Gehl, 2009, p. 49). Even though there is no exact relation between hits and meaningfulness, content with more hits is seemingly more meaningful.

Regardless of users' perception of meaningfulness, the use-value becomes one criteria of data evaluation for long-term preservation. Archiving always concerns significance for the future, and not every document is digitally preserved. Without use-value, the data cannot be guaranteed to be preserved forever. The present usage denotes potentials of future usage; the visualized participation of users substitutes for the meaningfulness of the content itself. According to the *Digital Preservation Law*, the administrator must submit preservation metadata, and it contains technical details on the format, structure and use of the digital content, the history of all actions performed on the resource including changes and decisions, the authenticity of technical features, and the responsibilities and rights to preserve ("Digital Preservation," 2015). Based on metadata, the national preservation policy decides whether the content can be archived or not. Specifically, "the history of all actions performed on the resource including changes and decisions" means all users and administrator's practices on the website are archived and decide archivable memories for the future ("Digital Preservation," 2015).

Stiegler (2009) articulates that mnemotechnologies, technologies of memories, is not only the process of remembering and recalling (retention) but also the capacity of

being in the present (attention), and projection into the future (protention); the past, the present, and the future coconstruct memories (Stiegler, 2009, p. 8). Retention is memory practice of both remembering and forgetting; “it is the capacity to imagine out of the past” (Langlois, 2014, p. 130). Since memory practice of remembering and forgetting is produced out of the time when the event happened, what is archived and not archived becomes what is remembered and forgotten in the moment of recalling. In the level of retention, what is archived is determined by both users, the website administrator, and the interface itself. When people imagine the *Sewol* disaster of April 16, 2014, every documentation influences memories of the *Sewol*. Through meaning-making with the website elements, users remember and forget *Sewol* memories. However, the website itself also decides whether the users remember and forget the memories. It represents, as the website’s format, regulating, technical support, preservation law, and interface itself. Each element decides archivable forms or content, then the decision transduces meanings of memories. Even though originating in settings of human beings, there are no pure human practices but only mixtures between human practices and computer practices of programming, transcoding, and automation.

The retention is highly related to the website’s sense of attention and protention. On the digital media platform, there are many different kinds of information, and all are competing for users’ attention. Attention means “the capacity to be in the present,” it is work of the interface design (Langlois, 2014, p. 131). The website displays various platforms that need users’ attention – uploading/reading contents, sharing, leaving comments, and link. The design of the platform represents users’ attention and it becomes evidence of protection, as the history of all actions. Protention, “the capacity to envisage

what could or should happen next,” decides which memories can be preserved in the long-term. For long-term archiving, the website evaluates the possible use of the data, what was memory; technical facts of attention is vital criteria in evaluation. Users’ tendencies of memory practice, based on every technical archive of actions – the number of hits, comments, sharing – are potential of memory practice itself. Going back to Foucault, archiving is “no longer a monument for future memory, but a document for possible use” (1991, p. 192).

Once digitized, every record of memories becomes data, and the data are stored in “a structured collection of data,” database (Manovich, 2002, p. 218). On the database, a new element can be added or inserted to the list; the collection always grows and is never complete. This means that contents on the website are not fixed. Since the contents on the website are not a series of connected and closed events, meanings are created while navigating the collection of database. However, the database cannot be completed. Contents that users think are memorable can be added continuously, and contents that are already uploaded can be deleted anytime by uploaders or an administrator. Every element of the website – users’ participations of curating, administrator’s work of categorizing, website platform, policy for digital content, history of content usage, and technology – transduces the *Sewol* memories. The database has the potential to create other meanings in the interaction with different periods of time and a transformable platform of content; and all elements become the potential of meanings.

On the digital memories, there are several moments of indexation, classification, and translation. In every moment, heterogeneous agents are intervened, modulated, and linked together, entailing new meanings of memories. Web 2.0 technical mediation of

memories are not simply present on a flattened space. Web 2.0 memory practice is a collective of tensions between invisible infrastructure and visible practices.

CHAPTER 5

CONCLUSION

The concept of transduction points out the productive tension that “couples human collectives and non-human forces,” folding these heterogeneous forces and elements together as “collectives individuate” (Mackenzie, 2002, p. 205). Transduction helps us to understand ways in which different realities are encountered and emerge as a new mode of existence and capacity. Transduction is “eventful articulations between realities on different temporal and corporeal scales” (Mackenzie, 2002, p. 205).

Through the case study of *Citizen Network Remembering the Sewol*, we can see the tension between human and nonhuman on the meaning-making process of memories. Web 2.0 contains meanings within human perception but also has both nonliving and living potentials, which are not fully explained within existing semiotic systems. Meanings of memories in the *Sewol* memorial website, all diverse elements – users, administrator, interface, policy, and data – become potential meanings. Such transductive process in the network forms power relations. However, the power regime is not a simple dichotomy compared to what Foucault’s modern power regime had been. Every element of the network interacts with the mnemonic process of retention, attention, and protention. Meaning-making is not a sole human thing; it is a mixture of heterogeneous

realities, and all together create meanings of the *Sewol* website memories.

Before a concluding remark, I articulate the limitation of this thesis. First, this thesis examines one memorial website in South Korea in terms of ANT perspectives. Since a network inherently cannot be fully described, this network is not fixed and static, but it progresses and expands itself continuously. In that, I note that I drew topography of human-technical network of Web 2.0 memory practice, thereby the topography in this thesis must be limited and partial. Also, the ways in which I drew the heterogeneous network was really tough. How can I show the human level of practice and computational practice? Methodologically, I suggest more diverse approaches to reveal this heterogeneity. Ethnography can be one possible approach to both human and non-human factors. All heterogeneous practices are interpreted, in my point of view. As every ANT study is, this thesis cannot be generalized as Web 2.0 memory practice. Despite that, I want to reveal the transductive process of meaning-making through even a part of the network.

Second, the memory practice of the ferry *Sewol* disaster is quite new and still ongoing. The disaster happened just 1 year ago from the present. Citizens have attempted to remember and cherish the disaster on the website, but the practices are very limited. The website itself is unstable and its contents are scant in comparison with social networking sites such as Facebook or Twitter. Contents are more frequently uploaded on individual Facebook accounts. Since the focus of this thesis is Web 2.0 memory practice, I quoted some examples from Facebook accounts. Also, *Citizen Network Remembering the Sewol* website is under construction for renewal while I was writing this thesis. The fact that I cannot fully observe the whole process of interface and meaning evolving

remains the biggest limitation of my research, but it is also the potential of this thesis at the same time.

Despite these limitations, in this thesis, I have shown that the ways in which we understand both memory practice and technology differ. STS has taken technology away from instruments of societies and cultures, but reveals “how the capacities [of technologies] and fabric of our collectives are constituted” (Mackenzie, 2002, p. 208). This thesis follows the STS perspective and attempts to understand technology and the human practice of remembering with/in technology in a different way. Human and machine are not linked to fixed linear relations, but they can be coupled together as one equal with the other (Simondon, 2010, p. 74). Specifically, memory practices can be an exemplar of human-machine interindividual coupling.

Today’s social media studies have mostly revealed Web 2.0 softwares’ surveillance of human practices in digital capitalism (Chun, 2006; Elmer, 2004; Gehl, 2011; Langlois, 2014; Stigler, 2009). In the business model of Web 2.0, every human practice is archived and used as the website’s monetary values, and the power relations within the Web 2.0 business model are quite axiomatic. The website for this thesis, *Citizen Network Remembering the Sewol*, can be interpreted as a transductive process of memory practice, as concerns tensions between human and technology as equal with each other. However, usual human archiving practice is sold as data, and it may not be liberated from technologies’ (or the websites’) surveillance and control. Memory practice is no exception. In his book *Delete: The Virtue of Forgetting in the Digital Age*, Mayer (2011) states that:

Digital memory [...] has the ability to [...] make us [...] stop trusting our own

memory, and thus our own past, supplanting it not with an objective past but an artificial one. It's a past that is neither ours nor anybody else's; instead it is a synthetic past reconstructed from the limited information digital memory has stored about it, an utterly skewed patchwork devoid of time and open to manipulation in both what it contains and what it doesn't (p. 123).

What can users do to prevent this imbalance between human and technology? This will be the first implication for future studies. Power relations in these transductive networks are always the main concern of STS and even in memory studies about digital memories. Memory politics in digital archiving must be articulated in a different form as websites within their own architecture, database, users, and policy.

Lastly, this thesis includes various potential for studying digital archiving. This thesis can be expanded to other issues in digital archiving and narrowed down to a contextualization of South Korean digital archiving. For the latter question, this thesis can be developed in comparison with other digital archiving websites, like 9.11 digital archiving, articulating dynamics of Web 2.0 memory practice within political, national and historical context. Also, during my research on the heterogeneity of network, various and significant issues came up. Instead of going back to such points of my analysis, the digital preservation policy of the University of Utah evokes interesting questions about studying digital archiving. The document notes that (Keller, 2012, p. 6):

[Metadata] often includes the following information: Provenance: Who has had custody/ownership of the digital object? Authenticity: Is the digital object what it purports to be? Preservation activity: What has been done to preserve the digital object? Technical environment: What is needed to render and use the digital object? Rights management: What intellectual property rights must be observed?

Even though the document was written for processing online preservation, it includes all possible critical questions to digital archiving and memory practices. Ownership of the data, authenticity and subjectivity, tensions in preservation, and technical support, all

influence meanings or existence of digital data and each is situated in politics of intersection. For example, the administrator's role of digitizing data and producing metadata evokes the question of data's authenticity. In this process, authenticity is not a static thing, which is attached to an original piece. Also, it relates to the question of ownership. Humans and technology have a different power for controlling content and usage of data. Then, who is an owner of digital memories or data? Technology and digital archiving is not a given thing. We should keep them at a distance to understand them differently.

Memories are always in repetition and reconstruction. For memory practices in digital environments, neither the dimension of technical practice nor human subjectivity and experience is dismissed. As a concluding remark, I want to ask both human and nonhuman actors: Where is your individuality in the heterogeneous network of Web 2.0 memory practices? Digital memories are a mixture of such individuations.

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