Online Learning Patterns and the Social Construction of U.S. Beef Imports in Korea
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Chisung PARK, Mark WILDING, and Sung-Jun MYUNG

Abstract

This study examines the way that three groups of citizens (adolescents, housewives, and the politically active) socially constructed the mad-cow issue in Korea in 2008. In particular, the effects of political and social influences, group value systems, and online learning patterns are investigated. Quantitative data from three websites is combined with qualitative sources, including newspapers and online message boards. The results reveal that despite different learning patterns, adolescents focused on factual information while the other groups took a more interpretive approach, and all three groups initially constructed the issue as one of health security. However, following government announcements, politically active citizens came to see the issue through an anti-government lens. Rather than facilitating an improvement in understanding between the government and the politically active, government communication was instead the most influential external factor on the anti-government construction of the issue. This study suggests that active two-way communication between all parties involved, including the government, is needed to improve social learning, especially when it occurs in online communities.

Keywords: mad-cow disease, online learning, social construction, adolescents, housewives, politically active citizens

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Introduction

Following the widespread adoption of information technology by the public, many people now spend a considerable amount of time engaged in social relations on the Internet. Online social relations, which facilitate timely exchanges of information and opinions, are directly related to learning and have helped to create collective intelligence (Lévy 1994). Just as one of the goals of social relations and communication is to learn and refine our understanding of complex issues through intersubjective interpretation (Schutz 1967), online social relations enable the public to collaboratively learn and to build and share social constructions through the exchange of factual information and subjective interpretations. In this way, the Internet has become a vital tool for millions of people, as it is frequently utilized to search for information and to learn, especially when people face complex issues (Miranda and Saunders 2003).

The present study aims to explore the processes through which online learning and social construction of critical social issues occur, and to identify the key determinants that affect the processes through the investigation of an empirical case, public discussions of U.S. beef imports and the potential risk of mad-cow disease in Korea in April and May 2008. This case is significant because adolescents and housewives, who are usually considered to be inactive in social issues, were the main force behind candlelight protests against the government decision to resume imports. This role became possible through online interaction and learning (Kim 2010; Yun and Chang 2010). Moreover, although the issue eventually died down, it has not gone away completely. Protests about the Korean government's later decision to allow U.S. beef imports from cattle aged less than 30 months gave way to unrest over the Korea-U.S. free trade agreement (FTA), a scenario which rumbled on until implementation of the agreement in 2012. In addition, the mad-cow issue threatened to reemerge following the discovery of a cow infected with bovine spongiform encephalopathy (BSE) in California in April 2012.[1] A

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1. "Blue House Walking a Lonely Path on US Beef Imports," *Hankyoreh*, April 30, 2012, http://www.hani.co.kr/arti/english_edition/e_international/530489.html.

fuller appreciation of this case is therefore necessary in order to understand the root of the ongoing controversy. More specifically, understanding the reasons why various groups of stakeholders developed particular social constructions could help build bridges between the different parties involved and facilitate social consensus.

Considerable research has already been undertaken on the public response to the resumption of beef imports, including studies concerned with the subjective nature of citizen reactions to the government announcement. The mad-cow issue has been viewed as a health security matter (Kim and Kim 2009), the reemergence of Korean nationalism (Burmeister and Choi 2012), and the rise of post-materialism (Cho 2009). It has been argued that the subjective responses from media, intellectuals, civic groups, citizens, and political parties had negative effects not only on the consumption of U.S. beef (Eom 2009), but also on wider civil society (Hong 2010). The technical and scientific nature of the issue can also be seen as part of the reason for the subjective responses. Indeed, it has been argued that the risk attached to U.S. beef was socially amplified.[2] The concern about the loss of objectivity has also been reflected in other studies. For example, Lee and Jung (2009, 388) were skeptical about the role of the Internet as a public sphere due to the lack of concrete sources for online posts, since "to work as a public sphere, the bulletin board of Internet Cafes should be full of stories with scientific facts and information."

Using intersubjectivity of the public as an entry point to explore the processes which online communities of adolescents, housewives, and the politically active[3] went through as they developed their interpretations of the situation, this study investigates the way that sociocultural influences and group value systems impacted online social learning patterns, in order to examine the social construction of the issues surrounding U.S. beef imports in the three communities. This article also aims to explicate the ways in which external events, such as the release of new information,

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2. The social amplification of risk concerns the process through which perceptions of risk may be intensified or attenuated through social, psychological, or cultural factors (Chung 2009).
3. Details about the three groups will be discussed in the research design section.

were reflected in learning processes, and to explore whether it is possible to distinguish distinct learning patterns and social constructions among the different groups.

Learning Processes and Social Constructions

Online Social Learning

Under uncertainty, people learn through searching for and processing the necessary information, and by taking a trial-and-error approach (Axelrod and Cohen 1999). As such, communicative activities undertaken in the course of social interaction may be regarded as a type of learning (Webler and Tuler 2006). Compared to offline communication, online discussion has both advantages and disadvantages. In terms of its advantages, online communication provides a more equal environment for people to express themselves, as participants are less likely to be aware of the status, gender or ethnicity of the users (Suler 2004). Online communication also enables individuals to more easily reach large audiences and has a greater ripple effect than face-to-face communication because exchanges of information conducted in chat rooms or blogs are open to any community members who wish to read those posts (Riegner 2007).

Via online communication, people diffuse and probe new information, try to find like-minded individuals, exchange views, and even try to persuade others who have different points of view. The distinguishing feature of this kind of contact is *multi-way* communication; people are free to communicate (i.e., post, view, and reply) almost simultaneously. This process often leads to another feature which is particular to online communication: the rapid exchange of facts and opinions which may create spontaneous feedback loops. In terms of the disadvantages of online communication, it is time-consuming in nature and the possibilities for misunderstandings are greater due to a lack of physical cues and voice inflection. Additionally, there is a possibility of individuals intentionally misleading others or using false identities (Suler 2004). However, when con-

sidering the advantages that online communication offers, it is generally considered to be an excellent resource for collaborative learning (Kitchen and McDougall 1999).

Online social learning involves both the search for factual information and the formulation of subjective interpretations. The former is concerned with finding data and evidence and does not always require active exchanges with others. The latter may also take place independently as individuals fit new information into existing knowledge structures and formulate opinions (Ausubel et al. 1968). Nevertheless, an important difference is that learning by interpretation may also involve the mutual exchanges of opinions. These forms of learning are closely linked, as individuals often search for factual information before developing interpretations, and when exchanging opinions, individuals may check their understanding of the facts with others (Kolb and Fry 1975). Moreover, what are regarded as objective facts are often the result of earlier interpretations. However, while learning by factual information aims to comprehend existing knowledge, interpretation is concerned more with the generation of meaning according to context.

When people face critical social issues of which they have little prior knowledge, the search for factual information and their subjective interpretation of this material may take place simultaneously. In order to achieve the former, people seek verifiable information from recognized institutions. In cases where it is difficult to obtain adequate information or clear conclusions cannot be reached from the available evidence, people may combine the information at hand with their opinions, which is a process of understanding and interpretation that eventually results in socially constructed beliefs to justify their perspective. In this process, people filter the information that they find and focus on particular aspects.

Filtering Effects

Here we use the term "filter" to refer to the lens or frame through which people view a particular issue. It has long been argued that rather than having intrinsic meanings, statements instead acquire meaning according

to context and style, and may be interpreted differently than the creator intended (Bateson 1955). Early studies of "framing," with their emphasis on how people receive and filter information, can help us understand how people arrive at differing interpretations. From the perspective of Gamson, people are far from passive recipients and it is important to focus on their intelligence and agency in trying to understand issues: "people read media messages in complicated and sometimes unpredictable ways, and draw heavily on other resources as well in constructing meaning" (1992, 6).

Rather than imposing limits on the way that people process information, early scholars of framing such as Erving Goffman saw frames as indispensable or the scaffolds of credible stories (König 2004). For Goffman (1974), sets of conventions within which individuals interact are a crucial part of "keying," the process that gives new meaning to activities that are already meaningful in terms of some primary framework, framing an intersubjective process. As part of the complex ways in which individuals process information, it is important to acknowledge the nature of communicative interactions, as individuals may filter information differently depending on who the intersubjectivity is shared with. Group dynamics are particularly important in this respect and there is evidence that group polarization may take place either as a result of persuasive argument or a process of social comparison, due to individuals' desire to gain acceptance by the group (Isenberg 1986). It is important to acknowledge, however, that group polarization does not always occur, and that contact with groups with cross-cutting opinions can lead to an understanding of the reasons behind alternative views. As such, membership of cross-cutting groups may lead either to the strengthening of preexisting views or a change in perspective, depending on how the individual responds (Sieck and Yates 1997).

Sociocultural Influences and Social Constructions

Sociocultural influences may help to explain both why citizens participate in policy processes (Kenny 1993) and how particular social constructions are formulated (Burr 1995; Schutz 1967). When it comes to public health

security issues, people's sociocultural backgrounds may affect their perception of potential risks and ultimately contribute to the creation of socially constructed myths or beliefs. Unfortunately, the effects of sociocultural influences on the social construction of knowledge have traditionally been overlooked, particularly when it comes to public health security. Sociocultural influences on social constructions can be divided into "political influences" and "social influences" (Dake 1992). As political influences, the present study will include government behavior and public relations strategies, whereas social influences will include mass media (i.e., TV and print media) and the formal statements of scientific communities. Based on the above discussion, the research framework in Figure 1, below, will be utilized.
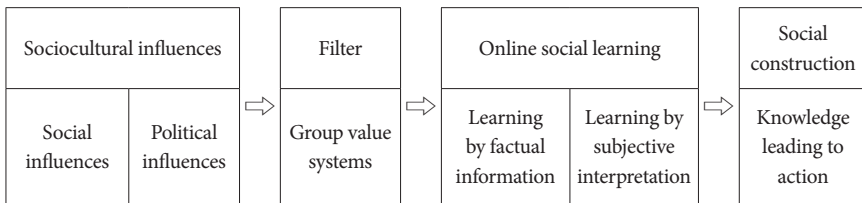
Figure 1. Research Framework: Social Construction via Online Learning

The process of socially constructing knowledge involves both learning by factual information and by subjective interpretation. In this process, the knowledge obtained is a product of filtering sociocultural influences through the lens of group value systems. This may be seen as an argumentative process in which participants seek to better their understanding. Significantly, the way that sociocultural influences are filtered may lead to particular patterns of interaction in each community. While some groups may emphasize subjective interpretation or attempt to integrate factual information with previously held opinions, others may focus more on obtaining factual information in order to better understand the situation. Hence, faced with the same social issue, different communities could forge very different social constructions and respond in diverse ways.

Research Design

This study employs an exploratory case study method to understand the processes involved in learning about a critical social issue. The analysis focuses on interactions in three key online communities, Bizarre or Truth (http://cafe.daum.net/truepicture), 82Cook (http://www.82cook.com), and Agora (http://bbs1.agora.media.daum.net/gaia/do/debate/list?bbsId= D101), which primarily consist of adolescents, housewives, and the politically active, respectively. Two of the key reasons for selecting these diverse groups were the differences in political sensitivity and sociodemographic backgrounds. First, adolescents and housewives have traditionally been regarded as politically passive groups, due to the amount of time required for study and the barriers to equal relations with men, although women have been involved in alternative forms of political activity such as the consumer cooperative movement (Kim 2010; Kim and Lee 2010). We thus sought a comparative group which has been seen as politically sensitive and activist-oriented. Second, there are both gender and age differences between the groups. In contrast to the adolescent and housewife communities in this study, whose members are younger and more likely to be female,[4] the politically active group is male dominant and is more diverse in terms of age, with participants ranging from their mid-20s to their 60s.

While the three communities were particularly active, the extent to which their views were representative of wider Korean society could be questioned. However, their selection can be justified because we can only begin to understand the reasons behind the growth of the issue leading up to the 2008 protests against U.S. beef imports, often referred to as the U.S. beef crisis, through the investigation of groups which held different perspectives from the government. Moreover, significance was attached to the three communities, both by participants in the candlelight protests and by journalists. For example, the teenage participants in the candlelight pro-

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4. Teenage girls are generally thought to have been more active in regard to this issue, perhaps as females tend to be more sensitive to issues of life and food (Kim and Lee 2010).

tests who were interviewed by newspaper reporters often cited Bizarre or Truth as a place where they became acquainted with the issue,[5] while 82cook gained a lot of publicity due to its members' efforts to boycott a newspaper company which they regarded as neglecting the potential health risks of imported U.S. beef.[6] In addition, the third community, Agora, has long been used by the mass media in order to monitor public opinion. The popularity of these online communities, along with the diversity and intensity of their debates, meant that they were subject to TV and press interest, and this media attention in turn attracted more people to read posts and contribute to discussions.

Significantly, the three online communities also satisfy the basic requirements for collaborative learning, due to site usability and the sociability of members (Laister and Kober 2002). The three online communities not only formed years before the issue emerged, but had already established social relations through online discussions. One of the first online communities to question the risk of BSE in U.S. beef was 82cook, a site where relatively young housewives exchange information on topics such as child rearing, housekeeping, and family problems. In the case of Bizarre or Truth, this website is usually used to share bizarre pictures of celebrities. In contrast, users of Agora tend to be more interested in political issues and be on the left of the political spectrum. As they are enthusiastic about discussing political issues, their level of political knowledge is relatively high compared to other groups of citizens. For this reason, we refer to the members of this online community as the politically active. Agora is part of the popular portal site, Daum, which has approximately 37 million registered users and offers a variety of services from email and shopping to personalized blogs and cyber cafés. The number of actual Agora users is in reality far less than 37 million however, as it is one of the many cyber

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5. "Yori yuga saiteu-seo chotpul sijak" (Candlelight Protest First Ignited from Cooking and Baby Caring Website), *Seoul Shinmun*, July 29, 2008, http://www2.seoul.co.kr/news/newsView.php?id=20080729006009.

6. "Chotpul baegil chamyeo 10 dae jindan" (Diagnosis of Teenager's Participation in Candlelight Protest), *Seoul Shinmun*, July 29, 2008, http://www.seoul.co.kr/news/newsView.php? id=20080729006008.

cafés on Daum, and only those who are interested in sociopolitical issues are likely to frequent its pages.

Table 1. Features of the Three Online Communities

	Bizarre or Truth	82cook	Agora
Opening date	June 7, 2000	October 1, 2002	December 2004
No. of members	App. 2.8 million	Over 110,000	App. 37 million (Daum)
Membership	Open to the public	Open to the public	Open to the public
Purpose of the website	To enjoy humorous, bizarre pictures, and videos of celebrities	To exchange cooking and housekeeping tips	To discuss current affairs, business, and culture
Member charac-teristic	Adolescents	Homemakers in their 20s and 30s (female dominant)	Mid-20s and up (male dominant)
Main boards for discussion	Public notice, everything about sports, celebrity library	Living, food, cooking, life, community	Politics, economics, real estate, stock exchange, social issues, education, culture, and entertainment
Message boards for discussion about BSE	Power that changes the country: by the people, everything at the scene, let's go to the scene	Free message board	Politics
Total no. of posts (from April 19 to May 22, 2008)	871	Does not provide the total number	98,763
No. of posts analyzed (from April 17 to May 25, 2008)	266	1,456	661

Measurement

Both the quality and quantity of messages are important variables which impact people's perceptions (Petty and Cacioppo 1981). In measuring quantity, this study relies on data on the number of posts, views, and replies. In terms of quality, content analysis is used to distinguish posts based on factual information from those based on subjective interpretations.

The number of "posts" indicates not only the degree to which people have attempted to diffuse factual information, but also the extent to which they have endeavored to share their opinions with others. In addition, the quantity of posts is an indicator of the importance attached to the issue by online community members. The term "views" is used to refer to the total number of times that a post has been opened. It is necessary to "view" a post to read it, although opening a post does not necessarily mean it has been read in its entirety. By reading posts, people not only learn about the existence and nature of a social problem, but are also able to understandthe way the problem is seen by others. Though passive in nature, the viewing of posts is nevertheless crucial in the diffusion of information and is essential if a community member is to post a reply. "Replies," on the other hand, require more active participation, and allow members to ask questions or express opinions. If readers have strong feelings about a post, or want to know more about its meaning or intention, then they may post a reply. Posts and views entail one-way communication, yet replies are essential for two-way communication and discussion to take place.

This study divides posts into two types according to their contents: factual and interpretive posts. The intention of making factual posts is to disseminate specific information to assist the understanding of others. This type of learning takes place when community members make posts containing verifiable information and view and reply to the posts of other members. In learning through interpretation, both factual information and the actor's analysis are ingredients for learning. Beyond a simple understanding of the issue, people try to reduce their cognitive dissonance and construct their own meaning through social interactions (Schifter and Simon 1992). Thus, interpretive posts play a more direct role in the social

construction of knowledge, as the exchange of these posts helps to create an intersubjective understanding. More specifically, an increase in the number of interpretive posts and replies suggests the emergence of social constructions.

The nature of the posts was analyzed as follows. First, the category of posts relying on factual information includes the posts written on the basis of formally published documents such as: newspapers, broadcasting content, government announcements, and statements from the scientific community. Second, interpretive posts are distinguished by comments based on personal understanding and/or emotion. Finally, posts that promoted petitions against the government decision or campaigned for protests were excluded from this study. Posts were coded separately by the authors and reviewed in cases where different codes were initially assigned.

The number of posts, views, and replies was then compared to the number of news reports in the broadcast and print media by date. It is assumed that increased news coverage will result in greater online discussion since people are more likely to become interested in a social issue if it receives greater coverage in the media.

Time Range

The time range of the study spans from the decision of the Lee Myung-bak administration to resume U.S. beef imports (April 18, 2008) to the announcement of policy renegotiation and President Lee's apology to the public (May 22, 2008). Details of the case are arranged in chronological order in Appendix 1. In order to empirically investigate this complex process, the case has been divided into three phases. Phases one and two are divided by the burst of collective action on May 2, 2008, when online inquiry and discussions spilled over into offline candlelight protests, and phases two and three are divided on the basis of reported changes in perspectives (i.e., social constructions) of the issue from public health to anti-government around May 14, 2008.

Data Collection

Both quantitative and qualitative data were obtained from the three Internet communities in order to compare the interaction patterns for social learning and to identify the factors affecting the process of social construction. To collect quantitative data, the three websites were reviewed and statistics were compiled on the number of posts, views, and replies per day from April 17 to May 25, 2008 (39 days). This data was collected in March of 2009. Only posts related to the "mad-cow issue"[7] with more than 100 views were used, on the basis that posts with less than 100 views did not encourage sufficient interaction and did not have enough diffusion capacity to produce meaningful citizen inquiry. Virtual communication skills, which are a requirement for efficient online group learning (Knoll and Jarvenpaa 1995), were lower in these posts not least because they contained more insults or libelous comments. Using 100 views as the threshold for inclusion means that, out of a total of 10,566 posts, 2,386 were utilized in this study. Turning to qualitative data, multiple sources, including newspapers, online message boards, and research studies from public and non-profit agencies were used to explore the impact of sociocultural influences on the three communities.

Description of Sociocultural Influences

Based on the research framework (Fig. 1), relevant sociocultural influences can be organized into two categories: political and social factors. In order to investigate social influences in detail, this study further divides this category into three subcategories: the scientific community, mass media, and civil society.

First, political influences, in the form of government communication, can be summarized according to six actions:

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7. The search term used in this study was *gwangubyeong* (mad-cow disease). All posts containing this phrase more than once were utilized.

1. Pre-phase: In December 2003, ban was imposed on all U.S. beef imports, due to the possible risk of BSE.[8]

2. First phase: The decision to lift the ban on April 18, 2008 came as a surprise to almost everyone, including the Minister for Food, Agriculture, Forestry and Fisheries, who just one day prior to the decision stated that discussions about U.S. beef imports had a long way to go (*Korea Economic Daily*, April 18, 2008).[9]

3. First to second phase: Until May 5, 2008, there had been no official announcement from the government.

4. Second phase: From May 5 to mid-May, the government engaged in one-way information dissemination and did not listen to the concerns of citizens. For example, the government defined references to the risk of BSE in U.S. beef imports as a "ghost story" and continued to argue that citizens should disregard such accounts, despite the fact that they had formed the basis of the ruling party's earlier stance.[10]

5. Third phase: Hearings in the National Assembly on May 7, 2008 led to discussion of the FTA. On May 22, 2008, President Lee Myung-bak issued an apology to the public.

In terms of social influences, three different sources can be identified. First, the scientific community:

1. Pre-phase: An announcement from the World Organisation for Ani-

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8. BSE-infected cattle were found in 2003 in the United States. Although the U.S. government maintained that U.S. beef was safe from BSE due to the introduction of heightened controls, 65 countries including Korea maintained full or partial restrictions on the import of U.S. beef products on the basis that the tests conducted in the United States lacked rigor. Imports resumed in 2007 for a short time, but were stopped again due to negative public sentiment, the reluctance of the Roh Moo-hyun administration, and the breach of regulations concerning the removal of bone chips by U.S. beef suppliers.

9. "Ppyeo inneun mi soegogi heoyong" (Permission for U.S. Beef Imports Which Include Bones), *Korea Economic Daily*, April 18, 2008, http://www.hankyung.com/news/app/newsview.php?aid=2008041850418&intype=1.

10. This apparent about-face can be explained due to the Lee administration viewing the import of U.S. beef as an instrument to achieve Korea-U.S. FTA related goals (i.e., economic prosperity).

mal Health[11] in 2006 and the 2007 publication of the Korean translation of *Brain Trust* (Kelleher 2004) both stressed the risks associated with mad-cow disease.

2. First phase: On April 30, 2008 the Veterinarian Association for Public Health (VAPH)[12] issued a warning about the BSE risks in U.S. beef.

3. First to second phase: The Korean Medical Association (KMA)[13] reversed its position from emphasizing the risks of BSE in U.S. beef on April 22, 2008 to stating that the risk was negligible on May 7, 2008.

4. Second phase: The Korean Federation of Science and Technology Societies (KOFST)[14] adopted the same position as the KMA on May 7, 2008.

5. Third phase: On May 15, 2008, the magazine *Science Times* provided a similar account to that of the KMA and the KFSTS (*Science Times*, May 15, 2008).[15]

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11. The World Organisation for Animal Health is an international organization whose mission is to: (1) ensure transparency in the status of global animal disease ; (2) collect, analyse, and disseminate veterinary scientific information; (3) encourage international solidarity in the control of animal diseases; (4) safeguard world trade by publishing health standards for international trade in animals and animal products; (5) improve the legal framework and resources of national veterinary services; and (6) provide a better safety guarantee for food of animal origin and promote animal welfare through a science-based approach (http://www.oie.int/about-us/our-missions/).

12. The VAPH was established by Korean veterinary professionals in 2006. Since its inception, this organization has stressed the danger of U.S. beef imports. The association attempted to disseminate information about the risk of BSE through its website (http://www.vetnews.or.kr/), which is no longer in operation. This organization is known for its progressive political orientation.

13. As a non-profit organization, the KMA not only represents the interests of medical doctors in Korea, but also contributes to public health by developing and disseminating medical care. This organization is known for its conservative political orientation.

14. The KOFST is a non-profit organization that represents science and technology bodies in Korea. The mission of the KOFST is to foster and support science and technology societies, to promote and facilitate the participation of scientists and engineers in social development, to enhance public awareness of science and technology, and to contribute to national development by providing independent, objective analysis on issues related to science, technology, and innovation policy. This organization is not only regarded as highly professional, but also recognized as providing factual information based on scientific knowledge.

15. "Gwangubyeong gongpo-ui jinsil" (The Reality of the Fear of Mad-Cow Disease), *Science Times*, May 15, 2008, http://www.sciencetimes.co.kr/article.do?atidx=0000025335.

Second, mass media:

1. Pre-phase: There was some reporting of the dangers of mad-cow disease by large media organizations (e.g., KBS, October 29, 2006; *Chosun Ilbo*, October 30, 2006).[16]

2. First phase: The MBC TV program, PD Notebook, emphasized the potential health risks on April 29, 2008. This had a significant impact in terms of media and public discussions of mad-cow disease.

3. Second phase: Active coverage began in the mass media on April 30, 2008. However, by early May, the tone of newspaper reports had become clearly bifurcated between significant risk and negligible risk.[17]

4. Third phase: The mass media began to warn of the change in the nature of the candlelight protests from health security to anti-government around mid-May.

Third, civil society organizations emphasized public health security and demanded stricter food regulation standards. Right after the first candlelight protest on May 2, 2008, twelve non-profit organizations proposed a nation-wide conference to discuss the issue. By May 8, 2008, a new non-profit organization focusing on the risk of BSE in imported U.S. beef had been created.

Figure 2 summarizes the main external influences on the learning processes of the online communities. Despite announcements from the scientific community and mass media in the first phase, which consistent-

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16. Examples include: a television documentary, "Eolgul eomneun gongpo, gwangubyeong: miguk soegogi bogoseo" (vCJD, Fear without a Face: U.S. Beef Report), KBS, October 29, 2006, http://www.kbs.co.kr/end_program/1tv/sisa/kbsspecial/view/old_vod/1421916_61811.html, and the newspaper coverage which followed, for instance, "KBS seupesyeol 'ingan gwangubyeong' bangsong-e sicheongjadeul chunggyeok" (Citizens Are Shocked by KBS Special 'CJD' Program), *Chosun Ilbo*, October 30, 2006, http://www.chosun.com/national/news/200610/200610300312.html.

17. The interpretation preferred by several conservative newspapers identified a hidden cause of the candlelight protests. They claimed that the risk of mad-cow disease was not the real reason why the candlelight protests happened, but rather that rebellious organizations wanted to utilize the U.S. beef import issue as an instrument to mobilize citizens for anti-U.S. protests.

ly emphasized the potential BSE risk of U.S. beef, most citizens showed little interest in learning about the issue until the government decided to resume imports.

	Pre-phase	1st phase	2nd phase	3rd phase
Government	Possible risk	NA: No formal announce-ment	No risk: One-way dissemination of information	National Assembly hearings and apology to the public
Scientific community	Risk exists	Risk exists	Reversal from risk to negligible risk	Negligible risk
Mass media	Risk exists	Risk exists	Bifurcation: significant risk and negligible risk	Shifted to discussion of anti-government

Figure 2. Influence of Sociocultural Factors on Online Learning

Following media reports of the lifting of the ban and the potential risks involved, particularly *PD Notebook* which aired on April 29, 2008, but the government did not release further statements. This contrasted starkly with the flurry of information which was rapidly diffused online and via the mass media, causing large sections of the public to become frustrated with the lack of government response. The situation was compounded by the polarization of mass media reports, which did not meet public expectations of scientific news coverage (Dake 1992).

Comparison of Learning Patterns

Descriptive Analysis

Table 2 contains the descriptive statistics for the three modes of interactions by the three online communities.

Table 2. Descriptive Statistics for the Three Online Communities'
Interaction Models

		N (date)	Minimum	Maximum	Mean	SD
82 Cook	No. of posts	39	1	133	37.33	32.17
	No. of views	39	573	102,238	33,574.08	26,220.86
	No. of replies	39	4	589	235.64	168.35
Bizarre or Truth	No. of posts	39	1	29	8.68	7.947
	No. of views	39	315	31,323	7,376.10	7,829.73
	No. of replies	39	1	322	94.00	88.62
Agora	No. of posts	39	1	48	16.95	11.97
	No. of views	39	10,889	363,629	80,189.18	76,125.96
	No. of replies	39	89	5,004	1,009.54	989.96
News	No. of news	39	9	1286	352.74	334.69
Three group total	No. of posts	117	1	133	21.89	24.02
	No. of views	117	315	363,629	42,802.07	56,512.00
	No. of replies	117	1	5,004	472.26	722.85

Adolescents initially paid little attention to the issue as it lay outside their usual range of interests. Online interactions of adolescents during the first and third phases were minimal, and there was no post with more than 100 views for eight of the days within the time range of the study, a pattern that is visible in Figure 3. However, after they recognized that the issue could potentially have a significant impact on their health, they began to seek out factual information about BSE and its possible effects on their well-being. When the rhetoric shifted from health security to anti-government in the third phase, they rapidly lost interest because the issue once again became less immediately relevant to them as individuals. Thus, the number of interactions dramatically declined in the third phase.

Due to bearing the primary responsibility for buying and preparing food for their families, housewives are relatively alert to any potential
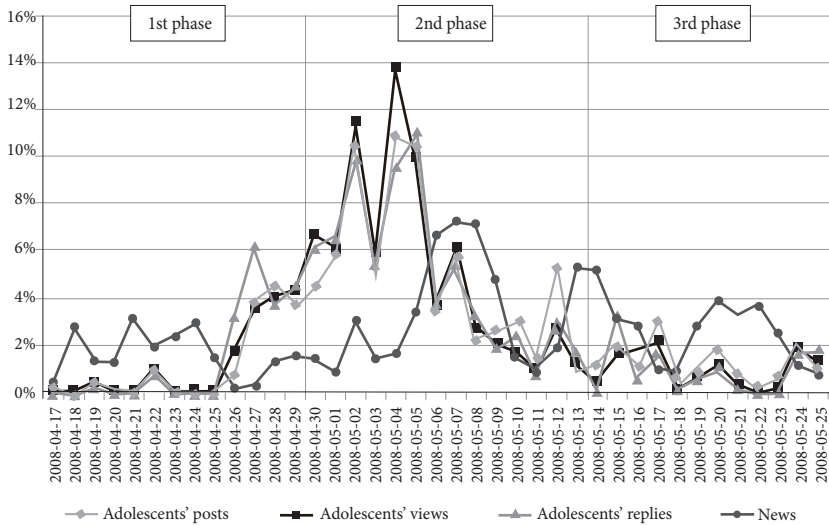
Figure 3. Changes in Online Interaction Patterns: Adolescents

health threats. Thus, faced with the potential risk of BSE, they rapidly sought out information and exchanged opinions within their community. The relatively high number of online interactions in the first phase can be seen in Figure 4. Interactions then peaked at the time of the candlelight vigils. Unlike adolescents, housewives maintained their interest in the issue, and their actions can be seen as directly correlated to the rate of news reports. As such, the interactions of housewives in the third phase were relatively high in comparison to adolescents.

Unlike the other two groups, for the politically active, the main interest in the issue was always from a political perspective and they were not as concerned with the health security perspective as the adolescents or housewives. There was a sudden increase in interactions, however, when the issue shifted into more explicitly political terrain, and community members shared what were, for the most part, anti-government sentiments. Government communications had the biggest influence on their patterns of interactions, followed by reports from the mass media. Unlike the other two groups, the number of views and replies dramatically increased in the third
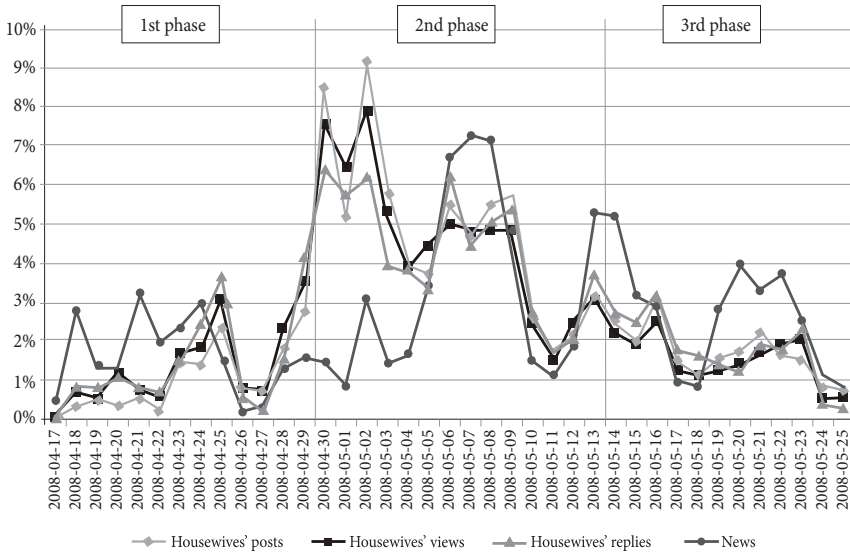
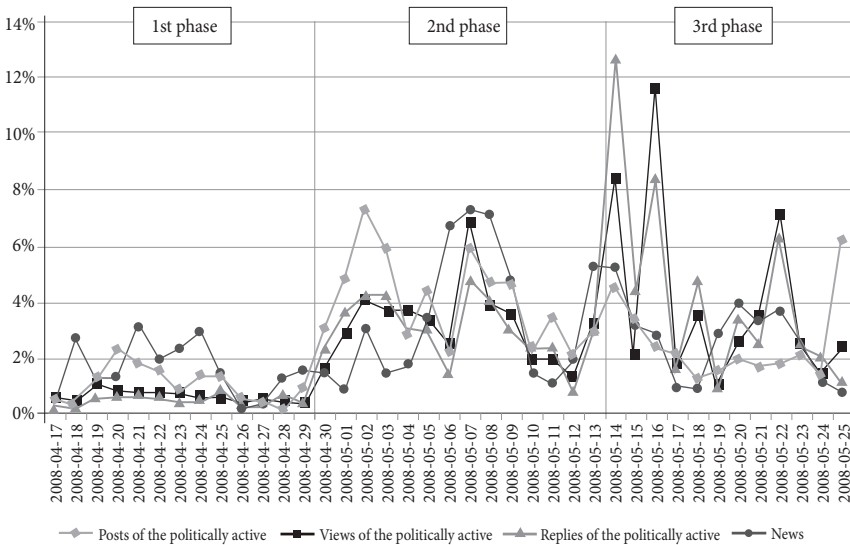Figure 4. Changes in Online Interaction Patterns: Housewives

Figure 5. Changes in Online Interaction Patterns: The Politically Active

phase, as shown in Figure 5. Indeed, it was in the third phase that the social construction of the mad-cow issue among the politically active became an anti-government issue.

Relationships between Sociocultural Influences and Online Interactions

In order to explicate the relationships between sociocultural influences and online interactions, correlations between the three modes of online communication were tested. Table 3 presents the correlations of the three modes of interaction within each group, as well as with news reports. While, for housewives and adolescents, there were strong correlations between intragroup posts, views, and replies, there was much less correlation between intragroup interactions for the politically active. Indeed, for the latter group, only the correlation between views and replies was high. In other words, the politically active were more selective in what they viewed, but once they viewed posts, they were almost as likely to reply as

Table 3. Correlations of Three Types of Online Interaction within Groups

(by date, n=39)

		No. of news	No. of posts	No. of views
Housewives	No. of posts (sig.)	.568[a](.000)		
	No. of views (sig.)	.507[a](.001)	.973[a](.000)	
	No. of replies (sig.)	.587[a](.000)	.932[a](.000)	.954[a](.000)
Adolescent	No. of posts (sig.)	.185(.318)		
	No. of views (sig.)	.157(.399)	.964[a](.000)	
	No. of replies (sig.)	.127(.497)	.938[a](.000)	.950[a](.000)
Politically active	No. of posts (sig.)	.572[a](.000)		
	No. of views (sig.)	.598[a](.000)	.483[a](.002)	
	No. of replies (sig.)	.531[a](.000)	.489[a](.002)	.896[a](.000)

[a]Correlation is significant at the 0.01 level (2-tailed).

the other groups.

Table 3 also highlights how, for housewives and the politically active, the three modes of interaction were moderately correlated with the release of news reports. For adolescents, however, online interactions were only weakly correlated with news reports. When considered along with the strong correlations for adolescent intragroup communications, this indicates that the adolescent community was relatively closed to external information, and their online learning was, for the most part, limited to intragroup information.

Correlations of the three interaction modes between groups were also tested. As highlighted in Table 4, correlations of posts between the three groups were moderately strong. Still, while changes in the number of views follow a similar pattern for both adolescents and housewives ($r = .691$), the viewing patterns of the politically active were only weakly correlated with the other two groups ($r = .298$ and $.047$, respectively). In addition, the replying patterns of the politically active also differed from the other two online communities, particularly in the case of adolescents. Although not

Table 4. Correlations of Three Types of Online Interaction between Groups

(by date, n=39)

		Politically active	Housewives
Post	Housewives (sig.)	.676[b](.000)	
	Adolescents (sig.)	.425[a](.017)	.592[b](.000)
		Housewives	Adolescents
Views	Adolescents (sig.)	.691[b](.000)	
	Politically active (sig.)	.298(.065)	.047(.801)
		Housewives	Adolescents
Replies	Adolescents (sig.)	.519[b](.003)	
	Politically active (sig.)	.325[a](.044)	-.071(.703)

[a]Correlation is significant at the 0.05 level (2-tailed).
[b]Correlation is significant at the 0.01 level (2-tailed).

statistically significant, replies were negatively correlated between the politically active and adolescents.

Differences in Learning Patterns?

In order to compare the degree of emphasis on factual and interpretive learning between the three groups, a t-test was conducted. Table 5 summarizes the t-test results for the number of views and replies to factual versus interpretive posts. Adolescents replied more to factual than interpretive information in the second phase. Despite becoming more aware of the urgency of the situation at the end of the first phase, they were more concerned with understanding the issue through factual information. In contrast, the other two groups were more oriented toward socially constructing the issue through interpretation. Nevertheless, there are differ-

Table 5. Summary of T-Test Results for Views and Replies to Factual and Interpretive Posts

		1st phase (April 17 to May 1, 15 days)	2nd phase (May 2 to 2, 11 days)	3rd phase (May 13 to 25, 13 days)
Adolescent	Views	-	-	-
	Replies	-	Factual > interpretive[a]	-
Housewives	Views	-	Interpretive > factual[b]	Interpretive > factual[b]
	Replies	Interpretive > factual[a]	Interpretive > factual[c]	-
Politically active	Views	-	-	Interpretive > factual[c]
	Replies	-	-	Interpretive > factual[a]

Note: Refer to Appendices 2, 3, and 4 for the detailed analysis results. "-" indicates no statistically significant difference.

[a]Significant at 0.05 level; [b]significant at 0.01 level; [c]significant at 0.1 level.

ences in the way that housewives and the politically active learned by interpretation. Housewives maintained their preference for responding to interpretive posts across all three time phases and this tendency peaked in the phase following the first candlelight protests. The process of interpretive learning supported the housewives' construction of the decision to resume U.S. beef imports as a health security problem from the beginning, a position which was reinforced in subsequent phases.

In contrast, for the politically active, differences in views and replies to factual and interpretive posts were statistically significant only in the third phase. There was no real difference in the first two phases when the issue was constructed as public health-related. Yet, with the release of government statements that did not meet the approval of community members, there was a rapid increase in the volume of online exchanges (Fig. 4) and a shift in the construction of the issue, which came to be seen primarily in anti-government terms. In short, the politically active selectively focused on posts with explicitly political interpretations of the issue while adolescents and housewives read and replied to almost every post.

Social Constructions among the Three Online Communities

Table 6 outlines the differences in social constructions between the three online communities, as well as the government. Adolescents and housewives defined the issue as a health security problem and had a sense of urgency because they were concerned that they themselves (in the case of adolescents) or their families (in the case of housewives) could be victims of mad-cow disease. The politically active also recognized the importance of the issue as health security, but they did not possess the same sense of urgency as the other two groups, as seen in their selective viewing of posts. In contrast to the other two groups, it was the government-issued communications that triggered the interest of the politically active and ultimately led to the shift in the social constructions of the issue. As such, among the external variables, government communication was the most influential factor on the social construction of knowledge in this case.

The analysis results reveal that relatively high intragroup interactions coupled with less intergroup interactions led to intragroup social constructions. This is particularly conspicuous in the adolescent group, as seen in Table 3. While their intragroup interactions were highly correlated, there was no correlation with mass media reports. In the context of comparing the three types of online interaction, the behavior of housewives followed a pattern similar to that of adolescents, but there was much less correlation between the politically active and the other two groups, especially in terms

Table 6. A Comparison of Social Constructions Relating to U.S. Beef Imports

	Adolescents	Housewives	Politically Active	Government
Main concerns on U.S. beef imports	Personal health[a]	Family health[a]	Korean economy and public health	Improvement of international trade/national wealth
Impact of sociocultural influences	Not sensitively affected weak correlation with news reports, with more importance given to intragroup interactions	Sensitively affected resulted in reinforcement of beliefs	Very sensitively affected, especially by government resulted in a shift in the social construction	-
Characteristics of learning process	Emphasis on factual information	Emphasis on interpretation	Emphasis on interpretation	-
	⇩	⇩	⇩	⇩
Social construction of U.S. beef imports	Health risk (at the individual level)	Health risk (at the group level)	From health risk (at the group level) to anti-government	-

[a]Expanded to include public health security beginning in the second phase.

of views and replies (Table 4). This can be explained by the lower levels of intragroup interactions by the politically active.

The general lack of intergroup interaction is significant, as it could have led to shifts in the social constructions developed by the communities, as well as to a deeper understanding of the issue. As Deborah Stone (1997) notes, knowledge-intensive activities such as policy-making (or collective action) are constant discursive struggles over the intersubjective interpretation of common experiences, the conceptual framing of problems, and the definitions that guide the ways people create the shared meaning that motivates them to act. This is especially true when uncertainty prevails (Stone 1997). For effective argumentation, it is necessary to achieve both the participation of all concerned and an atmosphere conducive to free exchange of ideas.

One reason for the lack of interaction between the groups may be the uncertainty generated by the sociopolitical situation. First of all, the government, which is responsible for providing factual information, failed to effectively communicate with the Korean public. In addition, scientific communities not only provided information that was incongruous with that of the government, but also changed the message to the public (from significant risk to negligible risk). Faced with this complex situation, it would seem that the members in each community placed more trust in the people who were most like themselves (i.e., their own online community members). Such a process reinforces particular interpretations that are most relevant to the community members.

Although uncertainty is a factor that led to diverse interpretations of the issue at hand, it is also one of the reasons why there is a need for continued public discussion. Whether or not to permit imports of U.S. beef is a trans-science[18] issue in the sense that science cannot prove that U.S. beef is completely free of risk (Weinberg 1972). Whilst there is still an important role for science, the government is also required to make ethical decisions about what level of risk is acceptable. Also, despite their general lack

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18. Weinberg (1972) uses the term "trans-science" to describe questions which, despite using the language of science and concerning facts, are unanswerable by science.

of expertise, the public may be potentially affected and therefore have a right to be heard. As such, there is a need for public dialogue, so that citizens can contribute to the debate alongside politicians and scientists.

For the public to be properly heard, however, it is important to go beyond the fragments of divergent subjective interpretations (Hong 2010). Lee and Jung (2009) identified the need for bulletin boards to contain scientific facts and information, yet any online public sphere would also need to allow for the discussion of subjective interpretations, in order to more fully understand the issues involved and their impact on various aspects of society. Unfortunately, there was no online arena that was widely used for this purpose at the time of the U.S. beef crisis. The creation and maintenance of a public sphere may be problematic, though, as the creation of inclusive arenas is no easy task, and public spheres have been criticized for their exclusion of women and the lower social strata (Fraser 1990). Members of the communities discussed here would be likely to face obstacles to participation in the public sphere, due to their age, gender, or dissenting views. One way to improve inclusivity is through unbracketing inequalities. The reality is that we do not live in an equal society, and therefore explicit discussion of identity and positionality is necessary if we want to understand the reasons for alternative views.

Conclusion

This case study has contributed to the literature on the social construction of knowledge and social learning by highlighting how the learning that took place in each online community involved the filtering of sociopolitical influences through group values, different degrees of emphasis on subjective interpretations, and the search for factual information to support these interpretations. Despite the existence of differences between the three groups, they all relied somewhat on the social constructivist process that is proposed in this study. Whereas housewives and the politically active focused on exchanging interpretations, the adolescent group searched for more factual information. These differences may stem from their

sociocultural backgrounds and concerns, yet they all compared and interpreted information in order to construct their social and political opinions. Members in each of the communities sought opportunities to test their understanding and compare it with others to gain confidence in the knowledge they constructed.

The social constructivist learning model utilized in this study supports the argumentative nature of knowledge building. The case study also lends weight to the lessons from other researchers about the social construction of knowledge and the need for citizen participation in public policy-making (Dake 1992; Kenny 1993). The social constructivist framework allows us to understand the complexity of the issue and why such a range of perspectives were generated within such a short time period. Furthermore, using a combination of qualitative and quantitative methods also allows us to measure both the number and nature of responses in order to gain a fuller understanding of people's learning patterns and what influences them.

However, there are also limitations to this study. In particular, there may be limits to the extent that the findings from the three online communities can be generalized. Other communities may have displayed different learning patterns and the learning patterns in the same three communities may differ in regard to other social issues. Specific learning patterns may vary, but this study has shown that, generally speaking, in the absence of intergroup interaction and two-way communication with the government, it may be difficult to build social consensus in regard to complex social issues.

One of the reasons why the findings of this study are significant is that the issue may possibly reoccur. Indeed, a report by the U.S. Congressional Research Service recommends expansion of the current agreement between the two countries to include cattle aged over thirty months or the agreement of triggers to a full opening of the Korean market (Jurenas and Manyin 2010). Suggested triggers include an absence of mad-cow cases in the United States for a specified time period such as three, five, or ten years, or U.S. beef's achievement of a specified share of the Korean market. The same problems may not arise even if the situation does reoccur,

yet it is still important to learn in order to avoid the kind of situation that occurred in 2008, which appeared to benefit no one.

This study highlights the need for a democratic online public sphere where those looking for information can check their interpretations with others who are similarly curious. In particular, it is important that this sphere is inclusive and allows the free discussion of ideas. Through this kind of discursive struggle, we may be able to deepen our knowledge about complex issues and create a forum where the voices of the public can be heard. Although it is unlikely that everybody will agree with each other, such a forum would at the very least provide an opportunity to communicate, and therefore potentially help to avoid conflicts arising from divergent understandings of the same issue.

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REFERENCES

Ausubel, David P., Joseph D. Novak, and Helen Hanesian. 1968. *Educational Psychology: A Cognitive View*. New York: Holt, Rinehart and Winston.

Axelrod, Robert, and Michael D. Cohen. 1999. *Harnessing Complexity: Organizational Implications of a Scientific Frontier.* New York: Free Press.

Bateson, Gregory. 1955. "A Theory of Play and Fantasy." *Psychiatric Research Reports* 2: 39-51.

Burmeister, Larry L., and Yong-Ju Choi. 2012. "Food Sovereignty Movement Activism in South Korea: National Policy Impacts?" *Agriculture and Human Values* 29.2: 247-258.

Burr, Vivien. 1995. *An Introduction to Social Constructionism.* London: Routledge.

Cho, Kisuk. 2009. "2008 Chotbul jiphoe chamyeoja-ui inyeomjeok jeonghyang: chinbuk banmi jusapa hogeun ban sinjayujuui" (The Ideological Orientation of 2008 Candlelight Vigil Participants: Anti-American, Pro-North Korean Left, or Anti-Neoliberalism). *Hanguk jeongchi hakhoebo* (Korean Political Science Review) 43.3: 125-148.

Chung, Ji Bum. 2009. "Social Amplification of Risk: Learning Lessons from the U.S. Beef Crisis in Korea." Paper presented at the Social Contexts and Responses to Risk Conference, Beijing, April 15-17.

Dake, Karl. 1992. "Myths of Nature: Culture and the Social Construction of Risk."

*Journal of Social Issue*s 48.4: 21-37.

Eom, Young-Sook. 2009. "Miguksan soegogi suip jaegae balpyo-e ttareun sobija husaeng sonsil cheukjeong" (Measuring Consumers' Welfare Losses due to Announcement of Resuming U.S. Beef Imports). *Jawon hwangyeong gyeong-je yeongu* (Environmental and Resource Economics Review) 18.3: 495-521.

Fraser, Nancy. 1990. "Rethinking the Public Sphere: A Contribution to the Critique of Actually Existing Democracy." *Social Text* 25/26: 56-80.

Gamson, William A. 1992. *Talking Politics*. New York: Cambridge University Press.

Goffman, Erving. 1974. *Frame Analysis: An Essay on the Organization of Experience.* London: Harper and Row.

Hong, Sung-gi. 2010. "A Look at the Changes in the Debate Structure in Korea through the Candlelight Vigils." *Korea Journal* 50.3: 100-127.

Isenberg, Daniel J. 1986. "Group Polarization: A Critical Review and Meta-Analysis." *Journal of Personality and Social Psychology* 50.6: 1141-1151.

Jurenas, Remy, and Mark E. Manyin. 2010. "U.S.-South Korea Beef Dispute: Issues and Status." Congresstional Research Service (CRS) Report for Congress. Washington, DC.

Kelleher, Colm A. 2004. *Brain Trust: The Hidden Connection between Mad Cow and Misdiagnosed Alzheimer's Disease.* New York: Pocket Books.

Kenny, Christopher. 1993. "The Microenvironment of Political Participation." *American Politics Quarterly* 21.2: 223-238.

Kim, Chul-kyoo, and Hae-Jin Lee. 2010. "Teenage Participants of the 2008 Candlelight Vigil: Their Social Characteristics and Changes in Political Views." *Korea Journal* 50.3: 14-37.

Kim, Young Ok. 2010. "Understanding the Candlelight Demonstration and Women's Political Subjectivity through the Perspective of Changing Publicity." *Korea Journal* 50.3: 38-70.

Kitchen, David, and Douglas McDougall. 1999. "Collaborative Learning on the Internet." *Journal of Educational Technology Systems* 27.3: 245-258.

Knoll, Kathleen, and Sirkka Jarvenpaa. 1995. "Learning to Work in Global Virtual Teams." Paper presented at the 28th Hawaii International Conference of Systems Sciences, Maui, Hawaii, January 3-6.

Kolb, David A., and Ronald E. Fry. 1975. "Toward an Applied Theory of Experiential Learning." In *Theories of Group Processes*, edited by Cary L. Cooper, 33-58. London: John Wiley.

König, Thomas. 2004. "CAQDAS in der Frame Analysis." In *Qualitative Datenanalyse: computergestützt*, edited by Udo Kuckartz, Heiko Grunenberg, and

Andreas Lauterbach, 89-96. Wiesbaden: VdS.

Laister, Johann, and Sandra Kober. 2002. "Social Aspects of Collaborative Learning in Virtual Learning Environments." Paper presented at the 2002 Networked Learning Conference, Sheffield, March 26-28.

Lee, Chang-ho, and Jung Eui-cheol. 2009. "Gongnonjang-euroseoui inteonet kafe gesipan-ui ganeungseong-gwa hangye: jjukbbang keulleop-gwa yeopgi hogeun jinsil-eul jungsim-euro" (The Possibilities and Limitations of Internet Cafe Bulletin Boards as Public Spheres: Focusing on the Zzugbang Club and the Bizarre or Truth). *Eollon gwahak yeongu* (Journal of Communication Science) 9.3: 388-424.

Lévy, Pierre. 1994. *L'intelligence collective: pour une anthropologie du cyberspace*. Paris: La Découverte.

Miranda, Shaila M., and Carol S. Saunders. 2003. "The Social Construction of Meaning: An Alternative Perspective on Information Sharing." *Information Systems Research* 14.1: 87-107.

Petty, Richard E., and John T. Cacioppo. 1981. "Issue Involvement as a Moderator of the Effects on Attitude of Advertising Content and Context." *Advances in Consumer Research* 8: 20-24.

Riegner, Cate. 2007. "Word of Mouth on the Web: The Impact of Web 2.0 on Consumer Purchase Decisions." *Journal of Advertising Research* 47.7: 436-447.

Schifter, Deborah, and Martin A. Simon. 1992. "Assessing Teachers' Development of a Constructivist View of Mathematics Learning." *Teaching and Teacher Education* 8.2: 187-197.

Schutz, Alfred. 1967. *The Phenomenology of the Social World.* Evanston: Northwestern University Press.

Sieck, Winston, and J. Frank Yates. 1997. "Exposition Effects on Decision Making." *Organizational Behavior and Human Decision Processes* 70.3: 207-219.

Stone, Deborah. 1997. *Policy Paradox: The Art of Political Decision Making.* New York and London: W. W. Norton.

Suler, John. 2004. "The Online Disinhibition Effect." *Cyber Psychology and Behavior* 7.3: 321-326.

Webler, Thomas, and Seth Tuler. 2006. "Four Perspectives on Public Participation Process in Environmental Assessment and Decision-making: Combined Results from Ten Case Studies." *Policy Studies Journal* 34.4: 699-722.

Weinberg, Alvin M. 1972. "Science and Trans-Science." *Minerva* 10: 209-222.

Yun, Seongyi, and Woo-Young Chang. 2010. "Political Participation of Teenagers in the Information Era." *Social Science Computer Review* 29.2: 242-249.

Appendix 1. Case Summary in Chronological Order

	Date	External events
Pre-phase	December 2003	A ban was imposed on U.S. beef imports due to the possible risk of BSE.
1st phase	April 18, 2008	The ban on U.S. beef imports was lifted, allowing for imports of both boneless beef and that with bones, including from cattle aged over 30 months, although materials known to risk BSE transmission had to be removed.
	April 19	Internet-based discussion on the safety of U.S. beef began.
	April 22	The KMA announced that U.S. beef carried a BSE risk.
	April 29	Broadcast of the MBC TV show *PD Notebook*, "Is U.S. beef really safe from mad-cow disease?"
	April 30	Active coverage by TV stations and national print media
		The VAPH announced that U.S. beef carried a BSE risk.
		Some celebrities voiced their support for concerned citizens.
2nd phase	May 2	First candlelight protest
		A nationwide conference was proposed by twelve non-profits, including People's Solidarity for Participatory Democracy and Korean Alliance of Progressive Movements.
	May 3	Candlelight protests started to take place on a nationwide basis.
	May 5	First response by government agencies: disclosure of the agreement to resume imports
	May 6	PR by government agencies
		Nationwide conference was held and included around 1,000 civil movement organizations and leaders of the opposition party.
		Press coverage began to polarize between significant risk and negligible risk.
	May 7	National Assembly hearing
		The KMA revised its position: the potential risk is negligible.
		The KFSTS also stated that any potential risk is negligible.
	May 8	TV debate on the Korea-U.S. FTA A non-profit organization focused on the potential BSE risk in U.S. beef was created.
3rd phase	May 14	National Assembly hearing on the FTA
	May 15	The *Science Times* reported that while there may be a risk of BSE, it is difficult to identify a direct connection to the disease.
	May 19	Renegotiation of beef imports
	May 22	Policy announcement by the president and apology to the public

Appendix 2. Adolescents: T-Test of Factual vs. Interpretive Posts

		Posts made of				t	Sig.
		Factual information		Subjective interpretation			
		N^b	Mean	N^b	Mean		
1st phase	No. of views	35	922.143	19	1,064.363	-.738	.464
	No. of replies		13.457		12.421	.294	.770
2nd phase	No. of views	76	900.355	75	796.440	1.231	.220
	No. of replies[a]		12.132		8.653	2.834	.005
3rd phase	No. of views	19	612.474	18	714.989	-.824	.416
	No. of replies		9.474		9.667	-.049	.961

[a] Significant at 0.05 level; [b] significant at 0.01 level.

Appendix 3. Housewives: T-Test of Factual vs. Interpretive Posts

		Posts made of				t	Sig.
		Factual information		Subjective interpretation			
		N	Mean	N	Mean		
1st phase	No. of views	148	1,017.05	192	1,162.06	-1.270	.217
	No. of replies[a]		6.39		8.22	-2.025	.044
2nd phase	No. of views[b]	363	754.51	315	955.10	-2.998	.003
	No. of replies[a]		4.93		6.45	-2.214	.027
3rd phase	No. of views[a]	152	736.30	143	975.02	-2.559	.011
	No. of replies		6.53		7.27	-.923	.357

[a] Significant at 0.05 level; [b] significant at 0.01 level.

Appendix 4. The Politically Active: T-Test of Factual vs. Interpretive Posts

		Posts made of				t	Sig.
		Factual information		Subjective interpretation			
		N	Mean	N	Mean		
1st phase	No. of views	32	2,556.28	64	2,706.90	-.237	.813
	No. of replies		41.63		34.39	.743	.459
2nd phase	No. of views	125	4,274.41	163	3,431.32	1.441	.151
	No. of replies		49.44		47.98	.212	.832
3rd phase	No. of views[b]	101	4,933.66	104	8,980.70	-1.652	.100
	No. of replies[a]		65.03		115.12	-2.083	.039

[a]Significant at 0.05 level; [b]significant at 0.1 level.