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Intention to comply with food safety messages in a crisis as a function of message source and message reliability

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To the Graduate Council:

I am submitting herewith a dissertation written by Karen June Freberg entitled "Intention to comply with food safety messages in a crisis as a function of message source and message reliability." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Communication and Information.

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INTENTION TO COMPLY WITH FOOD SAFETY MESSAGES IN A CRISIS AS A FUNCTION OF MESSAGE SOURCE AND MESSAGE RELIABILITY

A Dissertation Presented for
the Doctor of Philosophy Degree
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DEDICATION

I would like to thank my family for their continued support and encouragement throughout these past four years. Obtaining a Ph.D. is one of my life long dreams. I would like to dedicate this dissertation to my father (Roger), mother (Laura) and two sisters (Kristin and Karla).

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ABSTRACT

A key role of public relations is to manage crises, unexpected yet unpredictable events that cause emotional and physical harm (Coombs, 2007). Among the challenges in handling a crisis effectively is dealing with the various media in which information is presented. Because the use of social media in a crisis is a relatively new phenomenon, further understanding of the challenges and opportunities of these media is warranted. Part of meeting this challenge requires precise modeling of consumer responses to safety messages. To remedy gaps in our understanding of social media and food safety crisis communications, consumer intent to comply with a food safety message was evaluated within the framework of the Theory of Planned Behavior (TPB; Ajzen, 1991). Superimposed on the TPB intention model were possible moderator variables of message source (professional versus user-generated) and message reliability (confirmed versus unconfirmed information). Three focus groups provided background for the construction of a research instrument according to guidelines specified by Francis, Eccles, Johnston, Walker, Foy, et al. (2004). A 2x2 experimental design with four scenarios (message source x reliability), and realism checks of the scenarios were conducted. A pilot test with 130 undergraduate university students preceded administration of the instrument to a representative U.S. consumer panel of 400 participants. Results indicated that intent to comply with a food safety message was higher in response to messages in professional sources than in user-generated sources, but that the majority of this effect could be explained by participant age, which in turn predicted use of social media. Message

reliability did not affect intent to comply—confirmed and unconfirmed messages had similar effects on intent to comply. All aspects of the TPB were confirmed by the current results with the exception of perceived behavioral control, which was so consistently strong that it was unable to predict variations in intent to comply with a food safety message. Consequently, the current data support the Theory of Reasoned Action (TRA; Fishbein & Ajzen, 1975) rather than the TPB. Implications of the results for public relations and crisis communications, limitations of the study, and recommendations for future research are discussed.

TABLE OF CONTENTS

List of Tables

List of Figures

CHAPTER 1: INTRODUCTION

PROBLEM STATEMENT

Public relations has been defined as "the planned effort to influence opinion through socially responsible and acceptable performance based on mutually satisfactory two-way communication" (Cutlip & Center, 1971, p.4). In particular, two-way communication about a crisis requires especially well-informed planning if the desired influence on public opinion and public behavior is to be achieved. One of the many charges for public relations professionals serving in a crisis communications role is to maintain public safety by communicating safety messages. Ideal safety messages are communicated quickly and effectively in a dialogic manner that promotes understanding and comprehension of the information being presented, and includes clear action steps to reduce uncertainty and promote appropriate health and safety behavior related to the crisis situation. Meeting this challenge requires precise modeling of consumer responses to safety messages.

Crises have been defined as events that either cause harm or the potential for harm to an individual or organization. Whether the harm produces physical, emotional, or environmental damage to individuals and communities involved in the crisis, or damage to the corporate reputation or financial standing of an organization, the range of harm is different in each unique situation. Full understanding of a crisis encompasses not only the actual precipitating event, but also the process or time leading from a precipitating event, including the subsequent perceptions of the crisis by various stakeholders. The crisis communications field within public relations has grown over the last thirty years to

meet demands of private and public organizations desiring better practices for engaging in dialogue with risk bearers, communicating crisis messages and planning for potential crises (Benoit, 1997; Coombs, 1995, 1998, 1999, 2002, 2004, 2006, 2007a, 2007b, 2009; Coombs & Holladay, 1996; Heath, 2002).

A discussion of best practices for communicating effective crisis messages includes a discussion of the medium used to communicate information. Whether information is presented and discussed through a press conference, a written press release, or a Twitter update, the way in which the information regarding a crisis is presented is influenced by the medium through which it is transmitted. One of the emerging media channels for crisis information is social media, which combine "a wide range of online, word-of-mouth forums including blogs, company sponsored discussion boards and chat rooms, consumer-to-consumer e-mail, consumer product or service ratings websites and forums, Internet discussion boards and forums, microblogs" (Mangold & Faulds, 2009, p.358).

Although some crisis communications and public relations message strategies and practices used in traditional media (television, radio, print) remain relevant in social media, the emerging technologies raise new dynamics and issues for professionals to adapt to. For example, compared to having a designated spokesperson conveying key points about a crisis, new technologies allow any user to generate messages and share interpretations about a crisis situation with other publics actively engaged online. Control over messages and the power to influence responses are not restricted to official spokespersons. Crisis communicators and researchers have a growing need to better

understand how those messages are being disseminated through new forms of technology, and how they are perceived, processed, and reconstructed by stakeholders.

The use of non-traditional, social media communication channels also raises the possibility that unconfirmed, word-of-mouth information can reach large global audiences virally and instantaneously. Researchers and crisis communication professionals need to understand the potential for user-generated and unconfirmed information to influence audience intentions to comply with a specific message.

The ultimate goal of many crisis communication messages is to engage audiences through dialogue to encourage compliance with health and safety recommendations based on an understanding on how a crisis is perceived. A valuable theoretical basis for predicting intention to comply with a safety recommendation is provided by the Theory of Planned Behavior (TPB; Ajzen, 1985, 1991). Superimposed on this intention model were possible moderator variables of message source (professional versus user-generated) and message reliability (confirmed versus unconfirmed information).

The existing literature in public relations in regards to social media and emerging technologies has focused on how public relations professionals are using social media to communicate messages to their audiences (Wright & Hinson, 2008); however, the current research will provide insight into audience reactions to information and messages presented in social media in a crisis situation.

This research contributes not only to the public relations literature and profession, but also to society. Recognizing the need to adapt and personalize specific messages, whether during a crisis or not, will contribute to more effective messages that will create

dialogue and relationships among impacted stakeholders. Businesses, government organizations, nongovernmental organizations, and public relations practitioners can use this research to implement best practices when communicating during a crisis.

JUSTIFICATION OF DISSERTATION

Even though a large body of research exists on the effects of crisis communication messages (Benoit, 1997; Coombs 2009), the crisis communication literature has focused primarily on communication by word-of-mouth or through traditional media outlets (Coombs, 2007a). There appears to be a gap in the literature regarding any necessary modifications of the best practices for communicating during a crisis through traditional media (television, radio, and print) when messages are conveyed using new media (which can include user-generated content). Most of the literature in public relations and crisis communications has focused on the impact of messages from the organization's point of view; however, the current research addresses the persuasive nature of the messages as transmitted through social media.

Using a classic intention model provided by the TPB as groundwork for assessing receiver responses to safety messages, this dissertation attempted to contribute to an understanding of best practices in crisis communication by exploring the relationships and effects of several key constructs, including user-generated versus professional message sources, confirmed versus unconfirmed information, and the ability to predict of receiver intention to comply with a safety message. The type of crisis explored in this dissertation was food safety, which typically requires prompt dissemination of

information, involves high risk to audiences, and is a common and therefore familiar situation easily visualized by research participants.

RESEARCH QUESTIONS

After reviewing the relevant literature, four research questions were proposed for this dissertation:

RQ1: How is receiver intention to comply with a food safety message influenced by the message source (professional versus user-generated content)?

RQ2: What is the effect of message reliability (unconfirmed or confirmed information) on receiver intention to comply with a food safety message?

RQ3: Does the TPB provide a strong model for predicting intention to comply with a food safety message?

Based on the foundation provided by the TPB a theoretical model, illustrated in Figure 1.1, was constructed for this dissertation with the fundamental concepts involved in the theory (behavioral beliefs, attitudes, normative beliefs, subjective norms, control beliefs, perceived control beliefs, and intent). Additional potentially moderating variables were added to the proposed theoretical model: message source (professional versus user-generated) and message reliability (confirmed versus unconfirmed information). Seven hypotheses were generated relative to this model.

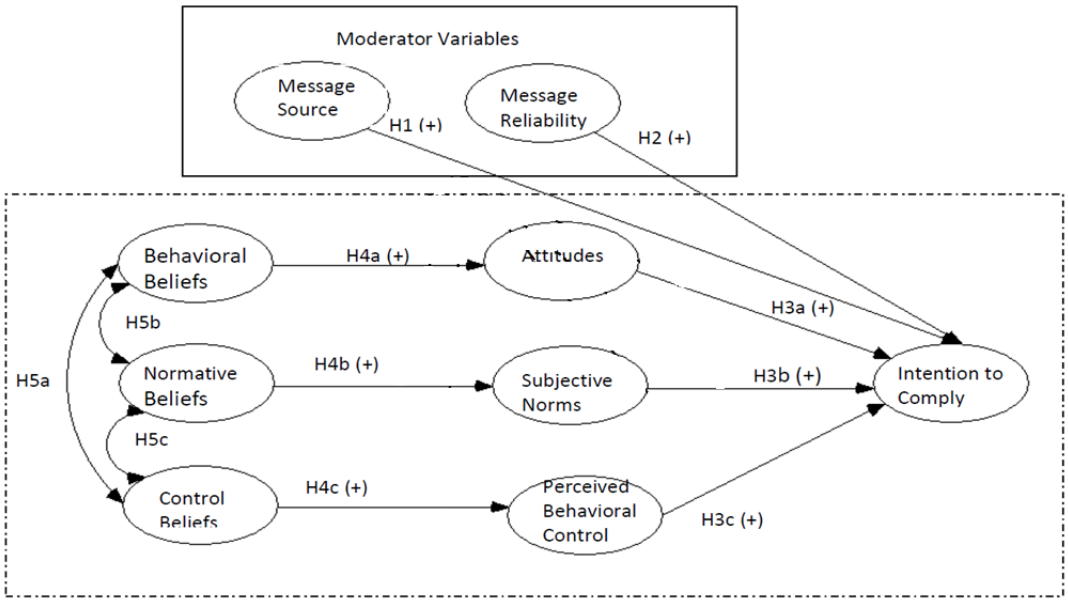


Figure 1.1 Theoretical Model for Dissertation Research

- *Hypothesis 1:* Message source will have a direct, positive effect on intent to comply with a food safety message (RQ1).
- *Hypothesis 2:* Message reliability will have a direct, positive effect on intent to comply with a food safety message (RQ2).
- *Hypothesis 3a:* Attitudes towards food safety will have a direct, positive effect on intent to comply with a food safety message (RQ3).
- *Hypothesis 3b:* Subjective norms about food safety will have a direct, positive effect on intention to comply with a food safety message (RQ3).
- *Hypothesis 3c:* Perceived behavioral control relevant to food safety will have a direct, positive effect on intention to comply with a food safety message (RQ3).
- *Hypothesis 4a:* Behavioral beliefs about food safety will have a direct, positive effect on Attitudes towards food safety (RQ3).
- *Hypothesis 4b:* Normative beliefs about food safety will have a direct, positive effect on subjective norms relevant to food safety (RQ3).

- *Hypothesis 4c:* Control beliefs relevant to food safety will have a direct, positive effect on perceived behavioral control relevant to food safety (RQ3).
- *Hypothesis 5a:* Behavioral beliefs and control beliefs relevant to food safety will be positively correlated (RQ3).
- *Hypothesis 5b:* Behavioral beliefs and normative Beliefs relevant to food safety will be positively correlated (RQ3).
- *Hypothesis 5c:* Normative beliefs and control beliefs relevant to food safety will be positively correlated (RQ3).

STRUCTURE OF DISSERTATION

This dissertation followed a traditional format by providing a brief introduction to the concepts and phenomenon being explored in this study, a thorough discussion of previous literature and the theoretical foundation of the study, a presentation of the methodology of the study, the statistical analysis of the results from the study, and a discussion of the implications of these results for the scientific and professional fields of public relations and crisis communications.

Chapter one provides an overview of the dissertation topic, discussing its contributions to the public relations and crisis communications fields. Chapter two focuses on the theoretical foundations used by the researcher (TPB) and the conceptualization of the constructs being tested in the research study (ex. user-generated content, crisis communication message strategies, and intention). Chapter three covers the specifics of the methodology used in the dissertation, characteristics of the research design, the procedures implemented, participant characteristics, and the operationalizing of relevant constructs.

Chapter four presented the findings and analysis of the focus group, pilot study and realism checks, and experimental phases of the dissertation research. Chapter five contained the discussion and implications of the results for the public relations and crisis communication disciplines, the value of this research to society, limitations of the research study, and suggestions for future research looking at this phenomenon.

CHAPTER 2: LITERATURE REVIEW

The purpose of this literature review is to conceptualize the main constructs examined in the dissertation and in the proposed theoretical model, to review previous studies relevant to this particular phenomenon, to discuss the main theoretical foundations for the proposed theoretical model, and to justify the overall purpose of the research agenda.

Relevant literature is cited from the fields of public relations, crisis communications, social media, and food safety. The Theory of Planned Behavior (TPB) provides the theoretical foundation guiding the construction of the proposed theoretical model. An analysis of the gaps in the existing literature sets the stage for presenting the research objectives of the dissertation.

CRISIS COMMUNICATIONS

The main discipline serving as the umbrella over crisis communications is public relations, which is both an applied and theoretical discipline as well as both a science and an art. Various conceptualizations and definitions have been assigned to the public relations profession. Public relations has been defined as "the planned effort to influence opinion through socially responsible and acceptable performance based on mutually satisfactory two-way communication" (Cutlip & Center, 1971, p. 4). Broom and Dozier (1983) defined public relations as being "concerned with relations with numerous publics, that like consumers, affect organizational survival and growth," (p. 6). Public relations serves a management role by dealing with various publics and audiences as a "liaison" for the organization in question (Dozier & Broom, 1995). Public relations

professionals and managers strive to maintain awareness of their corporate and industrial environments while serving as effective communicators for their primary and secondary stakeholders, media, employees, and other key target audiences (Dozier & Broom, 1995). Public relations combines the "management of communication between an organisation and its publics" (Grunig & Hunt, 1984, p.7-8).

Public relations professionals need to understand the theories that are relevant to public relations, and how theories can inform strategies, tactics, and campaign proposals. Grunig & Grunig (1989) stated that:

> Organizations practice the most appropriate type of public relations for their environments… if we could develop a theory of how organizations do and should adapt to the environment, we could then save them a great deal of the trial and error that would be necessary for them to arrive at the ideal form of public relations on their own (p. 29).

Such a grand theory as described by Grunig and Grunig (1989) can be considered a field's paradigm that forms the backbone of theoretical work in science and philosophy, including public relations and crisis management. Thomas Kuhn (1962) defined a paradigm as "the entire constellation of beliefs, values, techniques, and so on shared by the members of a given community" (p.175). Paradigms provide a community with shared concepts, values, assumptions, and practices.

Public relations features several competing paradigms. Gower (2006) argued that one of the biggest problems facing public relations is the lack of a clear definition of public relations. According to Botan (1993), the paradigm struggle in public relations

can be defined as "a sometimes comfortable, sometimes uncomfortable process of working through differences in assumptive world views, vocabularies, goals, and, maybe most significantly, loyalties" (p. 108). Three dominant paradigms in public relations relevant to the current research questions are excellence theory, the rhetorical perspective, and relationship management. However, for the purpose of this dissertation, the researcher will restrict discussion to the rhetorical and relationship management perspectives, because of their relevance to the persuasive role of crisis messages considered from the risk bearer's perspectives.

Rhetorical and Relationship Management Perspectives of Public Relations

The rhetorical perspective of public relations has had a strong tradition and focus within both practice and in research. Rhetoric emerged in Greece during the time of Aristotle, and has been one of the foundations for shaping Western civilization in terms of promoting independent dialogue among individuals and avoiding the assumption that any idea or perspective is absolute (Heath, 2000). Rhetoric focuses on "the human will and intellectual ability to discover and examine facts, to develop and refine values needed to guide policy, and to forge policy that blends the interests and meets the needs of members of society" (p. 72). Public relations researchers and professionals can incorporate the rhetorical perspective into their practices due to its characteristic of providing the field with a "theory-based systematic way to understand, research, and critique the role of public relations in forming and responding to ideas—competing and convergent shared social realities that can broadly be interpreted as zones of meaning" (Heath, 2006, p. 93-94). Heath (2006) also argued that this theory provides "the means to

define and evaluate the challenges and expectations that are inherent in legitimation" (p. 109-110).

One of the primary elements from the rhetorical perspective that is consistently linked to public relations is persuasion (Coombs, 1993). Persuasion is defined as the influencing of one or more individuals to change attitudes or behaviors as a result of reasonable dialogue. Understanding the persuasive factors and elements in a message can help determine which arguments and facts motivate individuals to understand and act upon the information, which is key in a crisis situation. The rhetorical perspective of public relations views persuasion as an "interactive, dialogic process where points of view are contested in public" (Heath, 1993, p.143-144). The conversation that is engaged among audiences – whether online or not – continues to evolve and escalate to the point where the individual or organization with the strongest argument wins the discussion (Heath, 1993). Exploring how message source and reliability affects the persuasiveness of the message is a key component being reviewed in this dissertation within the context of food safety recommendations.

Existing literature on persuasion has identified various factors that can impact the overall evaluation and persuasive power of a message (Petty & Weneger, 1999). To predict when persuasion is most likely to occur, Richard Petty and John Cacioppo (1981) proposed an Elaboration Likelihood Model (ELM). The ELM was developed in part to explain why simple factors in the persuasion context, such as the credibility of the source, had such different effects in different situations. Petty and Cacioppo observed that "nearly every independent variable studied increased persuasion in some situations, had

no effect in others, and decreased persuasion in still other contexts" (1986, p. 125). In some studies, highly credible speakers were found to be more persuasive than less credible speakers, whereas in others no effect was found.

According to the ELM, people use either a central or peripheral route for processing persuasive messages. When using the central route, an individual evaluates information thoroughly and carefully, and is less likely to be distracted by superficial factors, such as the physical attractiveness of the speaker. When using the peripheral route, however, the individual processes the message in a much more superficial manner, as when we drive past an advertisement on a highway billboard. Under these circumstances, people are more likely to be influenced by superficial characteristics of the speaker and the message.

The amount of elaboration applied to a message is influenced by a person's motivation and ability. When people are highly motivated to take time out of their busy schedules to attend a political meeting because they know and care about relevant issues, they are likely to pay careful attention to and think about the evidence for each persuasive message. But to think about this evidence, they must also know something about the issues. In the absence of motivation or ability (e.g., knowledge), elaboration likelihood will be low and people are likely to travel the peripheral route – that is, they are likely to be influenced by cues like source credibility rather than the quality of the arguments.

People are most likely to travel the central route to persuasion when they are well-educated, analytical, and high in need for cognition (Cacioppo, Petty, & Morris, 1983; Cacioppo, Petty, Feinstein, & Jarvis, 1996). People who are high in need for cognition

enjoy cognitively effortful activities and respond positively to items such as "I would prefer complex to simple problems," or "I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought" (Cacioppo, Petty, & Kao, 1984, p. 307). Even people who are high in cognition will occasionally take the peripheral, rather than central route. If a person lacks knowledge about a topic, does not have the time to think about it, or does not care about the topic, the short-cuts of the peripheral route will be more attractive. In addition, because using the central route requires so many cognitive resources, including attention, people are less likely to process persuasive messages this way when they are distracted by other information or activities.

The understanding provided by the rhetorical perspective of the conditions of persuasion provides significant opportunities for application to compliance with a food safety recommendation. Food is a central part of an individual's life where people have strong senses of control and meaning attributed to the food that they prepare and consume. Adding personal relevance to a topic being communicated will encourage people use their personal experiences and preconceived associations to make their final judgment about the message (Haugtvedt, Liu, & Min, 2008). Individuals who are high in need for cognition will seek out messages and "greater message content" compared to those with low need for cognition, who will be focused primarily on the "source and other factors" involved in the situation (p. 1163). In other words, when it comes to crisis situations, some individuals will want confirmed, detailed information about the situation, while others might be more influenced by peripheral factors such as message

source and how the information is presented. For maximum effect, crisis communicators need to tailor each of their message strategies to the audience's level of knowledge and to the medium being used to disseminate the information.

The other public relations perspective relevant to this dissertation, the relationship management perspective, focuses on the connections or relationships among individuals, organizations, and communities. Relationships range from personal to emotional to cultural, and are as much a feature of online communities as traditional ones. The relationship management perspective of public relations is embedded in a movement that places the organization–stakeholder relationship at the center of the public relations practice (Broom, Casey, & Ritchey, 1997). This perspective holds that relationships are the core, defining aspect of public relations. As a result, bad relationships reflect bad public relations. If an organization breaks the level of trust and expectations of an individual or group for a particular entity, the perception of the audience will become more negative. Relationships are not stable connections and nor are they consistently either positive or negative – they are dynamic, ever-changing, and take time and resources to nurture and invest in for the long-term. The history of a relationship affects how stakeholders interpret current events or interactions – both in online and offline formats.

According to Ledingham (2003), the relationship perspective in public relations "balances the interests of organizations and publics through the management of organization-public relationships" (p. 181). Heath (2001) noted many relationships in which public relations professionals may participate, ranging from financial relationships

(markets) to public relationships (individuals in policy making positions) to community relationships (interacting with those that are impacted by the corporation or a particular issue).

One of the key functions of public relations is to establish strong and long lasting relationships with key stakeholders (Kent, Taylor & White, 2003). Corporations need to invest in stakeholders because these relationships can "lead to valuable, intangible competencies that are important in gaining and maintaining competitive advantage" (Hillman & Keim, 2001, p. 128). Stakeholders want to be integrated as part of a corporation when they believe the organization engages with its audiences proactively and has ethical business practices (Kent, Taylor, & White, 2003).

Understanding the persuasive nature of a message and underlying existing and potential relationships between organizations and stakeholders are two of the main charges for public relations practitioners involved in crisis communications. This dissertation research is focused primarily on the impact of the persuasive nature of a message in motivating audiences to listen to a crisis message and act accordingly, so it would be appropriate to focus on the rhetorical perspective of public relations and its explanations for trust and credibility, and on the relationship perspective due to its ability to explain and predict the importance of relationships among the audiences and the source of information. In particular, this dissertation is focused on the persuasion aspect of the rhetorical perspective and its application to understanding the motivations of receivers responding to a food safety recommendation.

Conceptualization of a Crisis

While there are many positive events and situations that organizations and individuals experience, there are also negatively charged events that distort daily activities and cause financial, emotional, and personal harm to those involved. These situations are conceptualized as crises. Crises come in various forms and can impact an organization or individual at any time. In other words, crises are significant, disruptive events that often feature a rapid onset. An event precipitating a crisis can be described as "big trouble that arises suddenly" (Lerbinger, 1997, p. 6). Pearson and Clair (1998) stated that a crisis usually results from "a low-probability, high-impact event" (p. 60). Fearn-Banks (2001) portrayed a crisis as a "major occurrence with a potentially negative outcome" that "interrupts normal business transactions" (p. 480). Ulmer, Seeger, and Sellnow (2002) described a crisis as "a fundamental threat to the very stability of the system, a questioning of core assumptions and beliefs, and risk to high priority goals, including organizational image, legitimacy, profitability, and ultimately survival" (p. 362).

Although the majority of the crisis communication literature is restricted to negative outcomes (Coombs, 1995, 2007a; Ferns-Banks, 2001), positive effects can also occur when organizations change in response to experiencing a crisis (Penrose, 2000). Adapting business and communications practices to proactively establish key relationships and restore dynamic dialogue between organization and its audiences are just a few positive changes that could emerge from experiencing a crisis. Once the precipitating event occurs, "an event increases in intensity, falls under scrutiny of the

news media or government, interferes with normal business operations, devalues a positive public image, and has an adverse effect on a business's bottom line" (p.156).

One of the methods for determining whether a crisis is based on associations with the specific event or issue is whether or not the event has created a disruption in the daily lives of those impacted by the negatively-charged event. A crisis can be the perception of an event rather than the event itself, which suggests that individual reactions to a perceived crisis can be quite diverse (Penrose, 2000). Several factors that contribute to the overall perception of a crisis situation include the severity and magnitude of the event (Burnett, 1998), perceived control (Burnett, 1998; Coombs & Holladay, 1996), and the likelihood that an event will actually occur (Wrigley, Salmon, & Park, 2003). There many be differences between how one person identifies a crisis compared to another depending on how much involvement and investment that people have with a particular organization, issue, or perceived role that this has on their own well-being and worldview. For example, individuals may have different perceptions of a food crisis. Some individuals have a high level of uncertainty and anxiety over the fear of consuming contaminated food, whereas others may not be as concerned about the issue. Understanding the range of perceptions of a food safety crisis is key to strategically communicating effective messages strategically, persuading those who are actively concerned about issue as well as those who are not as involved.

When faced with a crisis situation, individual perceptions and experiencing pressure from an emotionally charged event can influence how people interpret information and deal with uncertainty. Individuals might feel overconfident and invincible in a crisis situation.

A danger for certain crisis situations arises from the perception of such events as exceptional rather than routine (Roux-Dufort, 2007). This risk is especially apparent when looking at food safety crises. As discussed in a later section on food safety, one of the common perceptions of a food safety crisis is that these are exceptional and rare, rather than consistent crises subject to daily awareness. One of the challenges in these situations is that unless a crisis situation is recognized and identified as one that could be recurring, crisis communicators will not be able to conduct the appropriate preparation in communicating specific messages to those who are impacted by the crisis. Crisis communication professionals need to strategize and prepare for any events that have the potential of occurring (Jacques, 2010). Understanding these crises ahead of time and categorizing them based on certain characteristics (described in more detail below) is essential for successful preparation.

The crisis chosen for exploration in this dissertation is a food safety recall situation. Food safety events fit the traditional conceptualization of a crisis as events that arise suddenly, are perceived as exceptional, and have a significant impact on the daily life of individuals. The perception of a food crisis spans the entirety of the crisis response continuum. On one side, there are those who are actively concerned with and aware of the issues and risks associated with contaminated foods, food bioterrorism, and other food safety crises. On the flip side, other individuals who do not believe that a crisis like this could happen to them personally. This range in perceptions of a food safety crisis emphasizes the need to explore the various elements and factors that contribute to these perceptions and the rationale that each of these groups put towards

categorizing food safety crisis using their respective perceptions. Literature relevant to food safety crises is presented in a later section of this review.

Types of Crises

Crises events occur in various forms and can be categorized into different types, which helps crisis managers select an appropriate course of action. The types of events that can lead to a crisis can be grouped into domains of the physical world, human climate, and management failure (Lerbinger, 1997). Examples of these events include natural disasters, faux pas, terrorism, transgressions, accidents, workplace violence, rumors, malevolence, challenges, technical errors, and human errors (Coombs, 1995, 2007a).

Coombs' (2007b) situational crisis communication theory (SCCT) identified 10 crisis types or frames: natural disaster, rumor, product tampering, workplace violence, challenges, technical error product recall, technical-error accident, human-error product recall, human error accident, and organizational misdeed. Mitroff (1994) combined types of crises into three clusters: (a) victim, (b) accidental, and (c) intentional.

Gundel (2005) categorized crises based on their predictability (likelihood of occurrence) and their susceptibility to influence (how much responder behavior can affect the severity of the situation). Using these criteria, Gundel proposed four different types of crises: conventional crises (predictable and clear understanding of the influence of crisis), unexpected crises (influence or severity of crisis is not known), intractable crises (negatively charged incidents that are not predictable) and fundamental crises (most dangerous since they are not predictable or influenced).

In another type of classification, Mitroff (2004) distinguished between "normal" and "abnormal" accidents. According to this view, "normal accidents represent the unintentional breakdown of complex technical and organizational systems. In contrast, abnormal accidents represent the intentional break up of complex technical, organizational, and social systems" (p. 43-44). Mitroff (2004) observed a rise in abnormal accidents in the contemporary business environment, which is likely to lead to more negative outcomes in crises, as the intentionality of these "accidents" becomes apparent to stakeholders. Many food safety crisis events would typically be considered "normal" or expected events, because the public is aware that food contamination occurs. However, the potential of bioterrorism linked to food would be categorized as "abnormal" based on Mitroff's definition of the different types of crises, as these events represent the intentional disruption of systems designed to deliver safe food to the public.

Effective crisis communication practices recognize that different types of crises could potentially occur at any given point in time, and each has its own challenges and risks for the crisis communication professionals and the organizations they are representing in a time of emergency.

Stages of a Crisis

Crisis management is a process that unwinds over time, not a single entity. Seeger, Sellnow, and Ulmer (1998) provided a classic analysis of three separate phases of crisis communication, each with its own characteristics, requirements, and best practices. The three phases described by these authors are a pre-crisis phase, a crisis response, and a post-crisis phase.

The pre-crisis phase includes efforts to prevent any predictable crises and to prepare for them. The responsibility for preventing crises extends across many domains of an organization. Preparing for crises should include the development of a crisis management plan that is updated at least annually (Coombs, 2007a). A crisis management team should be selected and trained with realistic exercises. Draft crisis management messages and templates, including "dark" websites," should be developed and reviewed by an organization's legal department. These practices have been shown to improve an organization's ability to respond to a crisis (Barton, 2001; Coombs, 2006).

The crisis response phase takes place immediately following the onset of a crisis. This phase includes the organization's initial response, which includes a timely and accurate description of the crisis event. This phase might also include apologies and the offering of services to victims, employees, and others impacted by the crisis (Coombs, 2007b). As the crisis unfolds, an organization might choose to use one or more reputation repair strategies (Benoit, 1995, 1997).

In the third and last phase, the post-crisis phase, the crisis continues to require some attention but the organization is returning to pre-crisis baselines of performance. Methods used to repair the organization's reputation may be continued during this phase, and any promises made by the organization during the crisis response phase must be fulfilled (Coombs, 2007a). Communication to employees, the media, and other publics should be continued as necessary. Finally, Coombs (2006) recommends that organizations use the post-crisis phase as a time to evaluate the overall response and make whatever changes are necessary to the crisis management plan.

Other researchers identify different stages in a crisis cycle. Fink (1986) developed a crisis communication model with four separate stages. The first stage in Fink's model was the promodial stage, which is similar to the pre-crisis stage of Seeger, Sellnow, & Ulmer (1998). Fink's second stage is the acute triggering stage, which is where the crisis actually happens. The main differences between Fink's model and the model proposed by Seeger, Sellnow, and Ulmer lie in his later stages. Fink (1986) splits the post-crisis stage into two parts: the chronic stage, which focuses on what the organization does after the crisis, and the resolution stage, in which the organization regroups and strategizes to avoid this type of crisis again in the future.

Theoretical Foundations of Crisis Communications

Crisis communication refers to the provision of effective, efficient messages to relevant audiences during the course of a crisis process. Reynolds and Seeger (2005) stated that crisis communication "seeks to explain the specific event, identify likely consequences and outcomes, and provide specific harm-reducing information to affected communities in an honest, candid, prompt, accurate, and complete manner" (p. 46). Crisis communication can direct the course of a crisis process in a more positive direction when done well, or in a more negative direction if done poorly.

Handling crises is not a new phenomenon for public relations researchers or professionals. Throughout history, events have shaped the course of public relations and crisis communication research and practice, ranging from oil spills (Exxon Valdez in 1989 and the BP Oil Spill in 2010), corporate crises (Enron in 2001), natural disasters (Southeast Asia Tsunami in 2004) to food safety issues (Peanut Butter Recall of 2009 and

Egg Recall in 2010). Other iconic events that have occurred over the last several years include the Tylenol cyanide capsule crisis in 1982 (Fearn-Banks, 2001) and the Bhopal Chemical Spill in 1984 (Mitroff, Shrivastava, & Udwadia, 1987). Even though these specific crisis events were managed differently, analyses of each event contributed to the overall body of knowledge in the crisis communication discipline.

Crisis communication has evolved over the years, as organizations have recognized the need to be prepared and proactive in a moment of crisis. As crisis communication strategies have changed, so have the efforts of scholars to describe and form theories that lead to best practices. Early efforts to describe the process of crisis communication were contributed by rhetorical scholars in the field of speech communication. Research interests evolved from examining individual apologies and the rhetorical perspective to a more contemporary analysis of organizational rhetoric and apologies (Coombs, 2002).

Extending this early work and discussed earlier in this chapter, Coombs' (2002) SCCT combines corporate apologia, image restoration theory, and attribution theory (Coombs, 2002). The SCCT uses these elements to determine the most appropriate message response to particular types of crises. A particularly useful construct incorporated in the SCCT was attribution theory.

Attribution theory, first introduced to social psychology by Fritz Heider (1958), attempts to explain how people attribute, or assign, causality to internal, personality factors or external, situational factors. Incorporating attributions into the model enhanced its ability to predict how audience perceptions of an organization's role in a crisis will

affect its outcome in terms of reputation and associations. Coombs' model also provides crisis communicators with strategies and responses that focus on changing "perceptions of a crisis or the organization in crisis" (Coombs, 2007a, p. 139).

Attribution theory is relevant to the perception of a food safety crisis, as people will respond differently as they assign "blame" for the crisis. In the 2010 egg recall crisis, for example, images of the dirty egg farms were likely to have had significant impact on the attributions formed by the public. Failure of government regulators to follow up on frequent reports of violations would result in additional attributions of fault. Understanding audience attribution helps the crisis communicator construct more persuasive and effective messages in the effort to motivate audiences to take necessary actions.

The SCCT focuses on ten different response strategies that are divided into four postures: the denial posture, the diminishment posture, the rebuilding posture, and the bolstering posture (Coombs, 2007b). The denial posture, according to Coombs, occurs when a person or organization attempts to avoid a crisis or even deny that one exists. The three response strategies that characterize this posture are attacking the accuser, denial, and scapegoating. The diminishment posture looks at how an organization may try to escape the responsibility for their actions in the crisis. In the rebuilding posture, the organization can admit its role in the crisis and apologize to the various audiences that were affected by it. The last posture response strategy is bolstering, which focuses on key messages that try to persuade audiences that the organization is a good company, but it was a target in some way (Coombs, 2007b).

Another key theoretical perspective in crisis communication, the image restoration theory (IRT; Benoit, 1997), combines several message strategies designed to restore an organization's image or reputation. According to Benoit (1997), five responses that an organization could choose to use in their crisis responses and strategies include: "denial," "evasions of responsibility," "reducing offensiveness of event," "corrective action," and "mortification" (p. 179). Most of these IRT crisis strategies focus on what an organization can do in order to restore their reputation in the minds of the individuals impacted by the crisis or have an invested interest in the organization.

The IRT provides guidance for message strategies in a food safety crisis. Looking at the five strategies specified by the IRT, corrective action is a likely first step. This would entail the provision of concise and specific information about the food related crisis situation, where to go for further information or action steps to take, and what the specific organization is doing to make sure that this crisis situation does not happen again.

Crisis communication message strategies and apologies coexist in most crisis situations. Individuals using apology to respond in these intense periods of times are being proactive by working to "shape attributions of the crisis and/or perceptions of the organization itself" (Coombs, 2004, p. 267). Corporate apologia is another strategy that would be useful in a food crisis. The apology concept can be defined in several ways. According to Hearit (2005, p. 4), an apology is a "broad term to respond to organizational criticism by offering a vigorous and compelling defense," while Weyeneth (2001, p. 32) views an apology more as a "symbolic action." Similar conceptualizations of an apology

are present in two models previously discussed – mortification in Benoit's (1995; 1997) IRT model and Coomb's (2007a) full apology message strategy. Coombs and Holladay (2008) stated some of the most frequent apology message strategies implemented by corporations include providing compensation to the victims and parties involved, expressing sympathy, accepting responsibility, and asking forgiveness.

When reviewing apologies initiated by corporations or other entities, most view apologies as verbal communications from one entity or person to another or to a large group. However, Weyeneth (2001) pointed out that apologies can come in both non-verbal and verbal forms of communications:

> Apologies can be communicated in a wide range of ways, through verbal statements issued publicly, joint diplomatic declarations, legislative resolutions, documents and reports, legal judgments, pardon ceremonies, apology rituals, days of observance, reconciliation walk, monuments and memorials, even names bestowed on the landscape (p. 20).

Apologies can be initiated at various times in the timeline of a crisis and can take different forms. Hearit (1994) identified several apologetic message strategies that can be used, including a persuasive statement (persuade audiences to still perceive the company positively), a statement of regret (express concern and wish that the crisis did not happen), and dissociation (distancing themselves from the situation.)

Overall, these three crisis communication theoretical foundations share one common component: the role of the persuasive statement in the crisis communication

message. Influencing perceptions and information through persuasion in evoking action and changes in attitude and behavior is one of the key charges for crisis communicators.

Crisis Communication Message Strategies

Persuasion and crisis communication messages go hand in hand with each other. Effective crisis messages have the ability to persuade. The purpose of a crisis message is to reduce the reputational, financial, and emotional damage that a crisis caused, while persuading audiences to maintain positive attitudes about an entity affected by the crisis. Understanding individual's attributions regarding a food safety crisis, which would lead to effectively incorporating this understanding in future crisis messages, is one of the factors that this dissertation hopes to provide more insight on.

People need to be guided through a crisis (Sandman, 2006). Crises typically produce a high level of uncertainty, which communicators can reduce by supplying needed information in the form of crisis communication messages (Heath & Jennings, 2000; Palenchar & Heath, 2007; Seeger, Sellnow, & Ulmer, 1998). Public relations and crisis communication professionals need to identify all audiences impacted by a crisis and to be prepared to communicate and disseminate information to these audience members (Heath, Lee, & Ni, 2009). Wester (2009) noted that during a crisis situation, people tend to search for information through traditional media sources, such as television and radio. This result is of particular interest to the current research, in which message source serves as an important independent variable.

Crisis communication scholars have illuminated features of messages that are most effective in reaching the public during a crisis situation. Information presented to

the audience should be clear, concise, and presented in a manner that is appropriate for the situation. However, researchers have discussed the importance of crisis communication professionals struggle in controlling the messages being disseminated and shared in the crisis situation (Wigley & Fonetent, 2010).

Message effectiveness is influenced by source credibility (Rohr, Luddecke, Drusch, Muller, & Alvensleben, 2005), which can be defined as "the amount of credibility (believability) attributed to a source of information (either a medium or an individual) by the receivers" (Bracken, 2006, p. 724). Source credibility combines expertise, trustworthiness, and attractiveness (Hovland & Weiss, 1951) and knowledge, expertise, experience, sincerity, unbiased nature, likeability, and motivation (Priester & Petty, 1995).

Credibility is influenced by audience trust in an organization supplying information. In telling a story, the corporation is indeed sharing information, but they are also establishing themselves as a credible and trustworthy source of information (Health, 2006). Audiences are more likely to perceive organizations as trustworthy when communication is two-way (Ropeik, 2006; Sandman, 2006). Ideal crisis communication messages include information about "process approaches and policy approaches," "listen to the public's concerns and understand the audience," provide "messages of self-efficacy," and demonstrate "honesty, candor, and openness" (Venette, 2006, p. 230).

Examples of Crisis Communication Case Studies

The crisis communications fields within public relations has grown in leaps and bounds over the last thirty years in response to the demands of corporations and other

entities desiring more understanding of best practices in crisis management. Several researchers have contributed significantly to the field with their work identifying the different stages of a crisis (Fink, 1984; Pearson & Mitroff, 1993; Mitroff et al; 1989; Reynolds & Seeger, 2005), while others have provided the framework for understanding the various message strategies that one can use in a crisis (Coombs, 1995; 1997; 2006) and responses (Benoit, 1995; 1997).

Organizations now recognize the need to be prepared and proactive in a moment of crisis. Heath and Gay (1997) argued that crisis management is just a small part of what makes up the larger perspective of crisis communications--issues management. Public relations professionals should identify, monitor, and analyze potential issues, and incorporate these elements into strategic plans (Seeger, Sellnow, & Ulmer, 1998). The more efficient approach to crises requires including as many stakeholders as possible in crisis preparation and response, allowing them to bring their perspectives, identities, and knowledge to the analysis (González-Herrero & Pratt, 1996). Jacques (2010) stated that crisis communication needs more emphasis on the "management activities proceeding from potential crisis identification and prevention through event response and on to long term post-crisis management" (p. 469). These activities include detecting early warning signs and potential issues as well as preparing for various scenarios – possible and even the impossible – that the corporation may face hypothetically.

Many recent publications have used the case study method to analyze how the parties involved handled a crisis (ex. Hurricane Katrina, Avian Flu Pandemic, H1N1, Maple Leaf Foods Crisis, and Sago Mining Crisis), while other publications have focused

on making the connection between established theories related to crisis communication (SCCT), restoring corporate reputations (Cleays, Cauberghe, & Vyncke, 2010), perception of crisis communication practices and severity of the crisis (Hwang & Cameron, 2008), and the impact of crisis messages on social media and sharing information with others in the online community (Stephens & Malone, 2009).

Particularly following the terrorist attacks of 9/11, contemporary research has focused on crisis incidents, such as health related crises, government and policy crises, environmental crises, and product recalls (Coombs & Holladay, 2010). Howell and Miller (2010) analyzed a 2008 crisis involving Maple Leaf Foods and their crisis response and strategies. The crisis case study of Maple Leaf Foods started in 2008 when the Canadian Food Inspection Agency found a bacteria strain of *Listeria* in some of the meat products sold by the company, which led to the death of 21 Canadians (Howell & Miller, 2010). Four themes emerged in their crisis communication messages: information about product safety, investigations by the government, corporate reputation, and product reputation (Howell & Miller, 2010).

Miller and Horsley (2009) investigated the Sago Mining accident that occurred in West Virginia early 2006, where 13 miners were trapped in the Sago Mine. During the course of the crisis, hope soared in response to reports that all of the miners survived only to be replaced by despair when it became known that only one of the miners survived (Miller & Horsley, 2009). One of the lessons learned in crisis communication is that there is not enough scholarly literature focusing on industries that are considered to be

high-risk (Miller & Horsley, 2009). Lack of acknowledgement of the risk associated with specific industries is a missing link in pre-crisis communication strategies.

A perceived weakness in the crisis communication literature is its reliance on empirical studies and case studies, when it could be attempting to integrate risk communication and crisis communication (Kalkheimer & Heide, 2006). These researchers recommend that further research focus on how reality is socially constructed based on various situations and contexts, and the importance of culture for understanding the reality of individuals faced with in a crisis.

In addition to predicting potential risks and preparing for a crisis, crisis communicators must identify the best sources of information for relevant audiences. With the growth of new media, individuals are more likely to search for information on the Internet and other new media platforms (Stephens & Malone, 2009). New technologies like social media and mobile devices are transforming how crises are interpreted and viewed. Additional research is needed to guide crisis communication plans and decisions in new media.

Role of Public Relations Professionals as Crisis Communicators

As discussed in previous sections, crisis communications has been a growing segment of the practice and research in public relations over the last several decades. The public relations professional has an active role in communicating messages, maintaining relationships, and managing the reputation and perception of any respective organization or client involved in the crisis. Public relations professionals in a crisis situation involving public health and safety take on an even deeper responsibility. They are tasked

with communicating messages that will persuade people affected by a crisis to take the steps needed to ensure their future health and well-being (Rohr, Luddecke, Drusch, Muller, & Alvensleben, 2005).

The public relations professional in crisis communication persuades others to listen to the corporation's key messages, rather than allowing the crisis to define the corporation's image. Reynolds and Seeger (2005) described that public relations professionals work in crisis communication because there is a "need for skilled communicators to strategically defend and explain the organization's position in the face of crisis-induced criticism, threat, and uncertainty" (p. 46). In many cases, the public relations professional acts as the liaison and reputation manager in the crisis—someone who represents the brand while strategizing messages and tactics to help the corporation overcome the crisis and protect the organization's overall corporate image and reputation. In a crisis situation, the public relations professional should be authentic and transparent, while also being influential among key audience groups by controlling the communication messages presented to the organization's various audiences (Schoenberg, 2005).

In addition to their other roles in crisis communications, public relations professionals need to determine how a message is disseminated to a particular audience group using effective communication channels. The medium used to communicate a crisis message is an important element to consider in determining the most effective way to distribute a message strategy to relevant publics. These professionals will have to determine which channel is most effective for an audience—the traditional media

(newspapers, radio, television) or non-traditional media (social networking sites like Facebook and YouTube.)

SOCIAL MEDIA

Defining Social Media

Social media use digital platforms to allow individuals to interact and engage in dialogue while sharing information (both textual and visual) with others in the virtual community. Social media are transforming how businesses are targeting their consumers, how organizations create and implement their campaigns, and how effective crisis messages are communicated to the community. From sharing news articles through the micro-blogging web site Twitter to networking with friends, professionals, and brands on the social networking phenomenon Facebook, consumer use of social media outlets is revolutionizing the public relations profession in the 21st century.

Social media combine "a wide range of online, word-of-mouth forums including blogs, company sponsored discussion boards and chat rooms, consumer-to-consumer e-mail, consumer product or service ratings websites and forums, Internet discussion boards and forums, microblogs" (Mangold & Faulds, 2009). Lariscy, Avery, Sweetser, and Howes (2009) defined social media as "online practices that utilize technology and enable people to share content, opinions, experiences, insights, and media themselves" (p. 1). The Air Force Public Affairs Agency – Emerging Technology Division (2009) has defined social media as the "tools and platforms people use to publish, converse and share content online" (p. 29). Social groups in the form of online discussion boards,

niche communities, and websites provide people with information that can be shared with others instantly (Wang et al., 2009).

Social media share some features with previous platforms for communication, but has unique aspects as well (Kleinberg, 2008). Social media are about "people" (Marken, 2007), and the technology not only provides means for establishing and maintaining relationships, but also allows users to create their own content to share with others in the online community (user-generated content; Waters, Burnett, Lamm, & Lucas, 2009). Examples of some of the content that individuals share with others in their online networks include information regarding news events, updates on personal and professional achievements, and multimedia content.

Use of social media ranges across cohort age groups. Social media and emerging technologies continue to be used most frequently among those in the younger generations ("Generations Online Report," 2010). Individuals who are 30 years or younger with a college education are more likely than other demographic groups to use the Internet and to be connected on social networking sites ("Global public embracing social networking," 2010). However, the fastest growth in social media use is among those who are 74 years or older , and some of the activities used by both the younger and older generations include seeking health information, reading news, and selecting products ("Generation 2010 Report," 2010). Social media trends are not the same from country to country and culture to culture. A recent study by the Pew Research Center discussed how the United States was one of only three countries in the world where middle age individuals (30-49 years old) were active on social networking sites ("Global publics embrace social

networking," 2010).

Social media are now an established channel for communication between organizations and their stakeholders, during good times or during a crisis. Social media provide numerous opportunities for public relations and crisis communications, but raise challenges and barriers as well.

Benefits and Challenges of Communicating Using Social Media

Social media offer many benefits for corporations and other organizations. Social media can be used to establish credibility for a brand and to promote an overall positive reputation among key publics (Prentice & Huffman, 2008). Social media are reciprocal, not only providing a means for organizations to communicate with audiences but also providing audiences a forum for communicating their reactions. Marken (2007) stated that social media provide an:

> An unfiltered view of consumer perceptions so firms can see what will impact the future of their business; word-of-mouth is having a tremendous control over perception and acceptance, and will become increasingly significant in influencing companies and products according to the revolutionaries (p.10).

Because of their interactive potential, social media are perceived as personal, which can boost the effectiveness of a message (Heath et al., 2009; Dillard, Shen, & Vail, 2007).

At the same time, social media have "amplified the power of consumer-to-consumer conversations in the marketplace by enabling one person to communicate with literally hundreds or thousands of other consumers quickly and with relatively little

effort" (Mangold & Faulds, 2009, p. 361). As a result, official messages are competing for consumer attention with many other sources of information.

By being aware of trends related to new media, public relations professionals can adapt the format of their crisis communication messages to fit the expectations of their key stakeholders (Stephens & Malone, 2009). More research is needed to understand which sites are being used for which purposes during a crisis, and how ethical and engaging crisis communication practices might need to be adapted for online sources (Stephens & Malone, 2009).

User-Generated and Professional Content

Not only do social media provide means for communicating messages designed by professionals for audiences, in parallel to message construction in traditional media, but they also allow the user to participate to an extent not seen previously in traditional media. According to the Air Force Public Affairs Agency – Emerging Technology Division (2009), user-generated content includes "texts, photos, and other material produced by people who previously just consumed," (p. 30). Users of social media can share their perspectives and opinions, initiating a virtual dialogue with others online with the same interests (Hsu, Ju, Yen, & Chang, 2007). Mulhern (2009) emphasizes the power of the social media user, who "will create whatever consumption experience they desire. The media content, ads and all, will be customized – not by the media company or marketer, but by the user" (p. 88).

Although many time-tested strategies are independent of the medium used to communicate them, social media raises new opportunities and challenges. How a

message is framed interacts with the medium used in determining its effectiveness. However, there is a fine balance between how much control an organization has on the message and the credibility of the message. For example, the more perceived control an individual or organization has over a message conveyed on social media, the less credible it appears (Argenti & Barnes, 2009). People online are looking for an open dialogue where they feel like they are communicating with a real person, not a computerized robot with prepared statements and action plans.

Social Networking Sites (SNSs)

Social networking sites (SNSs) are a particularly influential source of user-generated content. Social networking sites can be defined as "(1) web-based services that allow individuals to construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system" (boyd & Ellison, 2008, p. 211).

Using an SNS, an individual can control personal information to be shared with others. Users can also affiliate with businesses and large organizations that have a presence on these sites by adding them as "friends" (boyd, 2006; Utz, 2010). This provides the opportunity to create reciprocal virtual dialogues between user and organization (Walther, Van Der Heide, Kim, Westerman, & Tong, 2008). These dialogues have begun to magnify the range and impact of word-of mouth communication (Mangold & Faulds, 2009).

Implementation of Social Media and User-Generated Content

Practitioners in both public relations and crisis communications have begun using user-generated content in campaigns to communicate with their stakeholders. For example, Eyrich, Padman, and Sweetser (2008) found that public relations professionals used a wide range of social media tools: blogs, intranets, podcasts, video sharing (e.g., YouTube), photo sharing (e.g., Shutterbug, Flickr), social networks, virtual worlds (i.e., Second Life), micro-blogging/presence applications (ex. Twitter), social bookmarking (e.g., Delicious), mobile applications, news aggregation/RSS, and e-mail. Email was the most common form of social media being used in public relations, followed by blogs (Eyrich et al., 2008).

Wright and Hinson (2008) reported that some platforms of social media, and blogs in particular, have dramatically influenced how corporations communicate with their various target audiences. However, Kelleher (2008) reported that practitioners were less likely to perceive blogs and other forms of social media to be "accommodating" in terms of corporate communication with its key publics, which is the opposite of what the public feels in regards to this particular issue.

Social Media, User-Generated Content, and Crisis Communications

In the current realm of crisis communication, "if communities depend on information for their survival in times of crisis, then communication technologies are their lifelines," ("New technologies in emergencies and conflicts report," 2010, p. 4). Current advances in new media, such as social networking sites, microblog sites, and the increase use of geo-location based applications on mobile devices such as the iPad and

smartphones (ex. iPhone, Blackberry, Palm), have opened a world of opportunities for crisis communication professionals to share information, converse with others remotely, and discuss necessary information about a crisis with various stakeholder groups.

One of the emerging trends in new communication technologies has been the adaption of mobile applications, which have influenced how people communicate, interact, and share information using mobile devices (Purcell, Entner, & Henderson, 2010). Mobile applications are defined as "end-user software applications that are designed for a cell phone operating system and which extend the phone's capabilities by enabling users to perform particular tasks" (Purcell et al., 2010, p. 9).

Mobile applications are designed to allow the user to receive information directly to a mobile device, and to participate and create content through this digital interaction. More applications are being created each day, and they range in terms of functions. However, there are some applications that are more used than others. The Nielsen Company (2010) released their report titled "The state of mobile apps" and mentioned that the most popular categories in which people are using mobile apps includes games, weather, navigation, and social networking applications like Facebook.).

Social media and mobile technology can benefit individual stakeholders during a highly tense situation like a crisis. These emerging technologies have allowed people to feel they have more control over the crisis as well as more connection to the community (Shklovski, Burke, Kiesler, & Kraut, 2010). Increased empowerment of the individual stakeholder leads to greater feelings of control over the situation and a willingness to help others in the community, which could potentially be mobilized by crisis responders.

Social media allow stakeholders to share and discuss certain issues that they deem to be salient to them in an online community, bypassing the traditional gatekeepers in crisis communication (ex. media, journalists, etc). At the same time, stakeholders are expecting tailored and personalized messages rather than prepared statements and messages from organizations, during a crisis or not. Organizations are expected to listen and to respond to stakeholder concerns. Recognizing the influence of social media allows public relations professionals the opportunity to use social media strategically to look for potential issues relevant to their stakeholders, to prepare for crises, and to implement online communication (González -Herrero & Smith, 2008, p. 144).

While there are many new opportunities for crisis communication professionals using social media during a crisis, there are of course new risks and considerations that need to be reviewed more thoroughly.

Who "owns" social media within an organization continues to be debated as social media become an integrated part of an organization's reputation and communication practices. Some assume that public relations has ownership, because public relations focuses on establishing and managing stable relationships with key stakeholders and creating communication messages that are strategically placed. In most cases, social media has been used across disciplines and professions, which has transformed it into an interdisciplinary business and communication medium (Gordon, 2009).

Brian Solis (2008), noted public relations and social media professional and author of the PR 2.0 web site, states that social media:

> Forces companies to look outward to proactively find the conversations that are important to business and relationships. And it's not just the responsibility of PR, it requires the participation by multiple disciplines across the organization in order to genuinely provide meaningful support and information" (p. 6-7).

Communication and public relations professionals have to manage more media platforms (both traditional and non-traditional) presently than ever before, which has made the management task more complex and complicated (Heitmann & Lott, 2008).

Crisis communication professionals are now expected to communicate in several different communication channels (both traditional and social), be aware of how each message is presented and perceived in these various forms, and monitor and listen to the messages shared and discussed by various stakeholder groups. Some professionals have not have had the necessary training to fully grasp new forms of technology. Overloading the mobile and web bandwidth, lack of education and understanding on how to use social media specifically in a crisis situation, necessary training in social media and crisis communications, and communicating information that is based on rumor and not facts are just some of the challenges facing crisis communications professionals.

Recent key crisis events have provided insights into managing a crisis in the era of social media. For example, Palen and Vieweg (2007) analyzed online dialogue during the Virginia Tech shootings and during the shootings that occurred a few months later at Northern Illinois University (NIU). According to this analysis, having a platform for sharing information with concerned family members, friends, community residents, and the professional media had significant, positive impact among stakeholders.

Gaps in Social Media Research

Most of the existing social media research studies have used quantitative research methods such as surveys (Hinduja & Patchin, 2008; Krämer & Winter, 2008) experiments (Tong, Van Der Heide, Langwell, & Walther, 2008; Walther, 2007; Walther, et al., 2008), or content analyses of specific social networking profiles (boyd & Ellison, 2008 ; Krämer & Winter, 2008; Ross , Orr, Sisic, Arseneault, Simmring, & Orr, 2008; Zhao, Grasmuck, & Martin, 2008). Others have focused on particular social networking sites such as Facebook or MySpace (boyd & Ellison, 2008; boyd, 2007; Palen, Hiltz, & Liu, 2007; Steinfield, Ellison, & Lampe, 2008; Vieweg, Palen, Liu, Hughes, & Sutton, 2008) and the construction of online identities with social media (Zhao et al., 2008; Mazer, Murphy, & Simonds, 2007).

Researchers are beginning to recognize the need to evaluate the impact of social media on crisis communications and public relations (Coombs, 2007a; Kelleher, 2008; Lariscy et al., 2009; Palen et al., 2007; Wright & Hinson, 2008; Wright & Hinson, 2009). Recent research studies have focused on the use of social media in crisis situations in general (Shklovski , Palen, & Sutton, 2008) and in specific crisis events including 9/11 (Midkoff & Bostain, 2002), Hurricane Katrina, the 2007 Virginia Tech Shootings (Liu, Palen, Sutton, Hughes, & Vieweg, 2008; Palen, 2008; Palen, et al., 2007; Vieweg, et al., 2008), and the Tennessee Valley Authority Ash Spill (Sutton, 2010). Midkoff and Bostain (2002) pointed out that the terrorist attacks on 9/11 showed the need for more effective technological advancements in communicating emergency response messages in disaster situations. The terrorist attacks during 9/11 stimulated increased focus and drive

in the crisis communication literature looking at the implementation and crisis communication strategies involving new forms of technology in a crisis or disaster situation.

Shklovski, Palen, and Sutton (2008) discussed how various professionals such as emergency center operators, police, military, and medical personnel have actively used new forms of technology in communicating remotely in a disaster or crisis situation. Sutton (2010) analyzed Twitter updates and conversations in regards to the TVA Ash Spill crisis, messages that often reached the public before the traditional media. Vieweg, Palen, Liu, Hughes, and Sutton (2008) looked at the possible risks for organizations that inadvertently provide false information to stakeholders in a time of crisis.

Although there is a large literature analyzing specific social media sites (ex. Twitter) during a crisis, emerging research in the crisis communication and disaster literature has explored how mobile devices such as smartphones and tablets are being integrated and used in communicating crisis messages during these situations. Individuals are able to use these mobile devices to maintain a sense of control of the information they are receiving, as well as generating and creating their own content (Stephenson & Bonabeau, 2007). Mobile devices in crisis situations are essential in promoting effective communication since they "play a pivotal role in emergency situations by serving three purposes: to be reachable anywhere and at anytime, to obtain information while in an outreach situation; and, to be 'visible' and traceable through a device enabled with GPS positioning capabilities" (Gomez, Passerini, & Hare, 2006 , p. 439). From sending text messages to sharing pictures and videos at the crisis site, to even

incorporating press releases via text, the mobile device is becoming a necessary tool for all crisis communication professionals.

Mobile devices not only allow people to communicate with others, but they also help create new online relationships and connections with others using the same technology and devices (Palen, 2002). The use of mobile devices both for personal and professional reasons is increasing rapidly, to the point where the number of individuals using mobile phones in 2010 has increased to four billion, or 61 out of every 100 people world-wide ("New technoloigies in emergencies and conflicts report: The role of information and social networks," 2010). Society in general has been very engaged and interactive in learning more about mobile devices and other elements of new technology (Veinott, Cox, & Mueller, 2009), and researchers can assume that user competencies will keep pace with the abilities offered by the technology.

To further inform our understanding of social media messages during a crisis, we need to know more about the variables that predict receiver responses to crisis messages. In particular, researchers need a better understanding of the impact of user-generated as opposed to traditional, professionally generated information. Using social media, users not only receive information, but they can use the technology to create their own content or forward content to others. By doing so, users contribute directly to the media by providing eyewitness perspectives through video, photos, or texted accounts of an event, often bypassing the professional reporters on the scene and providing unfiltered views of what is happening in the world (Gordon, 2009).

FOOD SAFETY

The Meaning of Food

Although many different crises could serve as the focus of this dissertation, food crises were selected. Food crises are both relatively common and disturbing, affect large numbers and types of people across long distances, and require significant compliance with safety messages.

Rozin (2005) stated that human beings throughout history have viewed food as an essential part of daily existence, not only as a source for energy, but also for survival. Food is a symbol perceived by individuals as positive, necessary, and at times a product that is craved (Moore, 1957). Today's food comes in multiple forms, ranging from naturally-grown fruits and vegetables (ex. bananas, strawberries, spinach, lettuce, tomatoes), meat products (beef, chicken, fish, etc), to processed manufactured foods (ex. ice cream, cookies, cereal, etc.)

The activity of consuming food is integrated into our daily lives as human beings, and plays an important role in shaping our social relationships and cultures (Moore, 1957). Human beings have long sought out ways to ensure their food is safe. For example, foods such as garlic, onion, and spices used in curry have strong antibacterial properties that prevent many food-borne illnesses (Kim, Kim, & Kyung, 2004).

Food Safety Issues and Concerns

Grunert (2005) conceptualized food safety as "the opposite of food risk, i.e. as the probability of not contracting a disease as a consequence of consuming a certain food," (p. 381). Food safety crises refer to negative incidents or events following the

consumption of food, and outcomes and perceptions often reflect an individual's personal experience with food safety (Böcker & Henning Hanf, 2000; Rohr, et al., 2005). Not only do food safety crises cause emotional and physical stress, but they can have severe economic effects on a society (Jevsnik, Hlebec, & Raspor, 2008).

Increased consumer awareness and concern over food safety and maintenance of trust in the food industry among consumers are two of the primary issues currently under discussion in the industry (Gellynck, Verbeke, & Vermeire, 2006). Food safety concerns among consumers have increased over the last couple of years due to recent food safety crises and recalls related to food products (Levy, Choiniere, & Fein, 2008). Food safety currently ranks very high as an important issue for consumers due to threats of food bioterrorism and reports of contamination of food products and specific ingredients. Deliberate attempts to create crises and terrorist attacks through the food supply, has created awareness of this global security threat (WHO, 2008). These concerns have increased consumer insecurities about food products (Tolma, John, & Garner, 2007).

Kuttschreueter (2006) defined a food safety message as "a message concerning a potential food problem—whether it is a warning issued by the company involved, the food authority, or a news item in the mass media—typically implies that the consumer of the particular food item might to a certain extent be at risk" (p.1046). Understanding the perceptions and risks of the food safety situation influences how a person acts upon the information presented in the food safety crisis messages (Kuttschreuter, 2006).

The most common food borne diseases according to the Centers for Disease Control and Prevention (CDC, 2005) includes campylobacter (raw chicken), salmonella

(bacteria from intestines of birds, reptiles, and other mammals), and E. coli (bacteria often found in cattle). All three can cause serious illness or death in persons consuming the contaminated food.

Perceptions of Food Safety

People perceive safety in two different ways – one, they ask how adverse events can be prevented, and two, they want to know safety measures have been created in response to a crisis event (Boulding & Purohit, 1996).

A perception of food risk is the "function of awareness, knowledge of likelihood, and knowledge of severity of food borne illness" (Gordon, 2003, p.1288). Food safety concerns appear to be focused narrowly on certain food products and situations, rather than a general fear (Green, Draper, & Dowler, 2003). Food originating from the home is perceived as being safer, because the individual feels a sense of control over the situation; whereas food obtained elsewhere would increase the risk of food contamination (Gordon, 2003). Restaurants elicit more anxiety about food safety than eating at home (Green et al., 2003; Knight, Worosz, & Todd, 2009). In particular, individuals who had experienced food poisoning after eating at restaurants were more concerned about food safety and issues related to food (Knight et al., 2009).

Food Safety and Crises

The safety of consumer products, and food in particular, is experiencing greater interest in the crisis communication literature. Food safety provides a model domain for explorations of best practices in crisis management.

Food-borne diseases have increased in the United States over the last several years. An estimated 76 million cases of food borne disease occur each year, and about 5,000 of these cases result in death ("Food illness: Frequently asked questions," 2005). The increasing likelihood of bioterrorism attacks through the food supply raises the specter of large-scale illness and death ("Terrorist threats to food: Guidance for establishing and strengthing prevention and response systems," May 2008).

With more focus and awareness of food safety issues presented by major health organizations and media, consumers are becoming more interested in how various farms and processing plants are producing food, igniting more discussions related such as organic production, use of genetically modified organisms in food products, and the well-being and treatment of the animals in these facilities (Grunert, 2005). Consumers "expect all food to be intrinsically safe and a well-informed and rational consumer would never knowingly purchase or consume unsafe food. There is an expectation throughout society that the food supplied for human consumption is safe and nutritious to eat" (Verbeke, Frewer, Scholderer, & De Brandander, 2007, p. 2). Historically, this expectation is probably optimistic. The food industry both domestically and internationally has experienced a number of food safety issues and crises (Böcker & Henning Hanf, 2000), such as mad cow, E. coli contamination, the 2009 swine flu crisis, and the recent egg recall in August 2010. This has caused a more demanding environment and critical mindset when it comes to food products, and has influenced consumer's buying behavior to focus not only on the price of the food, but also whether or not they perceive these food products to be safe to consume (Grunert, 2005).

Classic case studies have shaped the food safety, prevention, and crisis management disciplines. Food safety crisis events ranged from the early battles against cholera or typhoid fever ("Food illness: Frequently asked questions," 2005) to the recent egg recall in the United States in 2010. The most common foods involved in food contamination or poisoning events are seafood, eggs, beef, and fresh produce (DeWaal, 2003, p.76). In most of the food safety and crisis literature, these are the products which are heavily discussed in various case studies.

The past two decades have featured a number of significant food safety crises. Bovine spongiform encephalopathy (BSE or "mad cow" disease) is one of the most well-known food safety crises. Due to livestock feeding practices during the 1990s in the United Kingdom, people consuming infected beef products contracted a fatal neurological disease. Fears of contaminated food spread to the United States and elsewhere, leading to recalls and lower sales of beef products (Hooker, Teratanavat, & Salin, 2005). In addition, the US Congress recalled 19 million pounds of beef over fear of E. coli (*Escherichia coli*) contamination and 27.4 million pounds of chicken over concerns of contamination of *Listeria monocytogenes* (Hooker et al., 2005). These recalls not only had a negative impact financially for the beef industry, but also impacted how the entire industry was perceived among its key stakeholders (DeWaal, 2003). In 2009, people mistakenly avoided eating pork due to the label of the H1N1 virus as "swine flu," and the reputation and financial standing of the pork industry was severely damaged (Freberg, Palenchar, & Veil, 2010).

Understanding the associations being attributed to the perception of food crises may be due to the range in views and attention paid to these particular crisis events among risk bearers. Awareness and understanding of food safety among consumers falls along a continuum. On one extreme, some consumers appear to be overanalyzing food safety. On the other extreme, consumers completely underestimate the risks (Verbeke, Frewer, Scholderer, & DeBrandander, 2007). Many individuals are unsure about the steps needed to maintain safe food (Jevsnik, Hlebec, & Raspor, 2008). To reduce stress among consumers, food safety specialists and crisis communicators are working to maintain the reputation and trust of their organizations among consumers (Gellynck, Verbeke, & Vermeire, 2006). Education about food safety precautions and understanding how food can become contaminated is one of the primary focuses of health organizations, such as the CDC, while most consumers report obtaining information regarding food safety from professionally generated sources, such as government agencies, consumer organizations, and the media (Lobb, Mazzocchi, & Traill, 2007).

Challenges in Food Safety and Crisis Communication Message Strategies

Effective food safety communications raise problems that are unlike other areas of health communication (Hallman & Cuite, 2010). Most other health messages are consistent, enduring communications designed to permanently change ongoing health behaviors. In contrast, food recall communications "must be dynamic, successfully warning people to avoid certain products when they pose a threat and then, with equal success, alert people when the danger has passed" (Hallman & Cuite, 2010, p. 3). "…Communications about food recalls are different than other kinds of health

communications" (p. 24). Best practices in crisis communications typically focus on "how" to communicate (with compassion and empathy, etc.) rather than "what" information should be communicated (which products are affected, what steps to take), but answers to the "what" questions form an essential aspect of food safety communications (Hallman & Cuite, 2010).

Obtaining compliance with food safety messages can be a major challenge for crisis communicators responding to food crises. Food safety messages must be strong enough to motivate compliance without panicking the public and destroying businesses and whole industries (Hallman & Cuite, 2010; Kuttschreuter, 2006). Consumers filter such messages based on their personal attitudes towards the food item in question (Gellynck, Verbeke, & Vermeire, 2006).

Ideally, food safety messages should promote self-efficacy and guidelines for making necessary changes in behavior (Gordon, 2003). Warnings and crisis messages about food safety inform consumers about the situation and instruct them about how to obtain additional information. However, warnings can create more uncertainty, anxiety, and tension among audiences (Kuttschreuter, 2006). Perceptions of the food safety situation influences consumer response to the information presented in the food safety crisis message (Kuttschreueter, 2006).

Consumers are being exposed to many sources for food hazard and crisis information, ranging from the media, government, specific retailers, manufacturers of food products (de Jonge, van Trijp, & Frewer, 2010), and other consumer advocate organizations (Lobb et al., 2007). The media play significant roles in initiating mass

responses by consumers to a food safety crisis (Böcker & Henning Hanf, 2000; de Jonge, van Trijp, R.J., & Frewer, 2010; ; de Jonge, van Trijp, van de Lans, R.J., & Frewer, 2008; de Jonge, van Trijp, Renes R.J., & Frewer, 2007). Historically, traditional media have been the primary source of information about food safety issues and risks. Two-thirds of the American population first learned about the 2006 spinach recall and 71 percent learned about the 2008 *Salmonella* outbreak from television news programs (Hallman & Cuite, 2010). In addition to having a large role in communicating food safety information, the traditional media have helped consumers evaluate and assess information about the particular food product or situation (de Jonge et al., 2010). The use of traditional media has been generally effective, because information communicated by traditional media reaches a large segment of the population immediately (Böcker & Henning Hanf, 2000).

Consumers obtain food safety information not only through the media, but also through physical handouts. Celuch, Lust, and Showers (2001) analyzed how consumers responded to safety information presented in product manuals, and found that negative tension influenced the relationship of self-efficacy as well as safety-related behavioral intention. If a message creates a sense of negativity about the issue or message, receivers will not comply with the message as readily as when this sense of negativity or tension related to the message is lacking (Celuch et al., 2001).

The level of trust attributed to the source communicating the message has a strong influence on consumer perceptions and compliance. Trustworthiness is highest when a message originates from a credible source of information, the person communicating the

message is perceived to be an expert in the field, and messages are transparent (Kjaernes, 2006). Trust "helps individuals reduce uncertainty and therefore helps with the coordination of social expectations and interactions by allowing specific, rather than arbitrary, assumptions about future behavior" (Lang & Hallman, 2005, p. 1244).

In regards to food safety, trust not only involves the person or organization communicating the message, but it also relates to trust for the entire food system, including processing, manufacturing, and supplying food products to the mass audiences (Kjearnes, 2006). In one study, government agencies and manufacturers were viewed as being more trustworthy than farmers and food retailers (de Jonge et al., 2007).

It is useful to attempt to segment consumers on the basis of their information seeking behaviors. One study found five distinct groups of consumers: heavy institutional-source users, moderate institutional-source users, social-source users, nonselective heavy users, and low users (Kornelis, de Jonge, Frewer, & Dagevos, 2007). For example, heavy institutional source users obtained food safety messages from government organizations and established institutions, whereas social source users obtained information from friends, family, or neighbors (Kornelis et al., 2007). Given the increase in the use of social media in the last decade, the effects of the source of information on receiver behavior during a crisis should be investigated further.

THEORY OF PLANNED BEHAVIOR

An important requirement for a positivistic study is the groundwork provided by a strong theory. For a study to be sound and just, it needs to refer to a theory that is able to support and explain and provide some understanding to a particular phenomenon.

Wacker (2008) divided his analysis of theory into three questions: what is a theory, what is a good theory, and what are the guidelines for a good theory.

A theory "is an explained set of conceptual relationships" (Wacker, 2008, p. 6). These sets of relationships should have clear definitions, domains, and predictions. All terms used in a theory should be defined, as well as the areas, objects, individuals, and groups to which the theory applies. According to Stewart and Zinkman (2006), a good theory "does more than describe, it identifies causal structures that provide the basis for forward prediction" (p. 478). A good theory is one that either supports an existing theory and builds upon previous knowledge that is relevant to the phenomenon being studied, or it provides a different perspective that contradicts previous paradigms. In the latter case, the debate and discussion that arise from these different perspectives may result in new studies and research ideas, which could eventually contribute to the body of knowledge for the discipline. One of the key aspects of a good theory is that it needs to be logical. If the theory that is being used as the basis of a research study is not logical and sensible, then the study is unlikely to make any meaningful contributions.

Theory of Reasoned Action & Theory of Planned Behavior

The ability to predict receiver compliance with a crisis message requires an understanding of intention. Two classic theories of intention are the Theory of Reasoned Action (TRA; Fishbein & Ajzen, 1975, 1980, 2005), and its extension, the Theory of Planned Behavior (TPB; Ajzen, 1991a, 1991b, 2002a, 2002b; Ajzen & Albarracín, 2007; Ajzen, Brown, & Carvajal, 2004; Ajzen & Driver, 1991, 1992a, 1992b; Ajzen & Fishbein, 2004; Ajzen & Madden, 1986; Ajzen & Manstead, 2007).

Ajzen and Fishbein (1977) argued that the TRA framework provides researchers with a way to predict behavior based on preconceived attitudes and opinions about a given person, subject, or organization. Ajzen and Fishbein (1977) stated that

> …a person's attitude toward an object influences the overall pattern of his responses to the object, but that it need not predict any given action. According to this analysis, a single behavior is determined by the intention to perform the behavior in question. A person's intention is in turn a function of his attitude toward performing the behavior and of his subjective norm. It follows that a single act is predictable from the attitude toward that act, provided that there is a high correlation between intention and behavior (p. 888).

Fishbein and Ajzen (1980) pointed out that individuals do not make decisions without thinking, but rather "consider the implications of their actions before they decide to engage or not engage in a given behavior. For this reason we refer to our approach as a 'theory of reasoned action'" (p. 5).

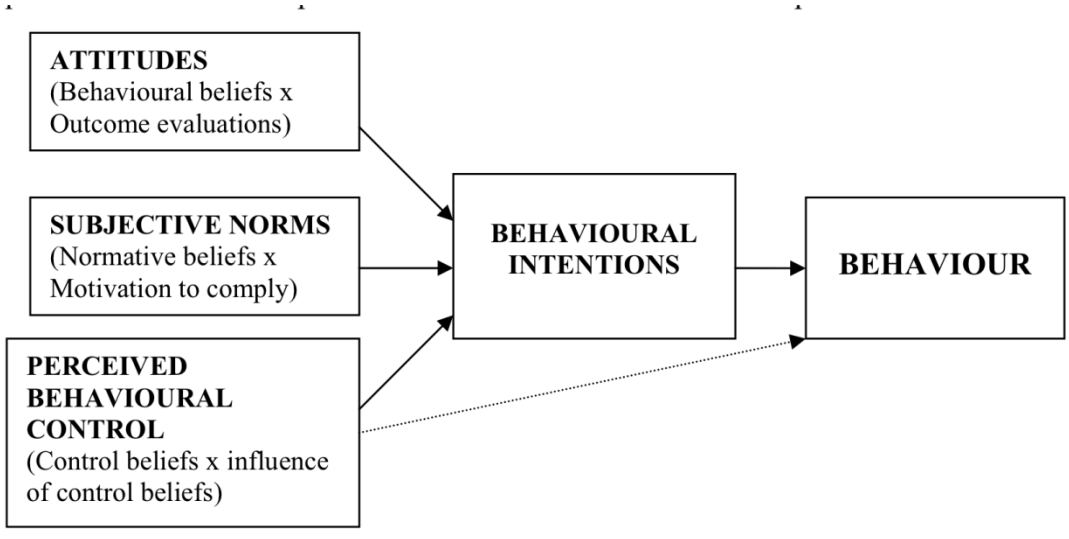


Figure 2.1: Theory of Planned Behavior (Ajzen, 1991), from Francis et al. (2004)

The TRA model predicts that positive attitudes towards a behavior and support of significant others for the behavior (subjective norms) raised the likelihood of a person's intention to perform the behavior. When subsequent research suggested that intention was also influenced by the person's control over the behavior, the TRA was modified into the TPB with the addition of a construct of "perceived behavioral control." Perceived behavioral control not only influenced intention, but also influenced resulting behaviors. The basic framework of the TPB is illustrated in Figure 2.1.

The construct of behavioral control originated with Albert Bandura's Self Efficacy Theory (1977; 1986). Self-efficacy describes a person's confidence in his or her abilities to perform behaviors required to reach a certain outcome, such as sticking to a diet or exercise plan to lose weight. Self-efficacy and perceived behavioral control play important roles in many health-related decisions, such as whether to attempt to lose weight or quit smoking, making the TPB particularly appropriate for predicting health-related behaviors (Armitage & Conner, 2001).

The TPB has provided a useful framework for explaining and predicting consumer attitudes towards new food products (Olsen, Heide, Dopico, & Toften, 2008) and consumer behavior during specific food safety incidents (Philip & Anita, 2010). Consequently, this dissertation is framed using the TPB instead of the TRA. However, this dissertation does not measure actual behavior in the form of compliance with food safety messages. Because perceived behavioral control has a dual effect on intention and behavior in the TPB, the lack of information about behavior in this dissertation might mask any effects of perceived behavioral control.

Main Constructs in Theory of Planned Behavior

The TPB adds perceived behavioral control to the three existing constructs of the TRA (attitudes, subjective norms, and intention) that can predict the likelihood of a particular behavior (Ajzen, 1991a).

The concept of an attitude has a long history in the study of human behavior. Thurstone (1928) stated that an attitude is "the sum total of a man's inclinations and feelings, prejudice or bias, preconceived notions, ideas, fears, threats, and convictions about a specific topic" (p. 531). More contemporary scholars view attitudes as guides for determining positive or negative evaluations while performing a specific task (Cooke & French, 2008). In the context of the TPB, an attitude "represents a summary evaluation of a psychological object captured in such attribute dimensions as good-bad, harmful-beneficial, pleasant-unpleasant, and likable-dislikable" (Ajzen, 2001 , p. 28). In particular, the TPB argues that individuals form attitudes about the likelihood that a behavior will lead to a particular outcome. For example, a person might have a positive attitude about following a food safety rule: "If I eat fewer calories, I'll lose weight," (behavioral belief) and "Losing weight is good for my health" (attitude toward behavior).

Subjective norms introduce a social dimension to decision-making and intention, which is of particular interest when considering social media. In addition to forming attitudes with positive or negative valence, people use the attitudes of significant others to guide behavior. Normative beliefs reflect the attitudes of friends, family members, experts, and others with influence. Subjective norms are judgments of the amount of pressure one feels from significant others to comply with normative beliefs. "My friends

think maintaining a healthy weight is a good thing" is a normative belief, and "my friends' opinions about health are very important to me" reflects a subjective norm. Philip and Anita (2010) found that subjective norms were the most influential predictor of complying with food safety practices.

Perceived behavioral control describes how easy a person thinks it will be to perform a behavior. Perceived behavioral control is determined by control beliefs, which involve an understanding of the factors that can help or hinder performance of a behavior (Ajzen, 2001). Control beliefs include perceived assistance and barriers related to performing a behavior. For example, one person might think it will be easy to eat fewer calories to lose weight because her whole family is on Jenny Craig, but another will believe that losing weight with Jenny Craig won't work because the program is too expensive. Summing the positive and negative control beliefs will provide a measure of perceived behavioral control (I think I can lose weight easily or I think losing weight is too hard). Control beliefs include both internal and external barriers (Cooke & French, 2008). An internal control belief might be "I don't have enough willpower to lose weight," and an external control belief might be "I travel too much to stick to a rigid diet."

Behavioral intention in the TPB is the immediate precursor of the actual performance of the behavior, and is in turn predicted by attitudes, subjective norms, and perceived behavioral control (Ajzen, 2002a). The TPB has provided nuanced insight into a variety of intended behaviors, including gambling behavior (Martin, Usdan, Nelson, Umstattd, LaPlante, Perko, et al., 2010), suicide intervention (Aldrich & Cerel, 2009),

binge drinking (Norman & Conner, 2006), condom use (Albarracin, Fishbein, Johnson, & Muellerieile, 2001), exercise (Nguyen, Potvin, & Otis, 1997), diet (Conner, Kirk, Cade, & Barrett, 2003), and compliance with food safety practices (Philip & Anita, 2010). Aldrich and Cerel (2009) used the TPB to predict the effectiveness of persuasive messages designed to reduce suicidal intention. Martin et al. (2010) found that subjective norms held by family and friends predicted the participants' gambling behavior, and the intention to gamble reciprocally influenced these relationships. These results support a similar finding about the importance of subjective norms reported by Philip and Anita (2010).

The TPB provides a strong theoretical foundation to analyze an individual's intention, perceived control, attitudes, and subjective norms regarding a food safety recommendation in a crisis. However, it has not yet been applied to the public's intent to comply with food safety recommendations (Hallman & Cuite, 2010). Use of the TPB will ground the current examination of response to social media messages regarding food safety with a strong tradition of behavioral intention research.

JUSTIFICATION OF DISSERTATION

This dissertation provides benefits to both researchers and practitioners in crisis communications, public relations, and behavioral research in general. Although "the systematic study of effective [food] recall communications is in its infancy," (Hallman & Cuite, 2010, p. 24), existing empirical models from public relations and psychology provide a good starting point for further understanding.

The results of this dissertation contribute to a further understanding about the ability of established best crisis communication messages and practices to produce good results within the domain of social media. Crisis communicators currently do not know whether user-generated content will produce effects on receivers that are the same or different compared to the effects of messages conveyed through traditional mass media. In addition, researchers and crisis communication professionals need to understand the impact and influence that unconfirmed or confirmed information has on a person's intention to comply with a specific message.

The existing literature has discussed how people are more likely to act upon messages that from traditional sources based on trustworthiness and expertise (Hovland & Weiss, 1951). People are more compliant with food safety messages originating with government agencies and organizations (Williams & Hammitt, 2001). The direct contrast between the effects of messages conveyed by professional sources or user-generated sources provides insight into the viability of using social media to disseminate food safety messages. Research on social media effects during a crisis are beginning to appear in the literature. Sutton (2010) analyzed the impact of Twitter updates during the Tennessee Valley Authority Ash Spill in 2008. Freberg, Palenchar, and Veil (2010) evaluated sharing behavior on the social bookmarking site Delicious during the H1N1 crisis. However, much work remains to be done in this area.

Understanding the relative impact of confirmed versus unconfirmed information on compliance also has practical implications. One of the issues in handling a crisis is to manage the uncertainty of the various affected audiences in the situation. Miles and

Frewer (2003) found that participants who felt that they had little to no control over a food safety situation were more likely to deem the situation more serious when presented with uncertain information. In contrast, participants perceiving greater control and presented with clear information viewed the situation as less serious.

The goal of many crisis messages is to gain compliance from receivers on matters of safety. The TPB has been used extensively to predict behavior and intention in various health situations and issues, and provides a strong theoretical basis for the current research. To maximize the effectiveness of a message, public relations and crisis communications professionals must understand how the type of media used to convey the message (professional versus user-generated media content) interacts with perceptions of a message as confirmed or unconfirmed in influencing the receivers' response to the message.

RESEARCH OBJECTIVES

The research objective is to analyze the core concepts involved in the TPB (attitudes, norms, intention, and perceived control) in an experimental design to test the effects of the reliability of food safety messages (unconfirmed versus confirmed information) and the source of these messages (professional versus user-generated) in receiver compliance with safety messages during a food safety crisis situation. This goal leads to the following four research questions:

RQ1: How is receiver intention to comply with a food safety message influenced by the message source (professional versus user-generated content)?

RQ2: What is the effect of message reliability (unconfirmed or confirmed information) on receiver intention to comply with a food safety message?

RQ3: Does the TPB provide a strong model for predicting intention to comply with a food safety message?

RQ4: Will participant age have an impact on responses to user-generated content?

It should be noted that a full application of the TPB would include an analysis of behavior, or the actual compliance during a real food safety crisis in this case, but given the constraints of ethics and timing, this is not currently feasible. However, an obvious extension of the current research would be to examine real behavior in a real food safety crisis as it occurs. In the meantime, understanding the intention to comply under these circumstances is a good first step to understanding the complete phenomenon.

MAIN THEORETICAL MODEL

As illustrated in Figure 2.2, the experiment phase of this dissertation involves two independent variables (IVs)—confirmed versus unconfirmed and professional versus user-generated content—superimposed on the model proscribed by the TPB. The dependent variable (DV) is intention to comply with a crisis message. Attitudes, subjective norms, and perceived behavioral control immediately predict intent, and are predicted in turn by behavioral beliefs, normative beliefs, and control beliefs, respectively (Ajzen, 2002). This model generates five major hypotheses that are explained in detail below.

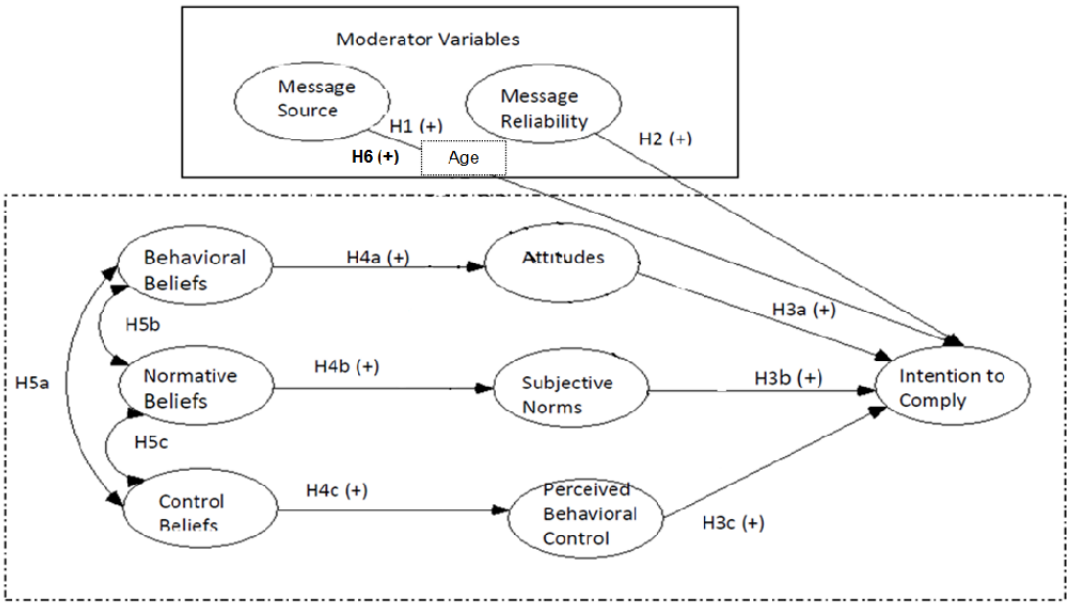


Figure 2.2: Theoretical Model for Dissertation Research

Intent as a Function of Message Source and Message Reliability

Individuals might be more influenced to comply with food safety messages coming from professional sources than user-generated sources. For the purposes of this dissertation, a professional source is defined as a recognized expert or authority, whose information appears in a primary source as opposed to being reprinted or described by authors other than the expert. User-generated sources are defined as those originating with people who are normally consumers of expert information ("New media and the Air Force, 2009). For example, user-generated information would include blog posts by non-experts and the sharing of links on social media such as Twitter or Facebook.

The traditional media (radio, television, and print) typically feature professional sources, and have helped consumers evaluate and assess information about particular

food products in numerous situations (de Jonge et al., 2010). This has resulted in a higher level of trust and compliance in response to these messages (Williams & Hammitt, 2001). In another study using the Theory of Planned Behavior, Lobb et al. (2007) found that the greater trust in food safety information provided by traditional media reduced the likelihood of the individual in purchasing a recalled chicken product.

Yifeng and Sundar (2010) reported that if health related messages came from a credible professional, people might comply with the message; however, individuals were also influenced by messages from someone they know, with whom they might have more in common than with a health professional. Perceiving a source as credible and trustworthy as well as having an established relationship with the source influenced how individuals perceive the messages (Walther, Van der Heide, Kim, Westerman, & Tong, 2008). Bernhardt and Felter (2004) conducted a focus-group study about online parenting advice, and found that people preferred to obtain information from other parents active on the site, compared to professionals. These findings suggest that user-generated information, particularly in the context of existing relationships, might also have a strong influence on compliance.

Although the existing literature points to advantages of both professional and user-generated sources, the weight of the prior results appears to favor the influence of professional sources. Professional content is expected to have a greater impact on intent than user-generated content.

> *Hypothesis 1:* Message source will have a direct, positive effect on intent to comply with a food safety message (RQ1).

Uncertainty affects consumer responses in food related crises. Presenting information that is not yet certain (unconfirmed messages) is risky. Uncertainty could lead people to underestimate the severity of the situation and their personal risk (Miles & Frewer, 2003). A history of releasing recommendations based on preliminary, unconfirmed information that turns out to be false could lower overall credibility for an organization. Benefits of communicating preliminary, unconfirmed information could include the perception of greater transparency and the promotion of early responding. Based on the previous literature, unconfirmed information is expected to have an impact on intent, but the magnitude of that effect relative to the impact of confirmed information remains to be explored.

> *Hypothesis 2:* Message reliability will have a direct, positive effect on intent to comply with a food safety message (RQ2).

Attitudes, Subjective Norms, and Perceived Behavioral Control

Consistent with the TPB, attitudes, subjective norms, and perceived behavioral control are expected to predict intent to comply with a food safety message. For example, people cooking at home experienced high perceived control over food safety compared to people eating in restaurants, and this difference in perceived control was consistent with the participants' level of anxiety about food safety (Knight, et al., 2009).

> *Hypothesis 3a:* Attitudes towards food safety will have a direct, positive effect on intent to comply with a food safety message (RQ3).
>
> *Hypothesis 3b:* Subjective norms about food safety will have a direct, positive effect on intention to comply with a food safety message (RQ3).
>
> *Hypothesis 3c:* Perceived behavioral control relevant to food safety will have a direct, positive effect on intention to comply with a food safety message (RQ3).

As specified by the TPB, attitudes, subjective norms, and perceived behavioral control are expected to be predicted by their respective antecedents: Behavioral beliefs, normative beliefs, and control beliefs.

Hypothesis 4a: Behavioral beliefs about food safety will have a direct, positive effect on attitudes towards food safety (RQ3).

Hypothesis 4b: Normative beliefs about food safety will have a direct, positive effect on subjective norms relevant to food safety (RQ3).

Hypothesis 4c: Control beliefs relevant to food safety will have a direct, positive effect on perceived behavioral control relevant to food safety (RQ3).

As specified by the TPB, behavioral beliefs, normative beliefs, and control beliefs are expected to correlate positively with one another.

Hypothesis 5a: Behavioral beliefs and control beliefs relevant to food safety will be positively correlated (RQ3).

Hypothesis 5b: Behavioral beliefs and normative beliefs relevant to food safety will be positively correlated (RQ3).

Hypothesis 5c: Normative beliefs and control beliefs relevant to food safety will be positively correlated (RQ3).

CHAPTER 3: METHODS

RESEARCHER'S ASSUMPTIONS

Science often advances when scientists overcome set paradigms in scientific research (Kuhn, 1962). The history of the philosophy of science, extending back at least 2500 years, has largely been the history of the natural sciences (Wacker, 2008). Although the social sciences, including applications in business and communication, rely on the same methods as the natural sciences, important differences occur.

The natural sciences use fundamental processes, like the laws of physics, to explain observed phenomena. These fundamental processes continue to evolve over time and space. In contrast to the natural sciences, the social sciences progress against a backdrop of constant and fundamental change (Moss & Emonds, 2003). In addition, the advancement of the natural sciences has been intimately linked to the development of new and better measurement tools, but measurement in the social sciences remains relatively poor (Chattoe, 2002). Although these differences suggest that good natural science may differ in some respects from good social science, both should reflect directly observable data as closely as possible. Changes, or scientific revolutions, are necessary for the advancement in both the natural and social sciences.

The evolution of the scientific processes to explain observed phenomena is one paradigm perspective held among scientists. To better understand the behavior of all human beings, social science researchers need to appreciate the memory and experiences of the individual, but be able to understand and comprehend how individual minds relate to other human beings. Social scientists must look beyond what is happening in one

segment of the population to identify the common characteristics that shape human beings. Social scientists can take a leading role in uncovering the causes of a phenomenon, test them in a systematic manner, and identify which factors can be predicted (Cacioppo, Semin, & Berntson, 2004). Carefully constructed theories guide a better understanding of the nature of behavioral phenomena more concisely and directly.

The body of knowledge contains all of the information that has been agreed upon by scholars and educators who contribute significantly towards our understanding of a particular field of study. Whether work occurs in the natural or social sciences, scholars interested in advancing their fields should be able to specify good reasons to contribute to the body of knowledge and criteria for determining if their work merits inclusion. Their first step should is to define the body of knowledge in the discipline in which they are currently working. According to McGrath, Martin, and Kulka (1985), knowledge comes about due to the "convergence of findings derived from divergent methods" (p. 109).

The author's assumptions align with the positivistic approach in social science research. Knowledge is observed in the natural environment and it is the researcher's obligation to obtain this knowledge by discovering the relationships among the various elements involved in a phenomenon and the factors that cause an effect to occur. The researcher is not immersed in the data, but instead separates himself or herself from the phenomenon and allows theory to guide the research questions and methodology most appropriate for determining the various factors that cause a specific effect.

Conceptualization and Operationalization of Constructs

The research process in the positivistic perspective begins with the construction of good and necessary research questions that need to be explored. After reviewing the literature related to the phenomenon and the theoretical foundation being explored, the researcher identifies the gaps in the literature by forming clear and concise research questions to be tested empirically. These research questions will guide the researcher in determining the independent variables, moderators and mediators, and dependent variables relevant to the particular phenomenon being researched.

Once the specific variables and research questions have been determined, the next step in the research design process is to conceptualize and operationalize the main constructs involved. For example, Mukherjee and Balmer (2007) described the process of forming a stronger theoretical basis for their field by pursuing the following steps:

> First, the theory of corporate branding must contain a systematically related set of statements, including some law like generalizations that are empirically testable. Second, the theory of corporate branding must increase scientific understanding through a systematized structure capable of explaining and predicting this phenomenon. (p. 18)

Theories are not only statements providing guidance for testing these law like generalizations through empirical testing, but they also provide better understanding the interactions and relationships for each of the concepts involved in the phenomenon. A good theory requires a "fully explained set of conceptual relationships" (Wacker, 2008, p. 7). This requires a more precise and limited set of criteria than those used to simply

define any theory. In other words, in addition to providing definitions, domain, and predictions, a good theory must do more. Constructs that are part of the theory must be clearly defined and referenced. A construct is "a term specifically designed for a special scientific purpose" (Peter, 1981, p. 134). Constructs need to be aligned with a theory to make sense (Daft, 1985). Researchers should be consistent and direct with definitions of constructs used in their theory. A researcher needs to be aware of how others have defined and described various constructs, but then they need to define the construct themselves and explain how they are going to use it in their research study. In this dissertation, the author has outlined how other researchers defined the various constructs in the theoretical model (crisis communications, social media, message source, message reliability, and food safety).

Once researchers have defined each construct, it is necessary to address both the systematic (what the construct means relative to the theory) and observational meanings (how it is perceived in the real world) attached to the construct (Peter, 1981). Failure to do so can lead to confusion about the meaning of each construct, and could impact how the scientific community will perceive the study and its credibility. To avoid these problems, Wacker (2008) recommended that formal conceptual definitions should be "unique, conservative, and short" (p. 8). The importance of this starting point cannot be underestimated, as the advancement of science can only proceed when there is an appropriate language for talking about it (Bunge, 1967). Without clearly defined constructs, the step of measuring and observing phenomena will only lead to frustration.

In addition, researchers exploring a specific phenomenon must connect the

conceptual understanding of the phenomenon to ways of physically and scientifically testing these concepts in the environment. Cacioppo et al. (2004) pointed out that theory is an "abstraction that resides in the conceptual domain, whereas scientific operationalizations, experiments, and data are concrete and exist in the empirical domain," (p.215). Understanding how constructs have been conceptualized in the literature and among other researchers is important, but the next step in the research process is to formulate items that measure these intangible concepts in a systematic, organized, and unbiased manner.

Specific Constructs

Several specific constructs have been conceptualized and operationalized for this dissertation. During several steps of the research design (focus groups, pilot study, and experiment), the researcher provided the participants with the definitions of each of constructs. However, the researcher also explored each variable in detail with participants in the focus groups to enhance the overall conceptualization of these variables for the experiment stage of the dissertation.

Food safety was selected as the type of crisis setting for this dissertation. Food safety is the perception that food is safe and nutritious, along with an understanding of the risks and consequences of consuming unsafe food (Verbeke, Frewer, Scholderer, & DeBrandander, 2007).

This dissertation was based on the Theory of Planned Behavior (TPB; Ajzen, 1991), and therefore incorporated the key constructs of this model. According to the TPB, *behavioral intention* is the immediate precursor of the actual performance of the

behavior, and is in turn predicted by attitudes, subjective norms, and perceived behavioral control (Ajzen, 2002). *Intentions* are the "motivational factors that influence a behaviour and to indicate how hard people are willing to try or how much effort they would exert to perform the behaviour," (Ajzen, 1991, p. 181).

Attitudes towards a behavior are determined by a combination of *behavioral beliefs* and *outcome evaluations* (Ajzen & Fishbein, 1980). An attitude "represents a summary evaluation of a psychological object captured in such attribute dimensions as good-bad, harmful-beneficial, pleasant-unpleasant, and likable-dislikable" (Ajzen, 2001, p. 28). In addition, attitudes are:

> A person's overall evaluation of the behaviour. It is assumed to have two components which work together: beliefs about consequences of the behaviour (behavioural beliefs; e.g. 'referring the patient for an x-ray will decrease future consultations') and the corresponding positive or negative judgments about each these features of the behaviour (Francis et al., 2004, p. 9)

Behavioral beliefs describe the likely consequences of a behavior, while outcome evaluations describe the subjective probabilities that performing a behavior will lead to a particular consequence. *Subjective norms* are judgments of the amount of pressure one feels from significant others to comply with normative beliefs. Subjective norms are conceptualized as:

> A person's own estimate of the social pressure to perform or not perform the target behaviour. Subjective norms are assumed to have two components which

> work in interaction: beliefs about how other people, who may be in some way important to the person, would like them to behave (Francis et al., 2004, p. 9)

Subjective norms could be measured with items specifically such as looking at the impact of social influences that are important to an individual "People who are important to me think I (should follow this food safety message)," items specifically looking at the impact of these influences if the individual if chooses not to comply with these messages "People who are important to me would (disapprove of my complying with food safety message / approve of intention to follow food safety message)," or if these individuals feel that these influences are a strong factor in making the decision in following the food safety recommendation "People who are important to me want me to follow food safety recommendations (strongly agree/strongly disagree)," and "I feel under social pressure to follow food safety recommendations (strongly disagree/ strongly agree)" (Armitage & Conner, 1999 , p. 39). Subjective norms relate to significant reference groups, such as friends and family, that might influence an individual's intention to perform a behavior. In turn, subjective norms are highly correlated with the product of normative beliefs and motivation to comply (Ajzen & Fishbein, 1980).

Perceived behavioral control describes how easy a person thinks it will be to perform a behavior. Perceived behavioral control is determined by control beliefs, which involve an understanding of the factors that facilitate or hinder performance of a behavior, multiplied by the perceived power of a control factor relevant to performing the target behavior (Ajzen, 2001). Perceived behavioral control will be measured by asking the participants to evaluate the amount of control they have in relation to external and

internal barriers (Ajzen, 2002; Cooke & French, 2008). Food safety will be conceptualized as "the opposite of food risk, i.e. as the probability of not contracting a disease as a consequence of consuming a certain food" (Grunert, 2005, p. 381).

Message source served as an independent variable in this dissertation. *Professional content* is created by recognized experts and appears in primary sources. *User-generated content* is created or shared by individuals who would formerly be viewed as consumers of media, and it often appears in secondary sources. In other words, user-generated content is information created by individuals who are not affiliated with expert organizations that appears in social media (ex. blogs, social networking sites, etc) platforms. An example of a user-generated content would be a link shared on the social networking site Facebook or a blog describing work done by a scientist.

Message reliability served as another independent variable analyzed in this dissertation. The impact of reliability on behavioral intention was examined by differentiating between crisis messages containing confirmed or unconfirmed information. Other constructs are new to this dissertation and will require especially careful analysis. *Confirmed information* in this study will be defined as information that has been validated by a reliable and trustworthy source of information. An example of confirmed information would be a list of recalled food items from the CDC. *Unconfirmed information* will be defined as information available to relevant audiences that has yet to be confirmed by a reliable and trustworthy source (e.g. CDC). An example of a message containing unconfirmed information, regardless of source, would be a statement that a crisis might be occurring, but further information is needed. A

confirmed message has more detailed information about a food safety crisis with specific action steps to be taken, whereas an unconfirmed message is not specific or certain in terms of the severity of the crisis situation or recommendations for action steps.

Relevance and Rigor

Once the constructs of the theoretical model are carefully defined, researchers can turn their attention to issues of relevance and rigor, which have important implications for the choice of methodologies. To determine whether or not the current study fits the criteria for relevance and rigor, the researcher will first examine how effective research is viewed in the social sciences.

Criteria for the relevance of an individual study or theory can be built from a discussion of domain. A domain specifies when and where a theory can be applied (Wacker, 2008). The best research features generalizability and abstractness. Generalizability means that the theory or study findings apply to widely diverse populations, rather than narrow segments of a population. Abstractness occurs when a theory or study is not restricted to particular times and places. Grand theories, the ultimate goal of theory building efforts, are free of restrictions of time and place (Osigweh & Chimizie, 1989).

Generalizability is frequently a function of the sampling technique used by the researcher. It is rarely possible to include entire populations in research, so generalizability is usually imperfect to some degree. Researchers can compensate for this inherent weakness in generalizability by being very specific in describing the important

features of their samples (Mitchell & James, 2001). Generalizability is also important to the concept of external validity, which will be discussed in a later section of this paper.

Another aspect of relevance is the applicability of the findings. The study must be analyzed to see if the particular phenomenon of interest is important to the discipline, and to determine how well the constructs are conceptually developed and explained (Ozanne, Fern, & Yadav, 1989). Scholars and practitioners reading the research study need to be convinced that this study is using a methodology that is relevant to the appropriate theories, and that evidence will emerge that either supports or does not support the theory.

Rigor means that the researcher uses the appropriate research tools necessary to meet the goals of the study (Ryan & Bernard, 2000). Rigor is especially important in determining a methodology, where researchers need to take time to make sure that their research design is complete and that they answered all of the questions and hypotheses that they wish to answer (Varadarajan, 2008).

The current study combines both qualitative (focus group) and quantitative (experiment) methods. Approaches to relevance and rigor apply to both quantitative and qualitative methods, but in slightly different ways. Mentzer and Flint (1999) suggested that quantitative studies need to be evaluated to make sure that they have "theoretical logic, reliability, pretests of surveys, and statistical appropriateness," while qualitative studies need to be evaluated for having "detailed and thick descriptions, a neutrality towards findings," and an approach that sees "inquiry as non-manipulative, encompassing a lack of predetermined outcomes" (pp. 9-10).

Addressing Reliability and Validity Issues

Research studies must address both reliability and validity issues in their evaluation of the phenomenon of interest. Reliability can be defined as "the correlation between a measure and itself" (Peter, 1981, p. 136). Peter (1979) stated that reliability can also refer to "the degree in which measures are free from error and therefore yield consistent results" (p. 6). Researchers can use several tests to make sure that a study is reliable, including test-retest reliability (using the same measurements and sample as the first study for the second one, but occurring at a different point in time) and split-half reliability testing, where the sample is split into two groups and analyzed to compare their responses for any correlations (Peter, 1979).

The researcher also needs to address the issue of validity in their methodology sections to be able to state their findings with confidence (Mentzer & Flint, 1997). Validity refers to the strength of a study's conclusions. Validity, like reliability, can take several forms. External validity pertains to the ability to generalize the findings of a study (Tedeschi & Linkskold, 1976). External validity determines if the "causal relationships should be generalized to and across different measures, persons, settings, and times" (Calder, Phillips, & Tybout, 1982 , p. 240). One way to address the issue of external validity in a research study would be to implement the study in different ways, such as using a different measurement tool on the same population, or looking at the phenomenon in another location, or even using the same study on a different audience group to see if the phenomenon was consistent across all variables (Mentzer & Flint, 1997).

Internal validity refers to the ability to determine if a causal relationship exists between constructs (Calder, Phillips, & Tybout, 1982). In other words, can we draw conclusions about causal relationships between independent and dependent variables? Many errors can impact the internal validity in a research study, including maturation, measurement error, and history (Tedeschi & Linskold, 1976). Other threats to internal validity include instrumentation, which includes what tools were being used in the study, and selection which includes how the individuals in the study were selected (Mentzer & Flint, 1997).

Conclusion validity refers to the accuracy of the findings of a research study. Does the author make appropriate inferences about causality that are justified by the methodology and statistical analyses? Construct validity, as defined by Churchill (1979) is "most directly related to the question of what the instrument, trait, or concept is in fact measuring" (p.70). Do the constructs measured in the study reflect a more abstract, general reality? This is a key consideration for determining whether a study or theory contributes to the body of knowledge. It is not helpful if a construct or relationships between constructs can be demonstrated in the artificial setting of an experiment without being extended and applied to some aspect of the real world.

If the instrument being used is not actually measuring the concept discussed in a literature review, this could raise concerns among others in the research community. It is important for researchers to demonstrate that the measurement tool used to analyze a phenomenon actually was measuring what it was designed to measure. Inter-judge validity needs to be addressed in research studies due to the fact that there is always a

chance that researchers may have a bias against or for a particular hypothesis, and this may impact the results of the study significantly. Other researchers should be able to replicate the study by following the same methodological procedures to decrease this risk.

OVERVIEW OF METHODOLOGY

The methodology best be suited to the current research questions is the empirical experimentation approach to research where the researcher is able to control and predict the causes and effects in the phenomena being studied will further contribute to the body of knowledge in the social sciences. Cohen, Manion, and Morrison (2007) stated that assumptions in empirical science include experience, classification, quantification, discovery of the relationships, and approximation of the truth. The goal of experimentation is to control everything in the environment except for the manipulations that are enforced by the researcher (Keppel & Wickens, 2004).

Prior to the implementation of all procedures, approval for the proposed methodology was obtained from the University of Tennessee, Knoxville Human Subjects Institutional Review Board (IRB). A copy of the approved submission can be seen in Appendix F.

A flow chart of the research procedure for this dissertation, illustrated in Figure 3.1, shows two separate research steps used to address the main research objectives: (1) focus groups were conducted as part of the elicitation process required for constructing a questionnaire consistent with the TPB (Fishbein & Ajzen, 1980; Ajzen, 2002; Francis et al., 2004), and (2) an experiment was superimposing a two-by-two design (message

source x message reliability) over the intention model of the TPB. This design generated four scenarios (user-generated content—confirmed information; user-generated content—unconfirmed information; professional content—confirmed information; professional content—unconfirmed information), illustrated in Table 3.1. Consistent with the TPB, the questionnaire included items assessing relevant attitudes, subjective norms, perceived control, and subsequent intent to comply with a crisis message.

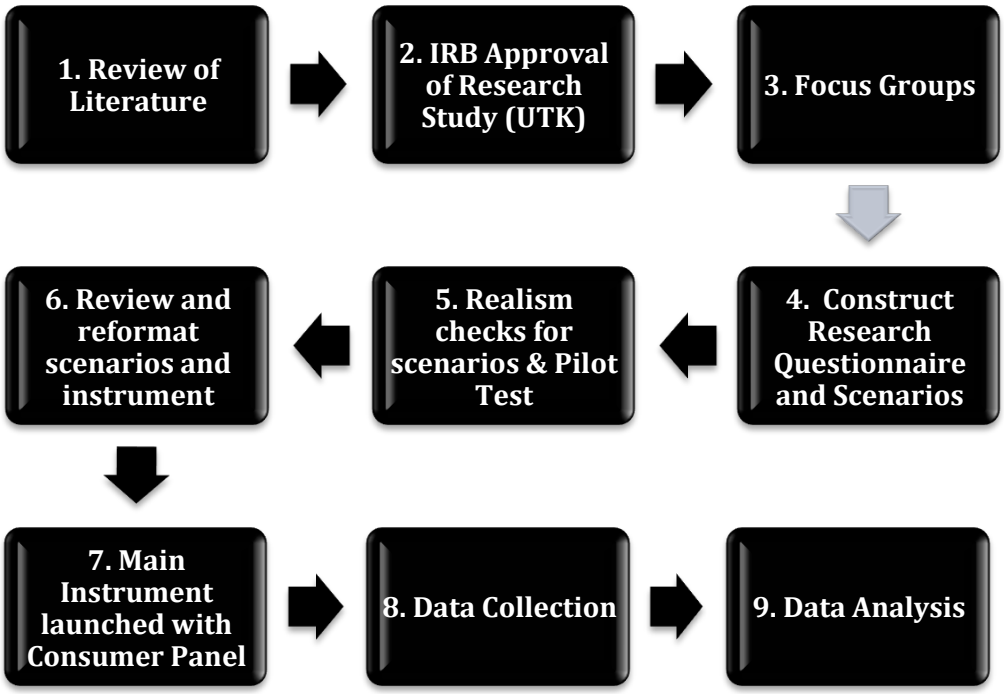


Figure 3.1 Research Procedure Flow Chart

Table 3.1 Four Experimental Scenarios

		Message Reliability	
		Confirmed Information	Unconfirmed Information
Message Source	Professional	**Scenario 1:** Professional--Confirmed	**Scenario 4:** Professional--Unconfirmed
	User-Generated	**Scenario 2:** User-generated—Confirmed	**Scenario 3:** User-generated--Unconfirmed

The construction of the questionnaire required completion of the following tasks: defining the population of interest, defining the target behaviors (food safety behaviors), determining measures for the participants' intention to comply with a safety message, identifying attitudes relevant to the target behavior, determining the most influential people who might approve or disapprove of the target behavior, and discovering any barriers that will make compliance with a message challenging for participants (Francis et al., 2004). To obtain the necessary information for the construction of the questionnaire, elicitation questions were posed to three separate focus groups.

FOCUS GROUPS

Three focus groups to help construct the research instrument used in the experiment phase. Focus groups were used to create the research instrument by asking elicitation questions modeled after the framework specified by Francis et al. (2004) to identify the important attitudes, norms, traditions, and personal reference groups that guide a particular intention, which in this case would be the intent to comply with a crisis message related to food safety.

Participants

A total of twenty-four people participated in the three focus groups. Two focus groups had seven participants, and a third had ten participants. The groups are described in the order in which they were conducted.

Focus Group One The first focus group had seven participants (three males, four females) who ranged between the ages of 27 and 81. Highest educational attainment of the group members included high school (N=2), bachelor's degrees (N=2), graduate degrees (Master's; N=2), and doctoral degree (PhD; N=1). Two participants were homemakers and two participants were retired. One participant was working as a professor at an academic institution, while another was an engineer. The final participant recently completed an undergraduate degree and is currently unemployed.

Table 3.2 Demographics of Participants in Focus Group One

Participant	Gender	Age	Education	Occupation
1	M	48	2	Engineer
2	F	58	4	Professor
3	F	27	3	Homemaker
4	F	50	1	Homemaker
5	M	25	2	Unemployed
6	F	81	1	Retired
7	M	58	3	Retired

Focus Group Two The second focus group had ten participants (1 male, 9 females) who ranged between the ages of 23 to 39. Highest educational attainment ranged from having an undergraduate degree (N=6) to a master's degree (N=4). Occupations of the participants included graduate student (N=5), librarian (N=3), technology worker (N=1), graphic designer (N=1), and customer services (N=1).

Table 3.3 Demographics of Participants in Focus Group Two

Participant	Gender	Age	Education	Occupation
1	F	23	2	Librarian
2	F	35	2	Graphic Designer
3	F	30	2	Graduate Student / Assistant
4	F	39	3	IT Technologist
5	F	24	2	Graduate Assistant
6	F	35	3	Librarian / Assistant Professor
7	F	23	2	Graduate Student
8	F	31	3	Library Supervisor
9	F	32	3	Graduate Student
10	M	34	2	Customer Service

Focus Group Three Seven individuals (four males, three females) participated in the third focus group. Compared to the other focus groups, this third focus group was slightly older on average (average age was 54.4 years old), and included individuals who were farmers (N=4) or who participated in a local farmer's market. Two individuals owned a dairy farm, and two other participants specialized in chickens, tomatoes, peppers, and shitake mushrooms. Consequently, the knowledge of food safety in this group was relatively more sophisticated and expert compared to the other two focus groups.

Table 3.4 Demographics of Participants in Focus Group Three

Participant	Gender	Age	Education	Occupation
1	F	65	3	Store Owner
2	M	56	2	Self-Employed / Farmer
3	F	59	2	Farmer
4	F	53	2	Dairy Farmer
5	M	60	2	School Bus Driver
6	M	33	4	Trial Attorney
7	M	56	3	Dairy Farmer

Materials

The following materials were used for conducting the focus groups: a digital tape recorder and refreshments (used as incentives for participants). Based on the guidelines for developing an elicitation study for a TPB experiment (Francis et al., 2004), the ten open-ended questions in the following discussion guide were posed to focus group participants:

1. What does the term "food safety recommendation" mean to you? Can you think of an example of a food safety recommendation that you heard or saw recently?
2. What do you believe are the *advantages* of following a food safety recommendation?
3. What do you believe are the *disadvantages* of following a food safety recommendation?
4. Is there anything else you associate with your own views about following a food safety recommendation?

5. Are there any individuals or groups who would *approve* of your following a food safety recommendation?

6. Are there any individuals or groups who would *disapprove* of your following a food safety recommendation?

7. Is there anything else you associate with other people's views about following a food safety recommendation?

8. What factors or circumstances would enable you to follow a food safety recommendation?

9. What factors or circumstances would make it difficult or impossible for you to follow a food safety recommendation?

10. Are there any other issues that come to mind when you think about following a food safety recommendation?

Procedure

Data collection was conducted by recording and transcribing each focus group discussion. To ensure confidentiality, the researcher assigned each person a number in the transcripts, such as Participant #1, Participant #2, etc. The researcher also took notes during each focus group. The recordings will be destroyed immediately after the completion of the study to protect the participants and their identities.

Each session began with an explanation and signing of the informed consent form. Demographic and background information about social media, food safety, and other defining characteristics of the participants (ex. where they get news / information, education level, location, perceived control over food safety) was collected via a short

questionnaire, which can be seen in Appendix A. Steps outlined by Francis et al. (2004) to determine the overall attitudes, subjective norms, perceived behavioral control, and intention in relations to food safety were followed. At the conclusion of each focus group, the researcher asked for any additional comments regarding food safety and social media. Each focus group session lasted between one-half hour and one-and-one-half hour.

QUESTIONNAIRE DEVELOPMENT

The construction of the main research instrument was divided into three steps: 1) scenario development, 2) identification of factors affecting intention to comply with messages related to food safety crisis, and 3) demographic information.

Francis et al. (2004) recommended the development of specific scenarios that are at least 80 to 100 words in length. For the purposes of this dissertation, scenarios must provide the participant with information regarding the situation (food safety recall), message source (user-generated versus professionally generated), and message reliability (confirmed or unconfirmed).

Francis et al. (2004) recommended that the target behavior, in this case compliance with a food safety message, be defined in terms of its Target, Action, Context, and Time (TACT). For the current research, Target is defined as the general public of the United States. The Action is defined as not buying contaminated American cheese products. The Context is specified as "your local grocery stores," and the Time is immediate. In constructing a TPB questionnaire, it is essential that all items "refer to the same level of generality" (Francis, et al., 2004, p. 8). For example, based on focus group

statements, food recalls involving local stores were viewed quite differently than food recalls that were more general.

Information from the focus groups informed the choice of Action and Context used in the scenarios developed for this dissertation. Dairy products, and cheese in particular, were the foods most frequently mentioned by focus group participants in the context of contamination. Local contamination, as in products found in local stores, appeared to be more salient to focus group participants than more general food recall notices.

To construct measures of general intent, Method 2: Generalized Intention from Francis et al. (2004, p. 11) was adapted to the context under study in this dissertation. Francis et al. recommended including three items for this construct ("I expect to…," "I want to…," and "I intend to…."). All intent items used a 7-point Likert scale representing a range from "strongly agree" to "strongly disagree." Following food safety recommendations was viewed among the focus groups as a favorable choice to make. For example, P6 (FG#1) stated following "[food safety] recommendations just makes good sense. To eliminate any problem somebody might have. Being allergic to that…poison…unclean….whatever, if it's oranges and tangerines with wax on them, I always wash them real well."

Additional questions focused on direct measurement of attitudes, including both instrumental (determines whether the behavior achieves the action desired for the participant) and experiential (how it makes the participant feel in regards to performing the behavior) items (Francis et al., 2004). These items were formatted in a 7-point Likert

scale with two words that conceptualize the good – bad scale that is appropriate with the topic at hand. The stem selected for these items was "Overall, I think that not buying American cheese is…." No input from the focus groups was necessary to select the adjectives.

Measuring behavioral beliefs and outcome evaluations does require guidance from the focus groups. The focus group discussion guide (Appendix B) included questions about the advantages and disadvantages of following a food safety recommendation. These questions elicited responses that were used to construct behavioral belief items, such as "Not buying American cheese makes me more anxious about food safety." P4 in the second focus groups related that one of the disadvantages of food recalls is that they make her feel "paranoid." This sentiment appeared frequently in the groups' discussions. For example, P2 (FG#2) mentioned that "I think sometimes they seem like they're kind of going overboard, like we're a really resilient species so we don't die that easily, and they say if you don't do all of these very obsessive-compulsive things, you're going to die. But when I go to a restaurant, I want them to follow all of those obsessive-compulsive things." P10 and P6 (FG#2) also mentioned that their mothers or friends would consider themselves to be paranoid in relations to food safety recalls. These items both used 7-point Likert scales, with the behavioral belief response choices of likely—unlikely, and the respective outcome evaluations with choices of extremely undesirable—extremely desirable.

Other questions focused on subjective norms based on food safety compliance, using a 7-point Likert Scale asking the participants if they should act / not act based on

what their friends or family members think. Focus group input was helpful in identifying these important reference groups. For example, P8 (FG#2) mentioned that her mother "warns me about them, constantly writes to me about them, tells me about it – but they don't follow it themselves, because they get their eggs from the neighbor who has chickens, or from my grandfather, who has chickens. Because we live in the countryside, so… so they don't get spinach either since it is imported.. so in [location of hometown], it is very expensive, so you don't get those things." Additional focus group input suggested that the schools were possible reference groups, as they now enforce rules about the contents of snacks that children can bring, even for their own consumption. However, schools were not included in the main instrument, as this influence is likely to affect a relatively small segment of the general population—parents of school-aged children.

Finally, items to measure self-efficacy (how difficult it would be to perform the behavior) and controllability (how much personal control an individual has in terms of performing the behavior in the specific situation) were constructed. No further input from focus groups was necessary to construct these items, which took the form of "For me to stop buying American cheese is….easy/difficult."

The last section of the instrument asked the participants to supply demographic information (ex. gender, age, education, sources of information, and use of new technology). The complete instrument can be seen in Appendix D.

REALISM CHECKS ON SCENARIOS

Based on the analysis of the focus group data, four scenarios were constructed as described above. Realism checks for these scenarios were conducted to determine

perceived realism of each scenario based on the procedure described by Dabholkar (1994).

Participants

Twenty-six undergraduates enrolled at a large public university participated in the realism check for the four scenarios designed for the experiment instrument. Eighteen of the students were underclassmen, and the remaining eight students were upperclassmen. The students represented a range of majors, including journalism, theatre, industrial technology, industrial engineering, business, architecture, psychology, computer science, biology, animal science, English, materials engineering, aeronautical engineering, chemistry, genetics, and kinesiology.

Materials

Four different versions of a handout were prepared, with four scenarios presented in a different order in each form. Following each scenario, participants completed two seven-point Likert scales (1 being "Strongly Disagree" and 7 being "Strongly Agree"). The first scale stated "The situation described was realistic," and the second scale stated "I had no difficulty imagining myself in the situation" (Dabholkar, 1994). Four additional handouts were prepared with one scenario on each and room to take notes.

Procedure

Each participant completed one of the forms with the four scenarios. Next, participants listened to a short presentation on the purposes of the research and the goals of the scenarios (the manipulation of confirmed and unconfirmed messages and professional and user-generated messages). Participants were divided into four

discussion groups, and each group worked in detail on a separate scenario. After 15 minutes of discussion, each group presented its suggestions for improving the assigned scenario for further discussion with the whole group.

Results of Realism Check

Mean responses to the two scales for each of the four scenarios are shown in Table 3.5.

Table 3.5 Results of Realism Checks for Scenarios

Scenario	Realistic	Can Imagine Self
Confirmed—Professional	5.583	5.375
Confirmed—User-Generated	4.8	4.84
Unconfirmed—User-Generated	4.542	4.708
Unconfirmed—Professional	5.36	5.12

The mean overall realism score for all four scenarios was 5.02 and the mean overall imagine score was 5.01. The professional source scenarios appeared to be more realistic and more easily imagined than the user-generated source scenarios, although all scenarios scored above neutral (4).

The range of results (4.542 to 5.583) is low relative to the average realism rating of 6.0 that Dabholkar (1994) found on the scale she developed, which was used in this research. On the basis of feedback from the participants, several sources of lower realism were identified. The original scenarios used the "mother" as the person sharing information on social media, primarily due to comments in Focus Group Two. Participants noted that this might work for students, but probably would not work for a representative sample of people across age groups. "Mother" was changed to "friend" for the final version of the scenarios. In addition, the original user-generated scenarios made

reference to a "hashtag," but the participants reported being unfamiliar with that term, and believed it reduced the realism of these scenarios; thus, the hashtag term was removed. For the main experiment, the researcher took these and other comments into consideration in revising the scenarios to fit these suggestions.

A closer comparison of the current realism checks and those conducted by Dabholkar (1994) revealed further possible reasons for the lower realism scores in this study. All 26 participants in the current study read and rated a single version of each of the four scenarios simultaneously, whereas Dabholkar used new sets of students to read similar versions of scenarios, allowing for the selection of the simplest version. The ability of participants to compare scenarios might have produced different responses. In addition, Dabholkar (1994) included instructions to "avoid intellectually or socially desirable responses" (p. 106) that were not included in the current study.

No pre-determined criteria for realism existed, and it was the opinion of the researcher that the realism scores that were obtained were acceptable. In future research using these methods, the researcher would repeat the realism checks following any revisions made to the scenarios and in the pilot and main experiments.

PILOT TEST OF RESEARCH INSTRUMENT

Dillman (2000) suggested that at least 20 to 50 participants should participate in a pilot study of a new research instrument to determine whether all of the items were correctly operationalized, the research instrument was clear and concise, and to assess the time required for completion. By conducting a pilot test, the researcher was able to make necessary changes before implementing the main experiment with a consumer panel.

Participants

One hundred thirty undergraduates enrolled in a large, public university completed the pilot instrument. The participants' ages ranged from 18 to 25 years. Thirty-seven participants were male, and 93 were female. Once again, the participants reported majoring in a wide variety of disciplines. Ninety-three percent of the participants reported current, active use of social media.

Materials

Each participant was randomly assigned to view one of the four scenarios, shown below, and then answered the same full questionnaire, which was constructed using the results of the focus groups according to the procedure outlined by Francis et al. (2004). A copy of the final instrument can be seen in Appendix D.

All measures related to the TPB took the form of 7-point Likert scales. In this procedure, the behavior of interest is defined first "in terms of its action, target, context, and time elements" (Fishbein & Ajzen, 1980, p. 261). For the current purpose, this intention statement took the form of measures such as "I intend to stop buying American cheese" or "I expect to stop buying American cheese products."

Next, a set of attitudes, subjective norms, and perceived control measures were defined. The attitude question, "Overall, I think that not buying American cheese products is…" will be asked with five different evaluative adjective scales, such as pleasant-unpleasant. Subjective norms will be evaluated by questions such as "Most people who are important to me think I should/should not buy American cheese

products." Perceived control was measured by questions such as "For me to stop buying American cheese products is easy/difficult."

Additional measures for behavioral beliefs, outcome evaluations, normative beliefs, motivation to comply, and control beliefs were developed using focus group feedback. For example, participants were asked to respond to normative belief items such as "My family thinks I should avoid buying American cheese products" and later to associated motivation to comply items such as "My family's approval of my food preparation habits is important to me."

Additional demographic questions assessed participant variables including gender, age, education, occupation, extent of social media use, and ownership of technology (e.g. owning a smart phone or iPad).

The questionnaire was preceded by one of following four scenarios:

Scenario 1: Professional--Confirmed

You read a news bulletin on the Centers for Disease Control and Prevention (CDC) website about a recall for products containing contaminated American cheese. The CDC provided a list of products containing the contaminated American cheese, which includes brands sold at your local grocery store. The CDC bulletin recommends that you not purchase the cheese products on the list until further notice.

Scenario 2: User-generated--Confirmed

You read a blog post that a friend linked on your Facebook page about a recall for products containing contaminated American cheese. The list of products containing the contaminated American cheese includes brands sold at your local grocery store. Under

the link, your friend comments that you should not purchase any products containing American cheese on the list until further notice. Your friend's post has been shared and liked by several of your family members and friends on Facebook.

Scenario 3: User-generated--Unconfirmed

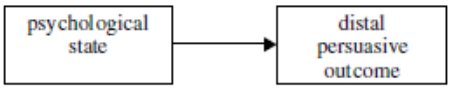
You read a blog post that a friend linked on your Facebook page about people getting sick after eating American cheese. The blog author said it is likely that the contamination caused by an ingredient in cheese products sold at most local grocery stores in your area. Under the link, your friend comments that you should not purchase any products containing American cheese until further notice, and that an investigation is underway. Your friend's post has been shared and liked by several of your family members and friends on Facebook.

Scenario 4: Professional--Unconfirmed

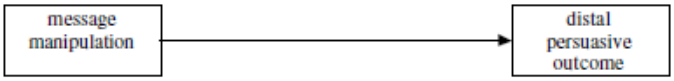
You read a developing news bulletin on the Centers for Disease Control and Prevention (CDC) website about people getting sick after eating American cheese. The CDC said it is likely that the contamination is caused by an ingredient in cheese products sold at most local grocery stores in your area. The CDC bulletin recommends that you not purchase any products containing American cheese until further notice, and that an investigation is underway.

According to O'Keefe (2003), the experimental design used for this dissertation is an example of a "Class II research claim: Effect of message variation on persuasive outcomes," (p. 254). Figure 3.1 lists the different class research claims outlined by O'Keefe.

Class I research claim: Relationship of a psychological state and persuasive outcomes



Class II research claim: Effect of a message variation on persuasive outcomes



Class III research claim: (a) Effect of a message variation on persuasive outcomes and (b) potential explanation via mediating psychological state

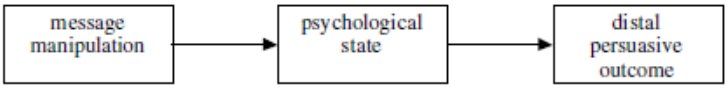


Figure 3.2 Three classes of research claim concerning persuasive message effects

O'Keefe argues that such research designs do not require message manipulation checks:

> …when the research question concerns the effect of a message variation on a persuasive outcome, no message manipulation check is required. The investigator will naturally want to be careful in creating the experimental messages, but the adequacy of the manipulation of the message property is not appropriately assessed by inquiring about participant perceptions of the message. (p. 257)

Consequently, the decision was made to not use any specific manipulation checks in the instrument. However, as also stated in the limitations section of this paper, use of manipulation checks would have been better to confirm that the experiment worked and might have contributed to greater effect strengths.

Procedure

Participants completed an informed consent form, and then completed the questionnaire. The procedure required about ten minutes to complete.

MAIN EXPERIMENT

After refining the research instrument based on the realism checks and pilot study results, the researcher made arrangements to collect data from a commercial consumer panel.

Participants

The participants for the main experiment were 400 individuals recruited by eRewards. Consumer panels are made up of individuals based on specific demographic information and lifestyle characteristics who have agreed to participate in various research studies (Pollard, 2002) and have been used extensively in marketing and consumer behavior research (Frank & Strain, 1972 ; Cadotte, Woodruff, & Jenkins, 1987). Consumer panels break out of the tradition and convenience of using college students as subjects for research studies, which has been a common practice in the behavioral sciences (Permut, Michel, & Joseph, 1976).

If the researcher were interested in how college students would react to a food safety crisis message appearing in different sources, this would be the sample to use. However, the purpose of this dissertation was to provide insight into how people in general respond to crisis messages on food safety based on message source and reliability. Future research can compare and contrast the reactions of different groups (consumer panel versus student panel) to these crisis messages; however, this is not the overall purpose of this particular dissertation. In addition, based on the literature review,

the researcher has reason to suspect that social media use, a central construct of this dissertation, will be very sensitive to age and education. Based on these reasons, the researcher chose to use a representative consumer panel.

A total of 400 participants completed the entire instrument. Two hundred twenty-two participants (55.5 percent) were male and 178 participants (44.5 percent) were female. The participants' ages ranged from 18 to 82 years, with an average of 42 years. One hundred and seven participants (26.7 percent) reported their highest educational attainment as a high school diploma, 162 reported having an undergraduate degree (40.5 percent), 100 reported having a graduate or professional degree (25 percent), and the remaining 31 participants chose "other." Two hundred sixty-one participants reported participation in social media (65.25 percent), while the remaining 139 reported no social media participation (34.75 percent).

Procedure

Providing incentives for the participants is crucial and relevant to successful survey responses (Dillman, 2000). The eRewards system provides non-coercive but effective rewards to participants. The participants were asked to review the informed consent form approved by the IRB in the designated website provided and reviewed by the researcher and eRewards before experiment implementation. Participants were randomly assigned to one of the four scenarios by eRewards, after which all participants completed the same set of questions. Random assignment reduces potential validity issues and the possibility that irrelevant factors influence experimental outcomes (Perdue & Summers, 1986).

The researcher had access to a dashboard to review findings from the experiment. The site was password protected and only the representative for the research study account and researcher had access to the data. Once the experiment was complete, the researcher was able to download the data from the online eRewards database in an SPSS file. Data will be maintained confidentially as described in the IRB document (Appendix F).

As in the case of the pilot study discussed previously, no explicit manipulation checks were incorporated into the main experiment instrument (O'Keefe, 2003).

DATA ANALYSIS

Analysis of Focus Groups

The focus group phase had two components: a questionnaire (see Appendix A) and responses to the interview discussion guide specified previously. The questionnaire provided demographic data and information about the participants' use of social media. Results of the questionnaire were evaluated using descriptive statistics. Using the recommendations of Francis et al. (2004), transcripts of the focus groups were evaluated for the purposes of constructing the research instrument for the main experiment as described previously. Specifically, responses by the focus groups regarding food safety, attitudes, subjective norms, and control beliefs were of particular interest.

Analysis of Pilot Study and Main Experiment

The researcher used commercially available statistical analysis software PASW18 to analyze the data collected from the participants in the pilot and main experiments.

Data from experiments based on the TPB typically make use of correlations, univariate ANOVA analyses, and multiple regression (Armitage & Conner, 1999; Francis et al., 2004). These analyses provide the researcher with insights into the different interactions and relationships between each of the variables in the theoretical model. Results with $p < .05$ were considered significant.

CHAPTER 4: RESULTS

This chapter presents a summary of the results of the three steps in this study: 1) focus group 2) scenario realism checks and pilot study, and 3) main experiment.

FOCUS GROUPS

The first step in the dissertation methodology was to conduct elicitation studies using focus groups formed by individuals representative of the population being explored. According to Francis et al. (2004), focus groups should be used to identify the following factors among populations of interest as well as developing and refining the research instrument: (1) the most frequently perceived advantages and disadvantages of performing the behavior, (2) the most important people or groups of people who would approve or disapprove of the behavior, and (3) the perceived barriers or facilitating factors which could make is easier or more difficult to adopt the behavior.

Demographic data for each of the three focus groups will be presented first, followed by an analysis of responses to the elicitation questions.

Focus Group One

Basic demographic features of the focus group participants (e.g., age, gender, education, etc.) have been summarized previously in the Methodology chapter under focus group participants.

Responses to the social media questions on the demographic questionnaire showed that five of the seven participants in the first focus group actively used social media. Four of the five participants used Facebook and YouTube, and two of them used Twitter. One participant used MySpace and Geolocation based applications (e.g.,

Foursquare). None of the participants used Flickr, Delicious, or any virtual reality sites (ex. SecondLife). Table 4.1 shows the amount of time spent by these participants on social media per day.

Table 4.1 Time Spent on Social Media by Participants in Focus Group One

Time on Social Media	Number (N)	Percentage
15 minutes or less	3	42.8
Between 1 and 2 hours	2	28.6
Between 30 and 60 minutes	1	14.3
Between 15 minutes and 30 minutes	1	14.3
More than 2 hours	0	0.0

The average length of time since joining Facebook for the relevant participants was 2.71 years, one year for Twitter, and 3.33 years for YouTube. One participant had used both Facebook and YouTube for six years, and another participant had participated in another online community for four years. The participant using Foursquare had only participated on that site for two months. Table 4.2 shows the types of social media activities used by these participants.

Table 4.2 Social Media Activities by Participants in Focus Group One

Social media Activities	Number (N=7)	Percentages
Interact and share information	4	57.1
Communicate with friends and family	4	57.1
Search News	3	42.8
Private Message	3	42.8
Post Videos	3	42.8
Post Photos	3	42.8
Post article	3	42.8
Check in	3	42.8
Professional networking	2	28.6
Search Information	1	14.3
Discuss online	1	14.3

Six of the seven participants owned a desktop computer, four owned laptop computers, four owned smartphones (e.g., iPhone or Blackberry), and two participants owned an iPad.

The participants agreed that food safety recommendations are clear and sensible, and they considered these recommendations to be good advice. Participant Six believed:

> *to follow recommendations just makes good sense. To eliminate any problem somebody might have. Being allergic to that…poison…unclean….whatever, if it's oranges and tangerines with wax on them, I always wash them real well.*

Several participants expressed the opinion that food safety recommendations were at times "going overboard." However, this opinion varied according participants' sense of control. The most common variable affecting control was where the food was prepared. Participant Two stated:

they seem like they're kind of going overboard, like we're a really resilient species so we don't die that easily, and they say if you don't do all of these very obsessive-compulsive things, you're going to die. But when I go to a restaurant, I want them to follow all of those obsessive-compulsive things.

Participants noted that food safety messages lacked consistency. Participant Four noted an example about the preparation of chicken:

they want you in certain recipes to bring things more to room temperature, but then they say never leave out your chicken for more than an hour or whatever it is, half an hour. Which one is right?

Participant Three expressed concern about being aware of food product ingredients. Participant Three, whose daughter was allergic to almonds and peanuts, said that raw ingredients were less of a problem for her than the ingredients of pre-packaged goods:

I mean, for an egg to get through that might have salmonella, worries me a lot less than if I bought some kind of baked good and it turned out it was made in a factory with nuts when it said it wasn't. Because for me, it's like she has any nuts, we go to the hospital. If we have an egg with salmonella, well, maybe we'll get sick maybe not.

Further discussion highlighted some of the challenges participants faced in attempting to comply with food safety messages, including convenience, trust in a food source, cost, and hunger. Participant Four stated that *"I think a lot of people are irritated*

with the allergies in the schools. They feel like there's not supposed to be peanuts in the classroom and you're supposed to wash your hands if you have peanut butter and jelly at lunch. A lot of parents are very irritated." Participant Three commented about trusting a food source, suggesting *"It's like when they have the USDA organic label now but if you go down to R….. Farms or something, they don't have that label, but you trust them that they're your neighbor and they're not putting junk on your vegetables that you don't want."* Participant Two pointed out another key component of compliance with food safety recommendations – price – and said that *"there are some people who don't know they can bring their eggs back and they think they have to toss them or something and they're going to say well, I'll take my chances."* Participant One said another factor affecting compliance with food safety recommendations is hunger – *"You're hungry. Yeah, I don't want to go back to the store. Like playing Russian roulette. Not getting sick is the main thing."* Participant Three agreed that *"if you eat one of the eggs out of the package and you're not dead, you'll probably just eat the rest."*

Participants identified family members and school officials as influencers for compliance with food safety recommendation messages. Participant Four reported that children's school snacks could not contain any foods that could cause allergic reactions. Participant Three stated that peanuts are not allowed at preschool, and shared:

> *if there's a kid in the school with a peanut allergy, they don't allow nuts in the classroom. Even though her classroom is nut-free, I still pack hers…the parents are supposed to take turns bringing snack, but I still pack her one because I don't really trust the other parents.*

Participants discussed the sources of information they used for food safety messages. The traditional media play significant roles in initiating mass responses by consumers to a food safety crisis (Böcker & Henning Hanf, 2000; de Jonge et al., 2010). Consumers are exposed to many sources of information about food hazards and crises information, including mainstream media, government, specific retailers and manufacturers of food products (de Jonge et al., 2010), and other consumer advocate organizations (Lobb et al., 2007). Participant Six mentioned first seeing the information about the egg recall crisis in a newspaper article, which in turn referred readers to their local food stores for further information. The primary source used by participants to search for information about the egg recall was Google. Participant Five stated that after searching for the information about the various recalls for eggs, he was able to obtain very complete and detailed information.

> *Well there were some brand names…it was like some other eggs….but Albertson's had its name on it. There were several different companies on the list. It had like 254 through 297 eggs had it.*

Participants mentioned obtaining information from niche online communities in addition to traditional media sources. Participant Three found information about the egg recall from an online *"mommy"* group. A member of the group posted the information and a link.

Participants reported paying more attention to local recalls than recalls that seemed more distant. Participant Three mentioned that if *"it's local, so someone posted it, usually when it's something I know the kids have probably had, I check it right away.*

But like with the eggs, it was so national, and I knew mine were from [LOCAL UNIVERSITY], so I just didn't even bother. Plus they don't even eat that many eggs." Participants noted that if a food contamination or food crisis occurred at a fast food chain, they would hope that it wouldn't affect their local fast food outlet.

Participants indentified several barriers to following a food safety recommendation. Being hungry, the perception of food still being good (e.g., scraping mold off cheese), and a perception that a food safety incident does not have local impact were some of the factors that would make it difficult or impossible to follow a food safety recommendation. The lack of education about how to cook your own food was another concern raised by the focus group. Participant Two observed:

> *I like the point you made earlier, too, [PARTICIPANT 4], about there being so much and I'm wondering…my students don't cook. At all. And I'm pretty sure they didn't see much cooking growing up apparently, and I don't think they know. How do you know all this stuff? If you don't know what food safety is, if you've never been taught, how do we learn that?*

Participants identified cookbooks and cooking shows as good sources for learning about food safety. The participants mentioned that at the beginning of each cookbook, there is usually a section discussing good food handling practices. Participant Three mentioned that cooking shows, like those on Food Network, show the chefs making a dish while sharing knowledge about food safety.

Additional issues arose in the first focus group that participants clearly associated with food safety recommendations: severity of the crisis and negative perceptions of

foreign food products. Participants viewed food recalls involving stomach aches as less important than food issues that could cause death, like food allergies. In addition, some participants voiced concerns about dependency on government regulation and enforcement of food safety.

> *With the labels, it drives me nuts because with the allergies, they only have to put it somewhere on the label in bold, so if they put contains nuts, they can put it in the ingredients with peanuts in bold, or they can put it at the bottom it contains….because there are like 12 allergens they put on. I always call companies because they're like oh we're not required to put it at the bottom as this may contain, we can just list it in the ingredients …you know it contains 35 ingredients and half of them are hydrogenated stuff and you have to read through the entire thing.* – Participant Three

> *I think we're very vulnerable to that kind of market pressure, too. It's like when you look at mad cow, which is really kind of in the past at this point knock on wood, but to do…to make the entire cattle industry do what they were supposed to do to avoid the you know very very low risk of mad cow disease—they were looking at the money, so we're kind of dependent on the government I think to regulate this, but it's clear that they don't, because stuff was still coming through the system that shouldn't have happened.* – Participant Two

I really don't know if the government's doing their job here. I know some people who don't eat meat and other things because I mean ground meat is the most disgusting like, it's ground at the factory, because you're getting bits of fifty different cows, and if one is sick, you know what I mean? It's all mixed up. They have a problem when they move the line too fast…they end up with basically guts in the meat. – Participant Three

Participants shared very negative perceptions of food from countries outside the United States. Participants Six and Four said that this was a deciding factor for them when it came to buying everyday food products:

The only thing is I don't like to buy fruits or vegetables that come from other countries because by the time they get here, you can't even peel the tangerines. They're supposed to be able to be peeled. The outside is so like leather. So I just make a point—if it's from out of the country, I don't buy it. – Participant Six

If you go to Trader Joe's, I always check the grapes, because imported grapes have a lot of pesticide on them… [PARTICIPANT 4'S DAUGHTER] will eat about 2 pounds of grapes at a time, so I try to get the ones from the US but you have to look at all the small tiny print at the bottom. – Participant Four

Focus Group Two

The earlier Methodology section on participants outlined demographics for Focus Group Two. All ten participants in this focus group were active on social media. All participants used Facebook (N=10), while nine were active on YouTube (N=9), six on Flickr (N=6), five on Twitter (N=5), three on the social bookmarking site Delicious (N=3), and three on other social media sites. These other social media sites included LiveJournal, Blogs, and LiveMocha. Average length of time participating on Facebook among the participants was four years, 1.22 years for Twitter, and 3.75 years on YouTube. Eight participants owned desktop computers, while all of the participants stated that they owned laptop computers. Seven participants had smartphones, but no one owned an iPad. Table 4.3 indicates the time spent on social media by participants in the second focus group. One participant reported spending between three to four hours a day.

Table 4.3 Time Spent on Social Media by Participants in Focus Group Two

Time on Social Media	Number (N)	Percentage
Between 30 and 60 minutes	5	50.0%
15 minutes or less	2	20.0%
Between 15 minutes and 30 minutes	1	10.0%
Between 1 and 2 hours	1	10.0%
More than 2 hours	1	10.0%

Table 4.4 indicates the types of social media activities used by the participants. Three participants provided activities not listed in the questionnaire: *"learning a new language," "communicating to the community on behalf of my job,"* and *"learn about*

others."

Table 4.4 Social Media Activities by Participants in Focus Group Two

Social media Activities	Number (N=)	Percentages
Post Photos	9	90%
Communicate with friends and family	9	90%
Professional networking	7	70%
Interact and share information	7	70%
Check in	6	60%
Private Message	6	50%
Search News	5	50%
Post Videos	5	50%
Post article	5	50%
Search Information	4	40%
Discuss online	3	30%

Participants identified several examples of food safety cases: the spinach recall, baby formula, dog food, tomatoes, and the egg recall in 2010. According to the participants, food safety messages seem to be more prevalent. Participant Three mentioned that food safety recommendations is *"easier to find out – you don't have to rely on what the big news sources are saying since it is spread in other ways."*

Participants identified the source of information as a very important consideration in following a food safety message. Participants Three, Five, and Six mentioned that if a company issuing a food safety message is large and established as opposed to a small farm, messages will be more likely to hit larger markets. However, Participant Three observed that it is *"not only the impact of the issue and how quickly the news gets out that something is bad, but also the impact that it has on society is needed to see how widespread it is."* Established food and health organizations, like the Centers for Disease Control and Prevention (CDC) and local news channels were identified as important

sources of information. Participants viewed one of the barriers to compliance with a food safety message as failure to obtain complete information from sources:

> *There is what the CDC is releasing, and then there is the news picks up and wants to tell you. Which could be an overarching story or leaving out the majority of the details, which makes me the consumer to have to look it up and it will take some time, and so….. where is the disconnect? Is the CDC releasing the correct information, or am I not getting it from any of the stations?* – Participant Three

Participants emphasized personal responsibility and a store's responsibility to sell safe products during a recall. Participant Seven noted that preparing your own food was more comfortable:

> *The green onion thing – I would still eat it during that time and if I was the one preparing the meal, then wash them personally, or cooked it personally – I would feel better about it. Even during the egg thing, I would still be cooking my eggs and not worrying about it as much or that type of thing. You know what you did, I mean… that is all you need to do.*

Understanding where a food recall is happening is important as well. Participant Six mentioned:

> *it is not too hard to investigate what the FDA is saying or if the items are only distributed in certain areas. You can go very easily and do a little bit of research and figure out, "Okay, it's not affecting 1) the brand that I am buying, it is not in this region, it is not affecting these products… then*

okay, I am safe to purchase eggs and such. A little bit of follow-up makes all the difference."

Sharing information via Facebook related to food incidents and recalls was also an emerging theme. Participant Nine noted that *"Google News ... is on my homepage, so I skip and scan through all of the articles and I look and I see 'Oh! There is a food recall,' and it is something and something that my friends are going to do so I share it on Facebook."* Family members had a clear role in communicating information related to a food safety crisis via social media, particularly on Facebook. Several participants mentioned their mothers shared information on their Facebook pages, which they would then share with their friends.

In terms of disapproving messages, people in the second focus group worried that people might think that they are paranoid for following recommendations. Too much information, being too saturated with the information, hunger, and not understanding some of the additives in the food being recalled are some of the challenges that would make it difficult to follow a food safety recommendation. The struggle of receiving numerous food safety messages can at times be overwhelming:

I mean, like a false alarm and they are coming so fast and one after the other and… I don't know what else to do. And like, how long do they last and they never have any expiration dates and well, if it is vegetables – well, they spoil fast. – Participant Eight

Severity of the food safety crisis also affects whether or not a recommendation will be followed. Participant Ten argued that *"I don't think that they use enough*

judgment on what constitutes as a health hazard. I mean, there is a recall, and then there is a recall that can kill somebody. Not everything that goes wrong is going to be deadly."

Participants identified inconsistent use of terminology as a potential barrier to compliance. Terms that have been used in organic or health products are often confusing. Participant Seven said *"you have to think about too what does it mean when companies label things as organic? Organic is different in different states. Organic from Colorado is different from organic from Oregon, and even in California."* Participant Eight argued that the only difference between organic and other food products was that you paid one dollar more.

Participants expressed a desire to obtain more information about the main terms used in food products (e.g., All-natural, organic, etc), as well as information related to some of the acceptable limits of food additives. Several participants mentioned veggie burgers specifically, and the acceptable limits of the additives in the products:

> *Well, I think that there is some things that you can find out about food that is disturbing that are not considered to be a food crisis. For example, on Facebook, I found out that veggie burgers have hexane in them, which is a gasoline byproduct in them and it is a normal component to them and I would consider something like that something I would like to know about because I eat those on a regular basis and I don't want that in my food. But that is not a food crisis, and so I am using that as an example –*

sometimes you find out that there are these really disturbing additives in food. – Participant Five

Better labeling and immediate access to information (by way of a QR code on the product or a food ingredient dictionary) were some of the suggestions that the participants had for addressing this concern.

Focus Group Three

This focus group was notable compared to the others, because it consisted of individuals actively involved in food production and sales. Age and education demographics for this group were summarized in the earlier Methodology section.

Table 4.5 Time Spent on Social Media by Participants in Focus Group Three

Time on Social Media	Number (N)	Percentage
Between 15 minutes and 30 minutes	4	57.2%
15 minutes or less	3	42.8%
Between 30 and 60 minutes	0	0.0%
Between 1 and 2 hours	0	0.0%
More than 2 hours	0	0.0%

Compared to the first two focus groups, not as many participants in Focus Group participated in social media. Three of the seven participants actively use social media (N=3), and the only site used was Facebook (N=3). Table 4.5 shows the amount of time spent by the participants, and Table 4.6 shows the types of social media activities in which they participants. Communicating with family and friends was the most popular use of social media among these participants (N=3). Five participants owned desktop computers, while four owned laptops, and two had smartphones. No one in the third focus group owned an iPad.

Table 4.6 Social Media Activities by Participants in Focus Group Two

Social media Activities	Number (N=)	Percentages
Communicate with friends and family	4	57.2%
Search Information	2	28.6%
Professional networking	2	28.6%
Post article	2	28.6%
Interact and share information	2	28.6%
Check in	2	28.6%
Private Message	1	14.3%
Post Photos	1	14.3%
Discuss online	1	14.3%
Search News	0	0.0%
Post Videos	0	0.0%

Family members were a significant source of influence in food choices for this group. Participant Six said:

> *I think that is true, but I think that it all does depend on family size. I would have to make some compromise if I have three children besides my husband and I. Now I have the choice to decide what I would like to buy, and I would rather go for quality instead of quantity.*

The participants voiced their concerns about the impact of consuming unsafe foods, and that a food crisis would not only impact the consumers' health, but it would impact entire industries as well. Participant One observed that farmers could:

> *sell every drop that we produce [dairy], but it is scary. We know what our product is, and we know what our bacteria count is so we are good when it gets picked up. But, if someone is not used to it, they might get sick. And they have the liability factor that comes into play again.*

Participants expressed concerns about how the media public reactions by choosing wording in headlines and articles:

> *Someone gets a stomachache – we are going to be the first person that they looked at since they ingested milk. Dairy products actually have bacteria in it, and we will be the first person that they contact and they headline will read "Person sick from drinking milk." It won't be "Person sick from drinking raw milk" but it will be "Person sick from drinking milk." That market crashes. It is such a liability and we would have to get at least a million dollar liability and it is sometimes more trouble than it's worth.* – Participant One

Participant Two noted that most people presently do not practice good health food safety practices. He observed:

> *people will not wash – I am as bad as anybody – I can not wash anything else that I buy since I assume that they are processed and ready to eat. An apple is an apple – I am not concerned with pesticides. I also do not have to worry about worms. Most people assume that everything is fine, and if there is anything else wrong with it – someone else will get sick from it before I do.*

Participant Three emphasized the importance of using words in the message that are at a level everyone can understand:

> *everything in the newspaper, television commercial to be communicated to*

target at a 11-year old. And that is the type - that is where most people – about 70 percent are, is at the or can read at the level of an 11-year old. And don't think that if you use big two dollar words that you are going to get less people to read it or understand it. They won't.

When addressing barriers to compliance with a food safety recommendation, the participants identified price concerns and interactions with the food inspectors. One participant described an interaction with a food inspector as follows:

I don't know, he just didn't talk about it… he was just saying don't tell me about it and so I took that could be a problem. So I was like, well, don't tell the inspector when he comes out and he just wants to see just logs in the woods. This is something that I would not comply with safety regulations because I make too much money selling shiitake mushrooms. – Participant Three

Participants suggested that regulators might be overzealous about protecting customers. According to some participants, consumers expect their food to be "perfect" in ways that do not affect health or taste. Other comments expressed frustration about being at the mercy of food brokers, who find fault with food in order to drive down prices:

It is like our friend who was selling cabbages, and he was bringing a whole truckload behind, and he had one damaged cabbage, and was turned away. One bruised cabbage. He was selling cabbage on the side of

the road for ten cents a piece. But the other thing, if they don't want it – they will find a reason not to have it. – Participant One

Another person I know took a load of green beans down to Atlanta, and they …. I think that the going price was at about 10 dollars a bushel, and he got down there, and they told him that they didn't need them. He had a truck load of green beans. But they told him – hey, tell you what – we feel sorry that you have driven all this way for nothing, and so we will give you $3 a bushel so that will cover your fuel cost – you can get your diesel money back out of it. He brought them home and sold them here. – Participant Two

Other barriers to food safety included lack of knowledge and low numbers of food inspectors:

Until there is a problem, they will not bother you. And if there is a problem, they will show up. The issue is that the department of agriculture, especially the inspectors, are so thin. And the other problem is that there are so many products coming into the state that – for example the Mexican Cheese plant that is now in [state] – they make a entirely different product of cheese that no one in [state name] has ever seen before. It is made out in California, but not in this part of the country. And our inspectors here have no clue on what they were doing or what they were looking at. They did not know – one of them had to make the

trip out to California to learn more about the product. We have so many new products and it is not like the old days where you have some of the same old stuff – we have so many new items being brought into the state. They do not have the manpower or the time to learn about it – so until something happens, then they might as well see this. – Participant One

Participants expressed concerns about importation of food products from other countries. Participant One mentioned:

we are getting so much products from South America that it has different laws down there. They can use whatever pesticides that they want down there and we have to be aware of that. When I was growing up, we did not have grapes growing in the middle of January. You had them when they were in season, and now you can get them anytime you want them. And so those products come from outside the country, and that is something to think about.

Participants were influenced by price when purchasing food products and following recommendations. They also commented on the influence of children to buy certain products:

That is probably everyone here. I still buy per value. I still have [SON'S NAME] at home, and he will be 12 on Saturday, and he demands certain things. He demands Kraft Macaroni and Cheese and not Great Value. But if I can find Great Value that is a few cents cheaper, I am going to buy it. – Participant Three

> *It seems like our younger daughters who are in their 20s are much, much more food conscious and label conscious than we ever were. I guess they are obsessing over what we are eating – and we have gone full circle on where we started and where we are now. We are doing so much to our agriculture that we are seeing the effects of it right now.* -- Participant Four

Not only were the farmers in the focus group aware of what schools were teaching in terms of food safety and nutrition, but they also participated in farm day activities by bringing in some of their animals (baby calves and chickens) to show the children and explain to them the process of making food and life on the farm.

SUMMARY ANALYSIS OF FOCUS GROUPS

The responses of the focus groups were analyzed with the goal of constructing realistic scenarios and questionnaire items suitable for the TBP as described by Francis et al. (2004).

Demographic Summary

The total number of participants in the three focus groups was 24, with 8 men and 16 women. The average age of the participants was 43.1 years and the average years of education among the participants was the equivalent of a bachelor's degree. Seventeen of the 24 participants in the focus group were active on social media. The most popular social media sites among the participants included Facebook (N=17), YouTube (N=14), Twitter (N=8), and other social networking sites (N=7) which included LinkedIn and LiveJournal, Flicker (N=6), and Delicious. Geolocation based applications and MySpace

were used by 3 participants. Eight participants spent less than 15 minutes on social media per day, 6 participants spent 15-30 minutes per day, another 6 spent 30-60 minutes per day, 3 participants spent one hour to two hours, and 1 participant spent more than two hours a day.

Food Safety

Across the three focus groups, similar points and issues emerged from the discussion related to food safety recommendations, advantages and disadvantages of following a food recommendation, and some of the issues participants considered to be important when complying with a food safety message. Some of the themes and issues that arose from these discussions included: (1) the growing need for better food labeling, (2) the impact of perceived control over food, (3) the conceptualization of terms used in marketing food (e.g., organic or all-natural), (4) the negative perception of importing foreign food products, (5) personal responsibility for food safety (cooking at home versus eating out), (6) too much or too little information, (7) sharing news with others on social media (e.g., Facebook), (8) not relying on one source of information, and (9) doing personal research to get different opinions on food safety.

One of the main concerns of the participants is the need for better labeling of the ingredients in products. They did not understand what is in the food products or what were or were not healthy ingredients.

Other issues that emerged were perceptions of the meaning of food safety, and what factors contribute to being able to control food or not. Some of the participants felt that companies and federal regulation agencies go *"overboard"* with food safety

recommendations. Participants noted that if they can see the food being prepared themselves, they feel that they have more control over their food compared to getting their food elsewhere. Personal responsibility was viewed as a major reason for why people are so concerned about what they eat.

All three focus groups expressed confusion about the meanings of some terms used to describe food. Some of the examples that were discussed included organic, all-natural, free-range (related to chicken). The participants were not sure if there was a difference really between organic and non-organic foods, while one participant mentioned that there is no difference and it was a *"gimmick."* One of the fears is that some of these words will become *"tainted"* if they are used inappropriately, and people will not know how else to explain them to their consumers.

Importing food products (e.g., fruit, milk) from other countries was another concern that characterized the discussion of all three focus group discussions. There were certain common perceptions of foreign food products as not being safe, not subject to the same tough regulations as U.S. products, and containing more pesticides. Participant One in Focus Group Three mentioned that some government agencies do not have the resources or expertise in particular food products that are coming into their jurisdiction, which causes some additional challenges.

The participants noted that personal responsibility and common sense are important elements to consider when looking at a food safety recommendation. This theme suggested that people experience a rather high level of control when it comes to consuming safe food.

All three focus groups discussed means for obtaining information about food safety recommendations. Knowledge about food safety recommendations and recalls varied substantially from participant to participant. Some participants said that they had too much information and felt that the messages were *"too saturated,"* while other participants voiced concerns about not getting enough information about food recalls, background for a recall, or how certain food products are brought to market (e.g., milk). Lacking this information was associated with high levels of anxiety about all food products.

The participants believed that food safety information should be presented in a way that is simplified, concise, and understandable for all parties involved. Some participants believed that food safety messages have improved, and that it is now easier to obtain information. Suggestions for improving the communication of food safety recommendations included providing a QR code, which allows people to use their mobile phones to obtain information. A final suggestion was to provide an application for a food ingredient dictionary. Another suggestion was to use supermarket reward card databases to contact individuals who have bought a recalled food directly.

The majority of the focus group participants participate actively on social media (N=17, 71%). When asked what they do on social media, the most popular reason was to communicate and share information with their friends and family (N=18, 75%). Sharing this information on social media, particularly on Facebook, with family members and friends was one of the emerging themes involving social media related to a food safety recommendation message.

Attitudes

Complying with food safety recommendations was generally viewed as a sensible and positive thing to do by focus group participants. Among the possible disadvantages of following food safety recommendations were the need to change food preparation habits (inconvenience and expense) and the possibility of actually raising anxiety about food safety. These responses were used to construct relevant items about attitudes for the questionnaire. For example, Participant Ten in the second focus group noted that *"There is such a thing as being too informed. You start to see things where there aren't any."* Participant Three in the first focus group made a similar observation, *"I think it's there so many of them. Like it's which ones do you do?"* Many participants noted that food safety recommendations were vague and unclear about the potential harm of not following the recommendation, again leading to more confusion and anxiety. Participant Ten in the second focus group stated *"I don't think that they use enough judgment on what constitutes as a health hazard. I mean, there is a recall, and then there is a recall that can kill somebody. Not everything that goes wrong is going to be deadly."*

Subjective Norms

The two most important groups of influencers related to compliance with food safety recommendations noted by focus group participants were family members and friends. These findings were incorporated in the construction of subjective norm items for the questionnaire. In particular, younger focus group participants frequently noted that their mothers were the ones who communicated news about food recalls to them, and would be upset if they did not comply. Participant Eight in the second focus group

reported, *"My mom warns me about them [food recalls], constantly writes to me about them, tells me about it."* Less frequently mentioned reference groups included dinner guests, school personnel, and other parents in the school setting.

Friends were not only viewed as a group that could influence compliance positively, but also were noted as a group that might actually disapprove of compliance. For example, Participant Six in the second focus group said that *"my friends would think that I am paranoid"* for complying with a food recall or food safety recommendation. This mixed input from friends stands in contrast to family members, who were viewed as have a single direction of influence (greater compliance). In addition, parents of young children participating in the focus groups identified parents of children without food allergies as potentially disapproving. Participant Four in the first focus group stated, *"I think a lot of people are irritated with the allergies in the schools….it's not their child so they don't care."*

Perceived Behavioral Control

Among the primary themes regarding a person's control or self-efficacy in following a food safety message was trust of the food source and the person preparing the food. In general, participants appeared to believe they had significant control over their personal exposure to contaminated food. As Participant Eight in the second focus group noted:

> *Yeah, like the green onion thing – I would still eat it during that time and if I was the one preparing the meal, then wash them personally, or cooked it personally – I would feel better about it. Even during the egg thing, I*

would still be cooking my eggs and not worrying about it as much or that type of thing. You know what you did, I mean… that is all you need to do."

Participant Seven in the first focus group responded similarly, *"I think if I had confidence in a chef, who grew his or her own herbs, that would be interesting."* Focus group participants noted that they felt less control over food prepared by restaurants. Participant Nine in the second focus group compared her practices with those of restaurants: *"Right, and even when the tomato thing was going on fairly recently, we checked out tomatoes for every single package and I am sure that not all restaurants do that."*

Participants expressed concerns about food grown outside the United States, as other countries were perceived as having lower safety standards. However, they did express high levels of control of this situation, as several participants reported that they did not buy food unless they knew the country of origin from labeling. Another possible barrier to food safety was the presence of conflicting messages. Participant Three in the first focus group complained that *"they want you to have wood cutting boards or plastic cutting boards, and they want you to have glass cutting boards but the glass cutting boards aren't good for your knives so it's like if it's too confusing you just give up."*

Packaged foods were also viewed by participants as challenging their ability to eat safely. Participant Three in the first focus group, whose child has a potentially fatal peanut allergy, noted that labels on packaged foods were so unreliable that she always telephoned the manufacturer for more information.

The intention variable chosen for this dissertation (I expect/ want/intend to stop buying American cheese) precluded adding additional interesting variables to the instrument, as these were incompatible with the choice of intention statement. In future research, scenarios featuring packaged, foreign, or restaurant foods could be incorporated to explore the perceived behavioral control variable further.

PILOT TEST OF INSTRUMENT

As described in the previous chapter, a pilot version of the instrument was administered to a convenience sample of 130 undergraduate students. The students completed the test in under 10 minutes, and reported no difficulties answering the questions. Assessing the timing of the test was important for anticipating the cost of using the consumer panel, which is partially based on the time required for participants to complete an instrument.

Pilot Test Item Analysis

Item-total correlations were examined for each set of items representing a construct. Items not having an item-total correlation over .50 were considered for removal (Arnold & Reynolds, 2003).

First, items pertaining to direct measurement of attitudes, subjective norms, perceived behavioral control, and intent were evaluated. The item-total correlations for all seven attitude items were well above the .50 criterion, so all items were retained for the final instrument. Pearson *r's* ranged from .68 to .83 for these items, all *p's* < .01. Similarly, all three subjective norm items had item-total correlations ranging from Pearson's $r = .60$ to .82, all *p's* < .01. All four perceived behavioral control items had

strong item-total correlations, with Pearson's *r's* ranging from .69 to .84, all *p's* < .01. The three intent items showed very high item-total correlations, with Pearson's *r's* ranging from .89 to .94, all *p's* < .01. This result is consistent with findings from other TPB research (Francis et al., 2004; Armitage & Conner, 2001).

Next, the composite behavioral belief measures, which are constructed by multiplying each behavioral belief by its relevant outcome expectation item were assessed for item-total correlations. Two of the items, "Not buying American cheese will require me to change my food preparation habits" and "Not buying American cheese makes me more anxious about food safety" met the .50 criterion, with Pearson *r's* of .65 and .76 respectively, both *p's* < .01. The other two items, "If I avoid buying American cheese, I will feel that I am doing something positive for my health" and "If I avoid buying American cheese, I will enjoy my meals more" both fell short of the criterion, with Pearson's *r's* of .44 and .42, respectively. However, because the item analysis was done after the instrument had been used in the main experiment, all items were retained.

Composite normative belief measures were constructed by multiplying each injunctive norm (e.g. "My family thinks I should avoid buying American cheese") by its relevant motivation to comply item (e.g., "My family's approval of my food preparation habits is important to me.") Item-total correlations were .93 for the first NB item and .90 for the second, so both were well above criterion and were retained.

Finally, three control belief items (e.g. "If not buying American cheese makes me more anxious about food safety, I am more/less likely to follow the recommendations") were constructed by multiplying each relevant control belief item by its associated

expected outcome item. Item-total correlations for two of the items were above criterion (.70 and .78), while the third was not (.35). However, the researcher believed that wording on this item was a problem, and the item was reworded and retained for the final instrument.

In sum, all four of the major TPB constructs (attitudes, subjective norms, perceived behavioral control, and intent) had strong item-total correlations, and none of these items were considered for deletion. Three of the indirect measures, however, did not meet the criterion of .50 item-total correlation. However, because these items were similar to those recommended by Francis et al. (2004), the researcher decided to reword them and include them in the main experiment. The fact that the students completed the instrument so quickly minimized the need to cut these borderline items from the instrument. An exploratory factor analysis of the 32 items identified some cross-loadings of items, defined as loadings greater than .3 on more than one factor (Cudeck & O'Dell, 1994), but as the reliabilities were acceptable, the decision was made to proceed with the main experiment.

In response to the pilot study, several small changes in the instrument were made to clarify wording and remove a redundant demographic question. The pilot instrument grouped questions relevant to each TPB attribute (e.g. attitudes, subjective norms, control, and intent) together. Ajzen (2001) recommended that the questions be presented in random order rather than in groupings, so this change was also made to produce a final instrument, available in Appendix D.

Message Source and Message Reliability

A univariate ANOVA evaluated the effect of scenario on overall intent. The results were insignificant.

A univariate ANOVA was conducted to evaluate the effects of message source, message reliability, and their potential interaction on intent to comply with a food safety message. Results showed that neither message source (professional versus user-generated) nor message reliability (confirmed versus unconfirmed) alone produced significant main effects, but that an interaction of source and reliability was significant, $F(1, 126) = 4.250$, $p < .05$. Further examination of the data led to splitting the data file based on message reliability (confirmed versus unconfirmed) and running a one-way ANOVA on both confirmed and unconfirmed data groups. Results of this analysis showed that with confirmed messages, no significant differences between message source were observed, $F(1, 63) = .221$, $p = .640$. However, when messages were unconfirmed, the difference between professional and user-generated sources was significant, $F(1,63) = 9.158$, $p < .01$. With 1 indicating weakest intent and 7 indicating strongest intent to comply with a food safety message, the mean intent of the Professional—Unconfirmed group was 4.65, and the meant intent of the User-Generated—Unconfirmed group was 3.67. In other words, if information is unconfirmed, professional sources appeared to produce stronger intent to comply with a food safety message than user-generated sources did.

Evaluation of the Theory of Planned Behavior

The core model specified by the TPB was assessed using the protocol outlined by Francis et al. (2004).

Scale reliability tests were run for items designed to assess attitudes, subjective norms, perceived behavioral control, and intent. Responses to seven items were assessed for inclusion in an overall attitudes variable. Cronbach's standardized alpha for these seven items was .861, which exceeds the criterion of .6, so all six items were retained in the analysis. Three items measured subjective norms. Cronbach's standardized alpha for these three items was .579, which did not meet the criterion. Exclusion of one item, *sn1,* produced a Cronbach's standardized alpha of .799. Reliability testing for four perceived behavioral control variable items resulted in a Cronbach's standardized alpha of .732. Cronbach's standardized alpha for the three intent items was .903, so all three were retained in an overall Intent item. New variables were constructed by summing scores for the relevant items.

Prior to conducting multiple regression, data were evaluated for the fulfillment of test assumptions (Mertler & Vannatta, 2005). Histograms and tests of normality indicated some non-normal distributions; however, the distributions were not too extreme. Multivariate normality and homoscedasticity were examined by constructing a residuals plot. The results of the plot indicated that multivariate normality and homoscedasticity can be assumed.

Standard multiple regression was conducted to determine the accuracy of the independent variables' (attitudes, subjective norms, and perceived behavioral control) ability to predict intent to comply with the food safety message. As shown in Table 4.9, regression results indicated that the overall model significantly predicted intent to comply, $R^2 = .477$, $R^2_{adj} = .465$, $F(3,126) = 38.331$, $p < .001$. Collinearity statistics and

diagnostics indicated no problems with multicollinearity. Criteria for inclusion was set at 0.1 or above for tolerance and below 2.5 for VIF. All factors met these criteria. Attitudes were significantly correlated with subjective norms (Pearson $r = .279$, $p<.01$) and with perceived behavioral control (Pearson $r = .526$, $p = .01$). Subjective norms and perceived behavioral control were not correlated (Pearson $r = .106$, $p = .228$).

This model accounts for 46.5 percent of the variance in intent to comply with the food safety message. A summary of regression coefficients is presented in Table 4.9, and indicates that only two of the three independent variables (attitudes and subjective norms) significantly contributed to the model. Attitudes had a stronger effect on intent than subjective norms. Perceived control did not contribute significantly to the model. Responses to the control items indicated a strong sense of perceived control by the participants.

Table 4.7 Coefficients for Model Variables

	B	*β*	*t*	*p*	*Bivariate r*	*Partial r*	Tolerance	VIF
Attitudes	.365	.577	7.35	.001	.651	.548	.673	1.485
Subjective Norms	.287	.241	3.60	.001	.403	.305	.920	1.087
Perceived Control	.017	.012	.16	.870	.342	.015	.722	1.386

The second part of the evaluation of the TPB is to see whether the antecedent items (behavioral beliefs, normative beliefs, and control beliefs) predict substantial variance in their associated variables of attitudes, subjective norms, and perceived behavioral control, respectively. Three separate regression analyses were used to assess the relationships between the behavioral belief item products (BBxOE) as independent variables and attitudes as the dependent variable, normative belief item products

(NBxMC) as independent variables and subjective norms as the dependent variable, and control belief item products (CBxPP) as independent variables and perceived behavioral control as the dependent variable.

Data were evaluated prior to conducting the regression analysis as described above. Standard multiple regression for the attitude analysis indicated that the overall model significantly predicted attitudes, $R^2 = .269$, $R^2_{adj} = .246$, $F(4,125) = 11.49$, $p < .001$. This model accounts for 24.6 percent of the variance in attitudes. A summary of regression coefficients is presented in Table 4.10 and indicates that two of the four items were significant at the .001 level (items 1—I am doing something positive for my health and item 2— I will need to change my food preparation habits). Neither of the other two items was significant (item 3—I will be more anxious about food safety and item 4-- I will enjoy my meals more). Item 1 was significantly correlated with Item 4 (Pearson $r = .304$, $p < .01$), but not with either Item 2 (Pearson $r = -.129$, $p = .073$) or Item 3 (Pearson $r = .084$, $p = .171$). Items 2 and 3 were significantly correlated (Pearson $r = .244$, $p < .01$). Item 2 was not significantly correlated with Item 4 (Pearson $r = =.004$, $p = .481$), nor was Item 3 significantly correlated with Item 4 (Pearson $r = -.077$, $p = .191$).

Table 4.8 Coefficients for Attitude Model Variables

	B	*β*	*t*	*p*	*Bivariate r*	*Partial r*	Tolerance	VIF
BB 1	.638	.401	4.953	.001	.393	.405	.890	1.123
BB 2	-.235	-.300	-3.781	.001	-.262	-.320	.926	1.080
BB 3	-.035	-.057	- .722	.472	- .088	-.064	.934	1.071
BB 4	.141	.116	1.446	.151	.233	.128	.902	1.108

The contribution of the normative belief items to subjective norms was assessed next. Standard multiple regression indicated that the overall model did not significantly predict subjective norms, $R^2 = .030$, $R^2_{adj} = .015$, $F(2,127) = 1.976$, $p = .143$. A summary of regression coefficients is presented in Table 4.11 and indicates that neither normative belief items were significant at the .05 level. The two normative beliefs were significantly correlated (Pearson $r = .668$, $p < .01$).

Table 4.9 Coefficients for Subjective Norm Model Variables

	B	*β*	*t*	*p*	*Bivariate r*	*Partial r*	Tolerance	VIF
NB 1	.035	.093	.791	.431	.070	.069	.554	1.806
NB 2	.042	.097	.829	.409	.073	.072	.554	1.806

The same procedure was used to assess the contribution of control beliefs to perceived behavioral control. Standard multiple regression for the control belief analysis indicated that the overall model significantly predicted perceived behavioral, $R^2 = .067$, $R^2_{adj} = .044$, $F(3,126) = 2.995$, $p < .05$. A summary of regression coefficients is presented in Table 4.12. This model accounts for 4.4 percent of the variance in perceived behavioral control. Only one of the variables, CB3 (Enjoy my meals more), was statistically significant ($t = 2.444$, $p < .05$). CB1 was positively correlated with CB2 (Pearson $r = .166$, $p < .05$) and was marginally positively correlated with CB3 (Pearson $r = .143$, $p = .053$). CB2 was not significantly correlated with CB3 (Pearson $r = .062$, $p = .242$).

Table 4.10 Coefficients for Perceived Behavioral Control Model Variables

	B	*β*	*t*	*p*	*Bivariate r*	*Partial r*	Tolerance	VIF
CB 1	.052	.119	1 .353	.178	.139	.120	.955	1.047
CB 2	-.023	-.064	- .733	.465	-.031	-.065	.971	1.030
CB 3	.228	.213	2.444	.016	.213	.210	.978	1.022

According to the TPB, the three indirect predictors of intention (behavioral beliefs, normative beliefs, and control beliefs) are expected to show significant correlations. The current model did not completely confirm this expectation. Behavioral beliefs were significantly correlated with control beliefs (Pearson's $r = .402$, $p < .01$), but not with normative beliefs (Pearson's $r = .005$, $p = .951$. Normative beliefs were not significantly correlated with control beliefs (Pearson's $r = .010$, $p = .908$).

Summary of Pilot Data Analysis

Participants were able to complete the instrument in less than ten minutes, and reported no difficulties. One redundant item was identified and removed before the instrument was presented to the consumer panel. Item analysis indicated that the instrument performed adequately. Item-total correlations were significant. Although an exploratory factor analysis indicated some cross-loading of items, the instrument was viewed as acceptable for use in the main experiment because the reliabilities were within appropriate limits..

Initial analyses indicated that the message source and message reliability IVs did not product significant effects on the intent DV, but a significant correlation between the two IVs suggested that these were worth exploring further in the main experiment. Regression analyses supported the overall TPB model, with the exception of the impact

of normative beliefs on subjective norms. However, it is likely that a group of college students would not necessarily show the same influence of normative beliefs on subjective norms as a more representative sample of the population.

Before the instrument was presented to the consumer panel, question order was randomized, as were positive and negative directions of adjectives (good—bad) and agreement (strongly agree—strongly disagree) as recommended by Ajzen (2001). Slight wording changes for readability and the removal of a redundant question were made. A copy of the final instrument can be found in Appendix D. A comparison of the pilot data and main instrument data appears later in this chapter.

MAIN EXPERIMENT

This section presents a summary of the demographic profile of the research sample, the results of descriptive analyses of the research variables, and parametric analyses of the research data. First, the demographic characteristics of the sample are described. Second, the descriptive analysis (mean and standard deviation) for the measurement items is presented. Third, results of the situational variables (message source and message reliability) on intent to comply with the safety message are evaluated. Fourth, results from an analysis of the core attitudinal model and the interaction of the model with the situational variables are discussed. Finally, key findings from the data analysis are summarized. Unless otherwise noted, PASW18 was used for all relevant analyses, with significance set at the $p < .05$ level.

Descriptive Statistics

Four hundred participants were recruited through a consumer panel to participate in the main experiment study through eRewards. Primary demographic characteristics are displayed in Table 4.13. Two hundred and twenty two (N=222, 55.5%) men participated in the experiment, while 178 women (N=178, 44.5%) women completed the study. The average age of participants was 42 years. Age ranged among the participants from 18 to 82 years. Using categories provided by the U.S. census, participants were divided into cohorts (Hobbs & Stoops, 2002). Thirty-eight participants (9.5%) were born before 1945 (Baby Bust), 125 (31.3%) were categorized as Baby Boomers (1946-1964), 86 (21.5%) were in Generation X (1965-1976), and 151 (37.8%) were Echo Boomers (1977-1992). Note that the age distribution of the consumer panel was quite similar to that of the focus groups. Focus group participants were less likely to be male, however, than consumer panel participants.

One hundred and seven participants (26.8%) had a high school diploma, 162 (40.5%) reported having an undergraduate degree, 76 (19%) had a masters level graduate degree (MBA, MA, MS), and 24 (6.0%) had a PhD or MD. Smaller numbers of participants reported having gone to technical school (N=5, 1.25%), having an associate of arts degree (N = 4, 1%), or finishing two years of college (N=4, 1%).

Out of the 400 hundred participants, 261 participants (65.3%) said that they were actively participating on social media and networking sites, while 139 said they were not active on social media (34.8%). This compares to 70.8% of the focus group participants

reporting active use of social media. Table 4.11 outlines the demographic information for the respondents in the main experiment.

Table 4.11 Respondents' Demographic Characteristics

Characteristic	Frequency	Percent (%)
Gender		
Male	222	55.5
Female	178	45.5
Age Cohort		
Baby Bust (born before 1945)	38	9.5
Baby Boomers (1946—1964)	125	31.3
Generation X (1965—1976)	86	21.5
Echo Boomers (1977—1992)	151	37.8
Education		
High School Diploma	107	26.8
Undergraduate Degree	162	40.5
Graduate Degree (MBA, MA)	76	19.0
Graduate Degree (PhD, MD)	24	6.0
Other	31	7.8
Social Media Participation		
Yes	261	65.3
No	139	34.8

Table 4.12 presents a summary of the social media sites that were used by the consumer panel participants. Facebook was the most frequently used social media site (N=249; 62.3%), followed by Twitter (N=196; 49%), and YouTube (N=123, 30.8%). Of the 261 participants who were active on social media, 83 (20.8%) said that they spend between 15 to 30 minutes a day, while 61 (15.3%) said that they spent between one to two hours a day on social media.

Table 4.12 Social Media Sites Visited (N=261)

Social Media site	Frequency	Percentage (%)
Facebook	249	62.3
Twitter	196	49.0
YouTube	123	30.8
MySpace	43	10.8
Flickr	21	5.3
Geolocation Apps	12	3.0

Table 4.13 displays the uses of social media among the consumer panel participants. Communicating with friends and family was the most frequent reason for using social media (N=247, 61.8%) followed by posting or viewing photos (N=191, 47.8%), sharing information with friends, family, and online community (N=173, 43.3%), posting or viewing comments on blogs and social networking sites (N=87, 21.8%), writing private messages to followers (N=85, 21.3%), searching for information (N=80, 20.0%), and posting or viewing links to articles or events (N=73, 18.3%).

Table 4.13 Uses of Social Media

Use of Social Media	Frequency	Percentage
Communicating with friends and family	247	61.8
Post or view photos	191	47.8
Sharing information with friends, followers, online community	173	43.3
Post or view videos	102	25.5
Post or view comments on blogs and social networking sites	87	21.8
Write private messages to followers	85	21.3
Search for news on current events	80	20.0
Search for information about current events (locally, nationally, and internationally)	80	20.0
Professional networking opportunities	79	19.8
Post or view links to articles or events	73	18.3
Interacting with online groups on discussion boards	42	10.5
Check in at various locations	30	7.5
Other	4	1.0

Two hundred ninety-seven participants (74.3%) reported owning a desktop computer, 310 (77.5%) owned a laptop computer, 232 (58.0%) owned a smartphone, and 17 (4.3%) owned an iPad. These results are consistent with a 2010 report by Pew Research Center discussing an increase of cell phone ownership globally by 36% since 2002. Computer ownership has increased from 38 % to 50 % since 2002 as well, but this rate is slower than the rate of growth in cell phones ("Global publics embrace social networking," 2010).

Descriptive Analysis of Measurement Items

Data transformation was used to recode relevant Likert scale items so that responses of "1" indicated negative attributes (e.g. bad, harmful) and weaker agreement and "7" indicated positive attributes (e.g. good, useful) or stronger agreement.

Table 4.14 presents the mean and standard deviation for items comprising the attitude, subjective norm, perceived behavioral control, and intent variables. Means for the six attitude measures ranged from 3.545 to 4.56, with an overall mean for attitudes of 4.13. Means for the three subjective norm measures ranged from 3.55 to 5.27, with an overall mean of 4.33. Means for the three perceived behavioral control items ranged from 2.15 to 3.68, with an overall mean of 2.74. Means for the three intention items ranged from 4.00 to 4.67, with an overall mean of 4.40.

Table 4.14 Descriptive Statistics for Measurement Items for Attitudes, Subjective Norms, Perceived Behavioral Control, and Intention

Variable	Measurement Items	Mean ± SD[a]
Attitude	Overall, I think that not buying American cheese products is _____.	
Att1	Beneficial…….....Harmful	3.55 ± 1.69
Att2	Pleasant……..Unpleasant	4.56 ± 1.67
Att3	Convenient……..Inconvenient	4.71 ± 1.82
Att4	The right thing to do….The wrong thing to do	3.80 ± 1.94
Att5	Easy……Difficult	3.98 ± 2.06
Att6	Good……..Bad	4.08 ± 1.86
Att7	Useful……...Worthless	4.07 ± 1.87
Subjective Norm		
SN1*	Most people who are important to me think I should buy American cheese products.	3.55 ± 1.79
SN2*	It is expected of me that I avoid buying American cheese products.	4.18 ± 2.03
SN3*	I feel under social pressure to avoid buying American cheese products.	5.27 ± 1.69
Perceived Behavioral Control		
PBC1*	For me to stop buying American cheese products is easy.	3.68 ± 2.18
PBC2*	The decision to stop buying American cheese products is beyond my control.	5.62 ± 1.71
PBC3*	Whether or not I stop buying American cheese products is beyond my control.	5.85 ± 1.57
Intention		
Int1*	I expect to stop buying American cheese products.	4.00 ± 2.11
Int2*	I want to stop buying American cheese products.	4.67 ± 1.99
Int3*	I intend to stop buying American cheese products.	3.47 ± 2.15

* Scale ranges from 1 (strongly agree) to 7 (strongly disagree)
[a] Standard Deviation

Table 4.15 lists the means and standard deviations for items comprising the behavioral belief, normative belief, and control belief variables. These items were all

formed by taking the product of 2 items as indicated. For example, to obtain the first behavioral belief score (BB1), you would multiply BB1 by its associated outcome evaluation or OE1. Because all Likert scales ranged from 1 to 7, scores for each item could range from a low of 1 to a high of 49. Among the four behavioral belief items, participants viewed doing something positive for their health as being the most beneficial. In the analysis of normative beliefs, family members exerted more influence than friends. Enjoying meals more was the highest perceived facilitating factor among the control beliefs affecting compliance with the food safety message.

Table 4.15 Descriptive Statistics for Measurement Items for Behavioral Beliefs, Normative Beliefs, and Control Beliefs

Variable	Measurement Items	Mean ± SD[a]
BB x OE*		
BB1 x OE1	Doing something positive for my health	43.31 ± 5.80
BB2 x OE2	Changing food preparation habits	31.87 ± 11.22
BB3 x OE3	Anxious about food safety	25.99 ± 13.15
BB4 x OE4	Enjoy meals more	40.91 ± 6.66
NB x MC#		
NB1 x MC1	Family	37.16 ± 11.28
NB2 x MC2	Friends	29.04 ± 13.47
CB x PP^		
CB1 x PP1	Changing my food preparation habits	35.43 ± 10.87
CB2 x PP2	Feeling more anxious about food safety	32.67 ± 11.44
CB3 x PP3	Enjoying my meals more	36.32 ± 10.83

* Higher scores represent greater agreement.
\# Higher scores represent greater influence.
^ Higher scores represent greater likelihood.
[a] Standard Deviation
Note: BB= Behavioral Beliefs, OE=Outcome Evaluation, NB=Normative Beliefs, MC=Motivation to Comply, CB=Control Beliefs, PP=Perceived Power

Exploratory Factor Analysis of Measurement Items

As was done with the pilot instrument data, exploratory factor analysis was conducted to determine what, if any, underlying structure existed for measures of the 32 items in the main instrument. Once again, cross-loading of items was observed, as indicated by loadings of .3 or above on more than one factor (Cudeck & O'Dell, 1994). The current instrument was developed following the protocol set out by Francis et al. (2004), which does not include the use of exploratory factor analysis in either the pilot phase or following the administration of the main experiment. The assumption was made that including items modeled after the very specific sample questionnaire would produce a valid instrument. However, given the cross-loading observed in the current results, it appears that factor analysis would be a useful addition to future research using this method.

The Effects of Message Source and Message Reliability on Intent

Three measures of intent ("I expect to stop buying American cheese products," "I want to stop buying American cheese products," and "I intend to stop buying American cheese products") were summed to form a composite variable of general intent (with higher numbers indicating stronger intent to comply; "7" equals "strongly agree" and "1" equals "strongly disagree"). Cronbach's standardized alpha for these three items was .877, which exceeds the typical criterion of .6, so all items were retained to form an intent variable.

Data were screened to ensure that the assumptions of ANOVA were fulfilled. A one-way ANOVA was conducted; a summary of results is presented in Table 4.16.

Results indicated that the mean intent to comply with the food safety message differed significantly as a function of scenario, $F(3, 396) = 3.059$, $p < .05$. Bonferroni's post hoc test was conducted to determine which scenarios produced significantly different intent. Results revealed that intent was significantly different between participants viewing Scenario 3 (user-generated source: unconfirmed message) and Scenario 4 (professional source: unconfirmed message). This result (Scenario 3 versus Scenario 4) duplicated the result found in the pilot study. The lines in Figure 4.1, which are not parallel, suggested that a possible interaction between message source and message reliability should be investigated.

Table 4.16 Intent as a Function of Scenario

Source	*SS*	*df*	*MS*	*F*	*p*
Between Groups	283.79	3	94.60	3.059	.028
Within Groups	12243.99	396	30.92		
Total	12527.78	399			

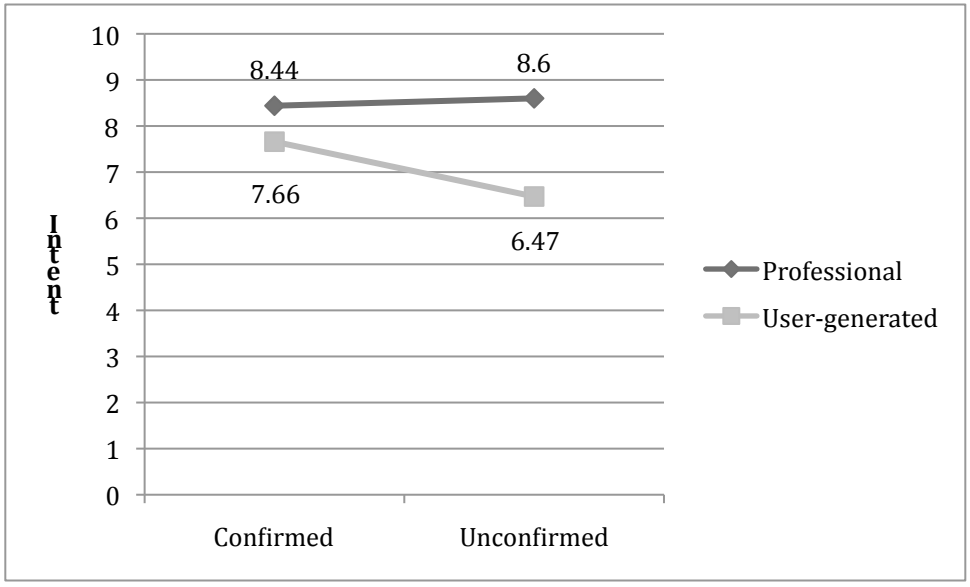


Figure 4.1 Intent as a Function of Message Source and Reliability

To investigate the possible interaction between a message source (professional versus user-generated) and message reliability (confirmed versus unconfirmed), a Univariate ANOVA was conducted; a summary of results are presented in Table 4.17. Main effect results revealed that intent to comply with a food safety message was significantly different between professional and user-generated sources, $F(1, 396) = 6.847$, $p < .01$, partial $\eta^2 = .017$. Estimates of effect size revealed low strength in associations. The interaction between message source and message reliability was not significant.

Table 4.17 Intent as a Function of Source and Reliability of Message

Source	***SS***	***df***	***MS***	***F***	***p***	***ES***
Between treatments	283.79	3	94.60	3.059	.028	.023
Source	211.70	1	211.70	6.847	.009	.017
Reliability	26.52	1	26.52	.858	.355	.002
Source x Reliability	45.56	1	45.56	1.474	.226	.004
Within treatments	12243.99	396	30.92			
Total	82303.00		400			

As shown in Figure 4.2, intention to comply with a food safety message was not normally distributed. Nearly one quarter of the participants (22.5 percent) chose the most extreme alternatives on the intent scale.

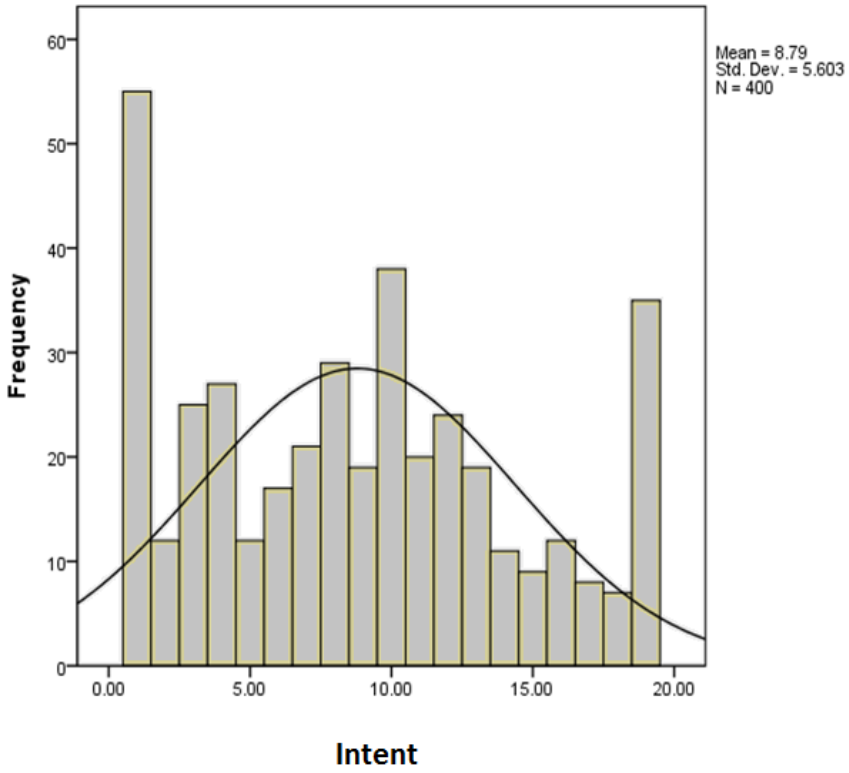


Figure 4.2 Frequency Distribution of Intent Scores

To investigate the effects of participation in social media on the observed results, participants were divided on the basis of their reported participation in social media. A Univariate ANOVA was conducted. For participants reporting no participation in social media, the main effect of message source remained significant, $F(1, 135) = 6.727$, $p < .01$, partial $\eta^2 = .047$. For participants reporting participation in social media, the main effect of message source was no longer significant, $F(1, 257) = 2.086$, $p = .150$.

Cohort Effects

Due to the recent emergence of social media as a source of information, potential cohort effects on the data were examined. As stated previously, the ages of participants ranged from 18 years to 82 years. Using the birth cohorts established by the U.S. Census

Bureau (Hobbs & Stoops, 2002), participants were divided into four age groupings: Baby Bust (born before 1945), Baby Boomers (1946 to 1964), Generation X (1965 to 1976), and Echo Boomers (1977 to 1992). Figure 4.3 highlights the differences in social media use across the four age groupings.

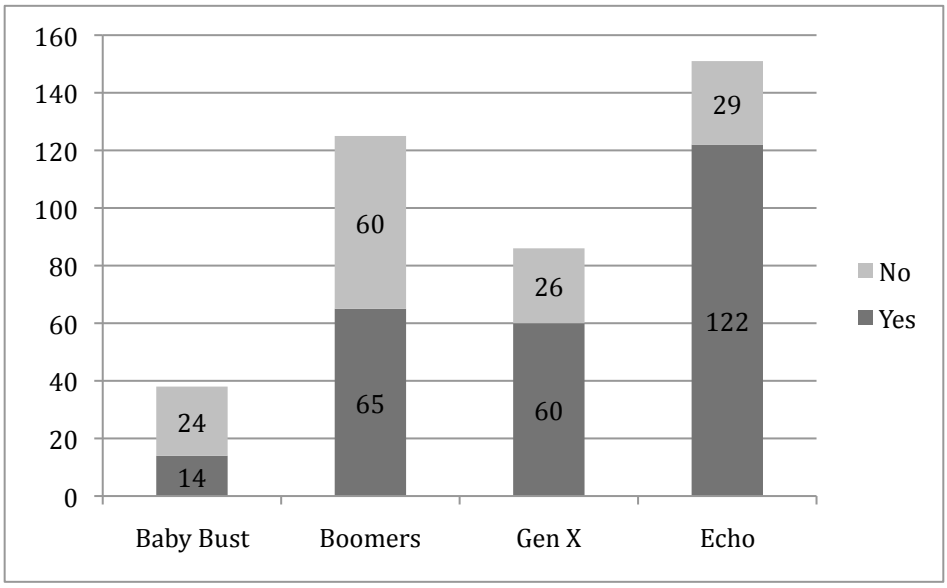


Figure 4.3 Social Media Use as a Function of Age Cohort

A Chi-Square analysis revealed that social media participation was not equal across cohorts, $X^2 = 40.069$, d.f. = 3, $p < .001$.

The message source data were split into professional and user-generated Sources, and a one-way ANOVA was conducted with cohort as the independent variable and Intent as the dependent variable. Cohort did not have a significant result on intent when the safety message was communicated by a professional source. However, as shown in Figure 4.4, when the message was communicated by a user-generated source, a significant linear relationship between cohort and intent was observed, $F(1, 196) = 6.97$, $p < .01$.

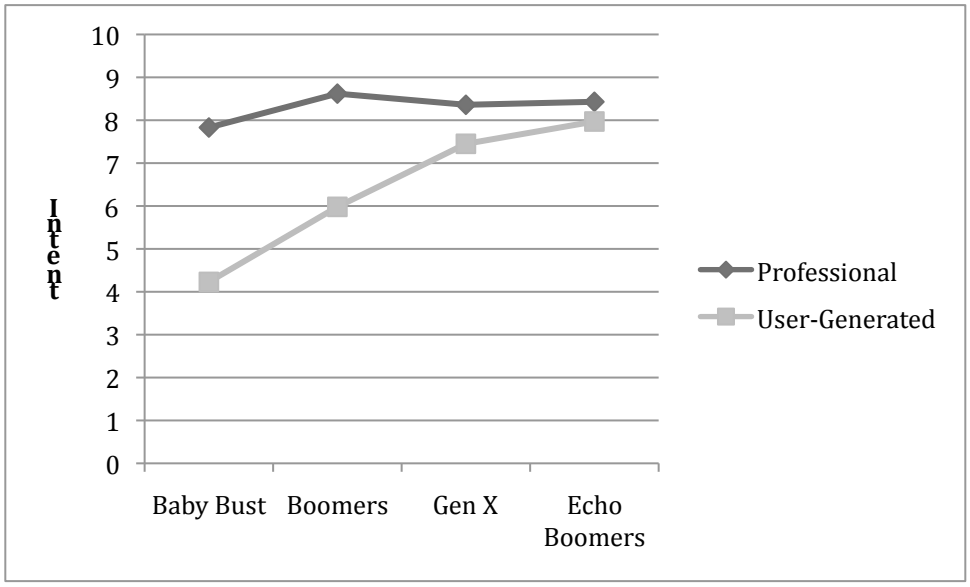


Figure 4.4 Intention as a Function of Age Cohort

Cohort provides a likely explanation for the effect of social media participation on intent to comply discussed previously. Participants who reported participating in social media did not show a significant effect of message source on intention, but participants who reported not participating in social media did show a significant effect of message source on intention. Cohorts were not equally likely to participate in social media, $X^2 = 40.069$, d.f. = 3, $p < .001$. As shown in Figure 4.5, participation in social media decreases with increasing age.

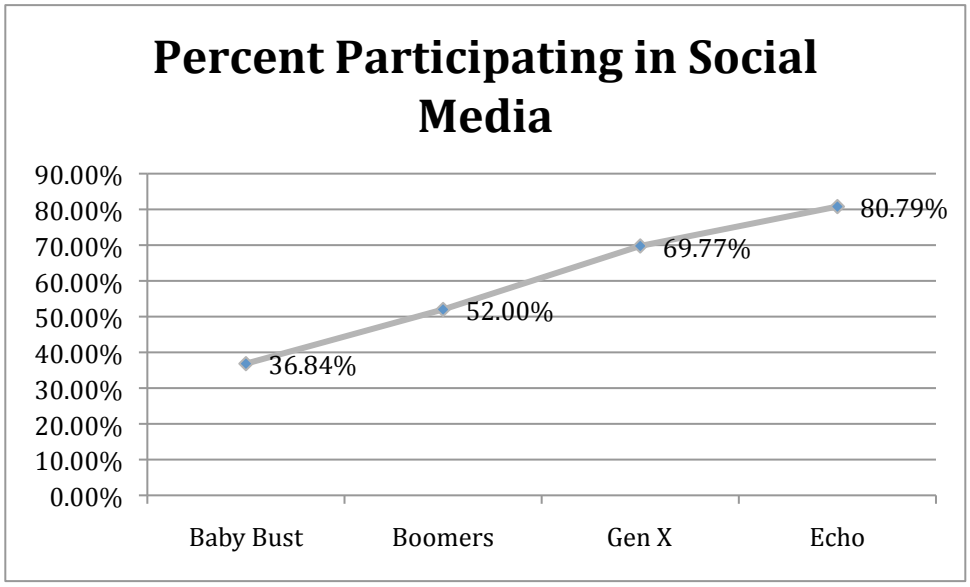


Figure 4.5 Percent Participating in Social Media

The General Attitudinal Model

The core model specified by the TPB was assessed using the protocol outlined by Francis et al. (2004).

Scale reliability tests were run for items designed to assess attitudes, subjective norms, perceived behavioral control, and intent. Responses to six items were assessed for inclusion in an overall attitudes variable. Cronbach's standardized alpha for these six items was .871, which exceeds the criterion of .6, so all six items were retained in the analysis. Three items measured subjective norms. Cronbach's standardized alpha for these three items was .659, which although weaker than the attitudes measure, met the criterion of .6 and were retained for an overall subjective norms variable. Reliability testing for the three perceived behavioral control variable items resulted in the exclusion of one. Cronbach's standardized alpha for the remaining two items was .779, which were combined to form a perceived control variable. As discussed in the previous section,

Cronbach's standardized alpha for the three intent items was .877, so all three were retained in an overall Intent item. New variables were constructed by summing scores for the relevant items.

Prior to conducting multiple regression, data were evaluated for the fulfillment of test assumptions (Mertler & Vannatta, 2005). Histograms and tests of normality indicated some non-normal distributions; however, the distributions were not too extreme. Multivariate normality and homoscedasticity were examined by constructing a residuals plot. The results of the plot indicated that multivariate normality and homoscedasticity can be assumed.

Standard multiple regression was conducted to determine the accuracy of the independent variables' (attitudes, subjective norms, and perceived behavioral control) ability to predict intent to comply with the food safety message. Regression results indicated that the overall model significantly predicted intent to comply, $R^2 = .741$, $R^2_{adj} = .739$, $F(3,396) = 376.964$, $p < .001$. Collinearity statistics and diagnostics indicated no problems with multicollinearity. Criteria for inclusion was set a 0.1 or above for tolerance and below 2.5 for VIF. All factors met these criteria. Attitudes were significantly correlated with subjective norms (Pearson $r = .664$, $p<.01$), but not with perceived behavioral control (Pearson $r = .002$, $p = .969$). Subjective norms and perceived behavioral control were not correlated (Pearson $r = -.059$, $p = .240$).

This model accounts for 73.9 percent of the variance in intent to comply with the food safety message. A summary of regression coefficients is presented in Table 4.18, and indicates that only two of the three independent variables (attitudes and subjective

norms) significantly contributed to the model. Attitudes had a stronger effect on intent than subjective norms. Perceived control did not contribute significantly to the model. Responses to the control items indicated a strong sense of perceived control by the participants. As shown in Figure 4.6, 50 percent of the participants had scores of 13 or 14 on this variable (which ranged from a low control score of 2 to a high control score of 14), while fewer than 10 percent had scores of the "neutral" 8 or below. This uniformity of response suggests that this variable is unlikely to play an important role in explaining the variation seen in intent to comply with the food safety message.

Table 4.18 Coefficients for Model Variables

	B	*β*	*t*	*p*	*Bivariate r*	*Partial r*	Tolerance	VIF
Attitudes	.477	.732	21.34	.001	.850	.731	.557	1.794
Subjective Norms	.234	.179	5.21	.001	.664	.253	.555	1.800
Perceived Control	.009	.005	.20	.845	-.004	.010	.994	1.007

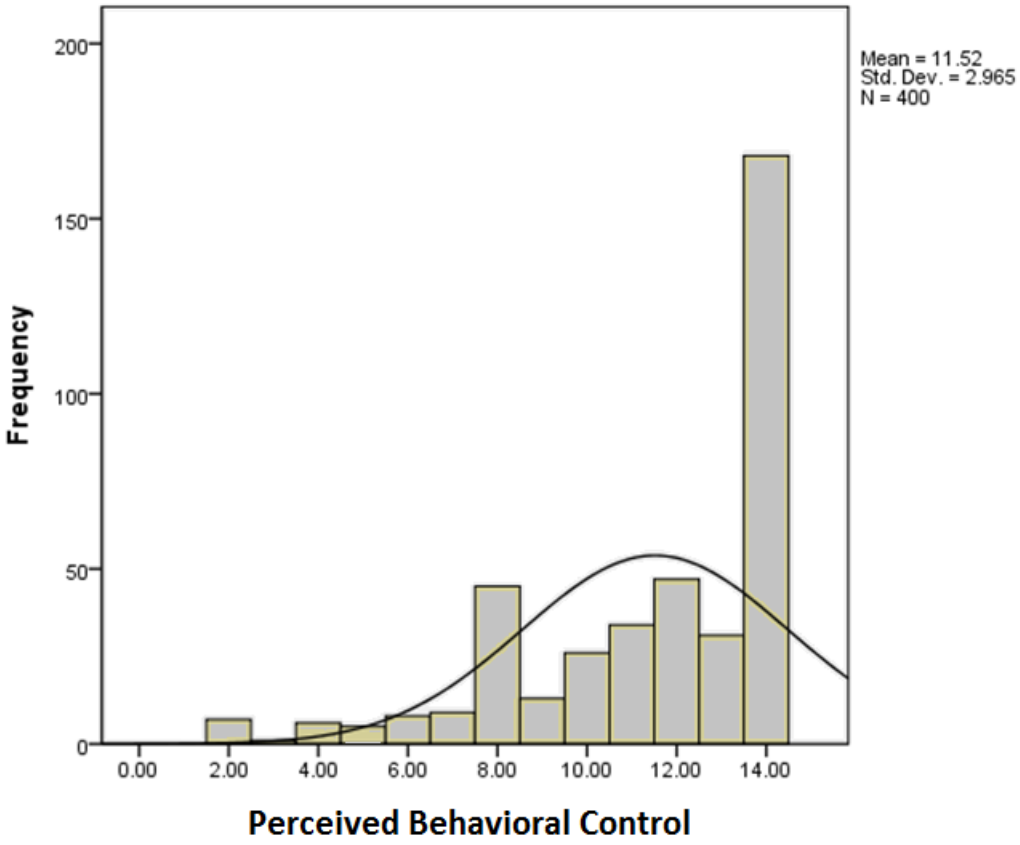


Figure 4.6 Frequency Distribution of Perceived Behavioral Control Scores

Four behavioral belief items were constructed by multiplying each behavioral belief (BB) by its respective outcome evaluation (OE). These four products were summed to form a single behavioral beliefs variable that was significantly correlated with the previously constructed attitudes variable, Spearman's *rho* = .195, $p < .001$.

Two normative belief items were constructed by multiplying two normative belief (NB) items by their respective motivation to comply (MC) items. These two products were summed to form a single normative belief variable that correlated significantly with the previously constructed subjective norms variable, Spearman's *rho* = .671, $p < .001$.

Finally, three control belief (CB) measures were constructed by multiplying each measure by its relevant perceived power (PP) item. These three items were summed to form a control belief variable, and a correlation with the perceived behavioral control variable was significant, Spearman's *rho* = .110, $p < .05$.

Three separate regression analyses were used to assess the relationships between the behavioral belief item products (BBxOE) as independent variables and attitudes as the dependent variable, normative belief item products (NBxMC) as independent variables and subjective norms as the dependent variable, and control belief item products (CBxPP) as independent variables and perceived behavioral control as the dependent variable.

Data were evaluated prior to conducting the regression analysis as described above. Standard multiple regression for the attitude analysis indicated that the overall model significantly predicted attitudes, $R^2 = .266$, $R^2_{adj} = .258$, $F(4,395) = 35.744$, $p < .001$. This model accounts for 25.8 percent of the variance in attitudes. A summary of regression coefficients is presented in Table 4.19 and indicates that two of the four items were significant at the .001 level (items 1—I am doing something positive for my health and item 4—I will enjoy my meals more), one item was significant at the .05 level (item 3—I will be more anxious about food safety), and one item (item 2—I will need to change my food preparation habits) was not significant. Item 1 was significantly correlated with Item 4 (Pearson $r = .345$, $p < .01$), but not with either Item 2 (Pearson $r = .095$, $p = .058$) or Item 3 (Pearson $r = .011$, $p = .830$). Items 2 and 3 were significantly correlated (Pearson $r = .252$, $p < .01$). Item 2 was not significantly correlated with Item 4

(Pearson r = =.064, p = .200), nor was Item 3 significantly correlated with Item 4 (Pearson r = -.066, p =.189).

Table 4.19 Coefficients for Attitude Model Variables

	B	*β*	*t*	*p*	*Bivariate r*	*Partial r*	Tolerance	VIF
BB 1	.630	.425	9.177	.001	.478	.419	.868	1.153
BB 2	-.059	-.077	-1.724	.085	-.026	-.086	.921	1.086
BB 3	.058	.089	2.003	.046	.063	.100	.934	1.071
BB 4	.223	.173	3.742	.001	.318	.185	.870	1.150

The same procedure was used to assess the contribution of the normative belief items to subjective norms. Standard multiple regression indicated that the overall model significantly predicted subjective norms, R^2 = .473, R^2_{adj} = .470, $F(2,397) = 178.079$, $p <$ .001. This model accounts for 47 percent of the variance in subjective norms. A summary of regression coefficients is presented in Table 4.20 and indicates that both normative belief items were significant at the .001 level. As shown in Table 4.18, the second item (My friends think that) produces a greater contribution to the overall model than the first item (My family thinks that). The two normative beliefs were significantly correlated (Pearson r = .392, $p <$ .01).

Table 4.20 Coefficients for Subjective Norm Model Variables

	B	*β*	*t*	*p*	*Bivariate r*	*Partial r*	Tolerance	VIF
NB 1	.059	.155	3.947	.001	.381	.194	.864	1.157
NB 2	.195	.615	15.703	.001	.672	.619	.864	1.157

The same procedure was used to assess the contribution of control beliefs to perceived behavioral control. Standard multiple regression indicated that the overall

model was not significant, $F(3, 396) = 2.169$, $p = .091$. Tolerance values for the three control beliefs were .959, .911, and .896 respectively. VIF values for the three control beliefs were 1.042, 1.098, and 1.116 respectively. The three control beliefs were significantly correlated with one another. CB1 was positively correlated with CB2 (Pearson $r = .272$, $p < .01$) and CB3 (Pearson $r = .183$, $p < .01$). CB2 was positively correlated with CB3 (Pearson $r = .308$, $p < .01$). Even though control beliefs showed a significant correlation with perceived behavioral control (Spearman's *rho* = .110, $p < .05$), it was relatively weak compared to correlations between the other indirect measures and their respective direct measures (behavioral beliefs—attitudes, Spearman's *rho* = .195, $p < .001$; normative beliefs—subjective norms, Spearman's *rho* = .671, $p < .001$).

According to the TPB, the three indirect predictors of intention (behavioral beliefs, normative beliefs, and control beliefs) are expected to show significant correlations. The current model confirmed this expectation. Behavioral beliefs were significantly correlated with normative beliefs (Spearman's *rho* = .321, $p < .01$) and control beliefs (Spearman's *rho* = .311, $p < .01$). Normative beliefs were significantly correlated with control beliefs (Spearman's *rho* = .500, $p < .01$).

Participants were divided into two groups on the basis of their responses on the intention variable, using the median of 13 as the dividing point. Strong intention was indicated by scores between 3 and 13, and weak intention was indicated by scores of 14 to 21. As suggested by Francis et al. (2004), t-tests can then be used to evaluate each question in the instrument. Using intention strength as an independent variable produced significant differences on all but 2 questions in the attitudinal model section of the

instrument. The two questions that did not produce different responses among participants with strong or weak intent were both outcome evaluation questions (”Feeling more anxious about food safety is extremely desirable/undesirable” and “Enjoying my meals more is extremely desirable/undesirable”). Responses to these questions were quite consistent among all participants, with 64 percent selecting an answer between 1 and 3 (1 = extremely undesirable) for the first question and 85 percent selecting an answer between 5 and 7 (7 = extremely desirable) for the second question.

Exploration of Moderation by Message Source and Reliability

Although not included in the formal hypotheses of this study, an exploratory analysis attempted to answer the question of whether or not the situational variables of message source and reliability would serve as moderators within the core model of the TPB. According to Baron and Kenny (1986), a moderator is indicated by an interaction. Because neither the control beliefs nor perceived behavioral control contributed significantly to the overall model describing the intent to comply with a food safety message, no further analysis of these variables was conducted.

To assess the possible interactions between the situational variables (message source and message reliability) with the relationship between behavioral beliefs and attitudes, cases were split at the median to form positive behavioral belief and negative behavioral belief groups. A univariate ANOVA was conducted using attitudes as the dependent variable. No significant interactions were observed, leading to the conclusion that message source and reliability did not moderate the relationship between behavioral beliefs and attitudes.

To assess the possible interactions between the situational variables (message source and message reliability) with the relationship between attitudes and intent, cases were split at the median for attitudes to form a positive attitude group and a negative attitude group. A univariate ANOVA was conducted using intent as the dependent variable. The interactions between the new attitude group variable and message source and reliability were not significant, indicating that the situational variables did not act as moderators in the relationship between attitudes and intent.

Because of the "social" aspect of user-generated sources of information, possible moderation by message source was of particular interest in the relationships between normative beliefs, subjective norms, and Intent. To assess the possible interactions between the situational variables (message source and message reliability) with the relationship between normative beliefs and subjective norms, cases were split at the median for normative beliefs to form high conforming and low conforming groups. A univariate ANOVA was conducted using subjective norms as the dependent variable, and no interactions were observed. The situational variables did not serve as moderators in the relationship between normative beliefs and subjective norms.

To assess the possible interactions between situational variables (message source and message reliability) with the relationship between subjective norms and Intent, cases were split at the median for subjective norms to form high conforming and low conforming groups. A univariate ANOVA was conducted using intent as the dependent variable. No interactions were observed, indicating that the situational variables did not serve as moderators in the relationship between subjective norms and intent.

In sum, neither message source (professional versus user-generated) nor message reliability (confirmed versus unconfirmed) significantly moderated the underlying core model of the TPB. Figure 4.7 indicates both confirmed and unconfirmed hypotheses of the overall model.

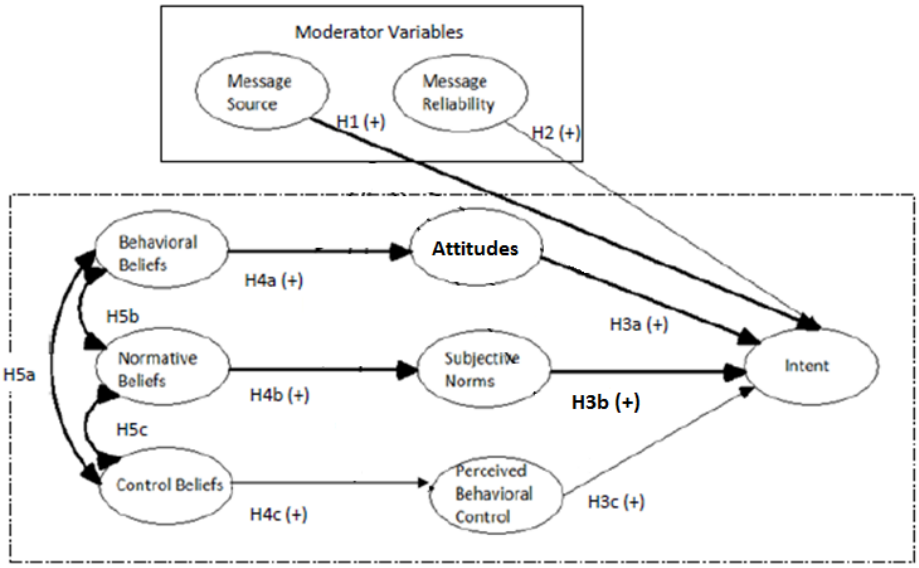


Figure 4.7 Revised Theoretical Model
Notes: Statistically significant relationships are noted by darker arrows, while unconfirmed hypotheses are indicated by lighter arrows. The area within the dotted line is the formal TPB.

Notes on Differences Between Pilot and Main Experiment Results

Several different outcomes were observed when comparing the results of the pilot study and the main experiment. Most of these can be attributed to several key participant and procedural differences between the two sets of data. First, the pilot study was conducted with a convenience sample of undergraduate students, whereas the main experiment was conducted with a representative national consumer panel provided by a professional survey service. As a result, the two groups of participants differed

substantially in age and educational experience, among other demographic variables. Over ninety percent of the pilot sample reported using social media, compared to just 65 percent of the consumer panel.

Second, adjustments were made to the instrument following the pilot study. Adjustments include mixing the order of items representing the different TPB components, which had been grouped together in the pilot instrument. In addition, the responses in the pilot instrument were all presented in a single direction (e.g. "1" always meant a positive adjective or stronger agreement). The response directions were mixed in the main experiment instrument. Minor wording changes were also made to increase readability.

These changes in participants and procedures make a systematic comparison of the two sets of results challenging. The key similarities and differences are as follows:

- *Message Source and Message Reliability:* The pilot study showed no main effects of these variables, but did show an interaction between the two. The main experiment showed a main effect of message source and no interaction. Once again, age and social media use, which played a large role in the reaction of the consumer panel to message source, were quite different between the two groups of participants. Even if we compare the pilot participants to the youngest cohort of the consumer panel, the Echo Boomers, we see differences. For example, 90 percent of the pilot participants reported using social media, whereas 80 percent of the Echo Boomers did so.

- Exploratory factor analyses of the pilot and main experiment instruments showed more independence of factors in the pilot than in the main instrument. This could have been an artifact of the clustering of all relevant items together in the pilot instrument, as opposed to the mixture of item types in the main experiment instrument.
- In both the pilot and main experiment, attitudes and subjective norms, but not perceived behavioral control, contributed significantly to intention, although the model predicted less variance in the pilot study than in the main experiment. In the pilot study, control beliefs significantly predicted variance in perceived behavioral control, but this finding was not confirmed by the main experiment. In the pilot experiment, normative beliefs failed to significantly predict variance in subjective norms, whereas this relationship was significant in the main experiment.

SUMMARY OF ANALYSIS

Several conclusions can be drawn from this analysis regarding the ability to predict intention to comply with a food safety message. In response to RQ1, messages communicated via a professional source (i.e. the CDC) produced greater intent to comply than messages communicated via user-generated sources (i.e. links to blog posts). *H1 is supported.*

A major factor contributing to the effect of message source on intent to comply was participation in social media. Participants who participate in social media showed the same intent to comply with messages from professional and user-generated sources.

Participants who do not participate in social media show significantly greater intent to comply in response to messages from professional sources than from user-generated sources. This factor in turn was influenced by cohort effects, as reported participation in social media was significantly affected by participant age.

In response to RQ2, messages that were confirmed had the same impact on intent as messages that were unconfirmed. *H2 is not supported.*

Message source (professional vs. user-generated) did not produce significant differences in intent to comply when information was confirmed; however, message source did produce significant differences in intent to comply when information was unconfirmed. Unconfirmed user-generated information had a weaker impact on intent to comply than unconfirmed professional information.

A major source of the weaker impact of user-generated information on intent was the age cohort of the participant. Cohorts did not differ in their response to professional sources of information. However, when considering user-generated sources, a significant linear relationship between intent and cohort was observed, with older cohorts showing much weaker intent than younger cohorts exposed to this message source.

In response to RQ3, the TRA provided a better model than the TPB for identifying the predictors of intention to comply with a food safety message. Statistically significant relationships are highlighted in Figure 4.7.

- Attitudes significantly predicted intent to comply (*H3a is supported)*, followed by subjective norms (*H3b is supported).*

- Perceived behavioral control did not predict intention to comply (*H3c* is not supported).
- Behavioral beliefs predicted attitudes (*H4a is supported)*.
- Normative beliefs predicted subjective norms (*H4b is supported)*.
- Control beliefs did not predict perceived behavioral control (*H4c is not supported)*.
- Behavioral beliefs, normative beliefs, and control beliefs were significantly correlated (*H5a, H5b, and H5c are supported)*.

Participants identified as high intenders answered all but 2 of the 32 items on the intention instrument significantly differently than participants identified as low intenders.

CHAPTER 5: CONCLUSIONS, LIMITATIONS AND FUTURE RESEARCH

SUMMARY OF MAIN FINDINGS

The main purpose of this study was to apply the TPB (Ajzen, 1985, 1991) to the intention to comply with a crisis message regarding food safety. Message source and message reliability were explored as possible moderators for the relationships between factors within the TPB model. Results were more consistent with predictions made by the TRA than by the TPB to account for significant variance in participants' intent to comply with a food safety message. Message source, but not message reliability, also influenced intention to comply, but did not moderate relationships within the TPB model.

Consistent with the work of Verbeke, Frewer, Scholderer, & DeBrandander (2007), intention to comply with a food safety message by participants in the present study was not normally distributed. Nearly one quarter of the participants (22.5 percent) chose the most extreme alternatives on the intent scale. Further research is needed to identify the rationale driving compliance and non-compliance. Hallman and Cuite (2010) reported that in two national surveys, a surprising 12 percent of Americans indicated that they had eaten a food they believed to have been recalled. Among the factors these researchers suggest as responsible for non-compliance are ignorance about the symptoms of food borne illness and optimistic bias (Weinstein, 1980).

Message Source

Intention to comply with the food safety message was greater when the message came from a professional source (i.e. the CDC) than from a user-generated source (links to blog posts on Facebook), which is consistent with the existing literature. Yifeng and

Sundar (2010) and Falnagin and Metzger (2007) reported similar results, with professional sources such as newspapers, television, and radio having greater impact than user-generated messages. People were more compliant with food safety messages originating with government agencies and organizations (Williams & Hammitt, 2001).

It is possible, however, that source effects represent a rapidly shifting phenomenon that requires frequent revisiting over time. The Edelman Trust Barometer (2010) reported that the credibility of television, radio, and newspapers as sources of information has declined significantly in recent years, especially among individuals in the older cohort age groups (Edelman Trust Barometer, 2010). Given the strong cohort effects evident in the current study, research results on the influence of messages arising from particular sources are best viewed as a snapshot in time that could quickly change.

Although the interaction between message source and reliability in this experiment fell short of significance, post hoc testing identified an interesting effect that is worthy of further investigation. The message source did not produce significant differences in intent to comply when the information was confirmed; however, when the participants were presented with the scenarios in which the information was not confirmed, more compliance occurred in response to the professional source than to the user-generated source of information.

The Impact of Age Cohorts

A major factor contributing to the stronger impact of professional sources relative to user-generated sources was a participant's age, which in turn predicted the likelihood that the participant would be an active user of social media. Approximately 65 percent of

participants reported being active on social media, but the likelihood of social media participation was different across age cohorts. Reported participation in social media grew from 37 percent in the Baby Bust cohort to 52 percent of Boomers to 70 percent in Gen X to 81 percent in Echo Boomers. It is very likely that the consumer panel used in this study overestimated the participation of older cohorts in social media, as individuals who are "computer-savvy" enough to participate in eRewards surveys are probably more likely to engage in other computer-mediated communication.

All age groups responded similarly to food safety messages appearing in professional sources. Members of Gen X and the Echo Boomer cohorts did not appear to respond differently to messages in professional and user-generated sources, but the older Boomers and Baby Busters did make a distinction, showing greater intent in response to receiving messages from a professional source. It is likely that the majority of the main effect of message source on intent can be traced back to these older cohorts and their lack of participation in and familiarity with user-generated content.

These results are likely to change as the age cohorts move through the population, new cohorts emerge, and existing cohorts change their patterns of social media use. The 2010 Pew Research Internet Project Report on Millennials (Echo Boomers) supported the differences in social media use among different age cohorts seen in this experiment. The Pew researchers found that Echo Boomers are actively embracing new technologies like social media and mobile devices and are using these media frequently to disclose information for others to see (Anderson & Rainie, 2010). At the same time, a Pew Internet Research Report focusing on senior citizens and social

media showed that the growth of seniors on social media nearly doubled from 2009 to 2010 (22% to 44%; Madden, 2010). The primary reasons for using social media among this specific age cohort population are to communicate with friends and family and to share information in the form of links, news, and status updates (Madden, 2010), which is also consistent with the demographic results of both the focus groups and consumer panel in this study.

Use of social media and user-generated content is becoming more the norm across age cohorts. User-generated sites like social media help bridge "generational gaps" between age cohorts where individuals from different ages can come together and communicate, share, and update with useful information in a virtual community built on relationships (Madden, 2010). It is likely that over time, the distrust of user-generated content evident among the older participants in this experiment will gradually dissipate as cohorts move through the population and older cohorts increase their use of social media.

Implications of Message Source Outcomes for Public Relations and Crisis Communication

It would be an oversimplification of the current results to assume that crisis messages are only effective if they are publicized by professional sources. Such a strategy would fail to take advantage of the rapid dissemination of information made possible by peer-to-peer messages in social media. While it is true that professional sources produced significant effects on intent to comply across all age groups, the current experiment does not provide insight into how quickly and completely that both

professional and user-generated outlets can provide information. Further research will be needed to elucidate these types of advantages or potential disadvantages.

Public relations professionals and crisis communicators need to understand the rapidly changing demographics of social media use, and tailor their sources of information to the target demographics. Although user-generated sources would appear to be a poor choice for sending a food safety message to seniors, at least today, user-generated messages could be very effective in reaching Echo Boomers. In other words, a single type of source is likely to be inadequate in reaching all publics. Constant monitoring of age cohorts' use of social media should assist professionals seeking to reach the most people in the shortest amount of time.

Message Reliability

Confirmed and unconfirmed food safety messages had equivalent effects on the intention to comply with a food safety message.

On the surface, researchers are often discouraged when a particular hypothesis fails to produce a significant effect, but frequently, evidence supporting the null hypothesis can actually be quite interesting, as it is in the case of H2. Logically, professionals might otherwise assume that confirmed information might be necessary before publics will respond to a food safety message. This could lead to hesitation in communicating a message, while all the facts of the case are gathered. At the same time, professionals might experience an inaccurate sense of invincibility when faced with unconfirmed messages if they have the mistaken impression that unconfirmed messages are unlikely to impact intention to comply with a message. Instead, the results of this

experiment indicate that publics very quickly blur any distinctions between "we think we might have a problem," and "we know we have a problem," and behave similarly in response to both types of message.

In a food safety crisis, this result implies that it is not necessary to wait in order to gather complete information before communicating a problem to the public. If there is a reason to believe that the public is in danger, a message stating that "we think there is a problem" and requests that the public regularly check back for further information is likely to elicit significant compliance. The risk in "speaking too soon," of course, is that of damaging an industry needlessly, if further study indicates that a problem is due to other than a wide-scale contamination of a food item. In addition, regular food safety crisis messages that turn out to be unnecessary could further the public's skepticism. As noted by focus group participants, some people already seem to believe that organizations are oversensitive to risk. Appearing to "cry wolf" could jeopardize public safety when a true crisis emerges.

These results also sound a cautionary note to professionals developing risk management plans. The reality that unconfirmed information carries the same weight as official, confirmed information leaves organizations vulnerable to rumor and misunderstanding. An interesting case in point emerged from the second focus group, in which one participant mentioned concerns about the presence of hexane in her veggie burgers. She attributed this "knowledge" to a post appearing on Facebook. Further research indicated that the source of the hexane story was a blog post on *Mother Jones,* and that the hexane claim in the blog post was not confirmed by other venues (Messina,

2010). Nonetheless, it was obvious from the focus group participant's statements that the *Mother Jones* blog post (Butler, 2010) was accepted as confirmed information, that the contradictory messages had either not been received or had been discounted, and that she intended to avoid commercially produced veggie burgers as a result.

One of the obvious follow-up studies to the current research would be to investigate situations in which competing messages, like the hexane case or the dispute over the safety of high fructose corn syrup, are presented to consumers using both professional and user-generated sources. Under what circumstances would a person believe one source and type of information over the other?

The Theory of Planned Behavior and the Theory of Reasoned Action

As predicted by the TPB, attitudes and subjective norms explained the vast majority of variance in participants' intent to comply with a food safety message. In addition, as predicted by the TPB, behavioral beliefs predicted attitudes and normative beliefs predicted subjective norms. Behavioral beliefs, normative beliefs, and control beliefs were significantly correlated with one another.

Unlike predictions of the TPB, perceived behavioral control failed to explain significant variance in intent to comply. In addition, control beliefs failed to predict variance in perceived behavioral control. In light of these outcomes, the TRA appears to fit the results of this dissertation better than the TPB.

As mentioned in the literature review of this dissertation, the lack of a behavioral outcome measure might have the effect of masking the effects of perceived behavioral control. Although these results could also represent the failure to identify key control

beliefs during the elicitation studies with focus groups, another possible reason for this failure was the relatively low variance of the perceived behavioral control variable. Unlike the other variables, participants showed high levels of agreement on perceived behavioral control. Participants reported feeling very efficacious regarding their ability to control eating American cheese products. In one meta-analytic review of the TPB, Armitage and Conner (2001) note that:

> A number of previous meta-analyses have suggested that the TPB adds very little explained variance beyond that which is explained by the TRA (e.g. Sutton, 1998). One possibility is that as volitional control decreases, the influence of PBC on intention and behaviour increases, although even studies designed to directly test this hypothesis have not produced clear-cut findings (e.g. Madden, Ellen, & Ajzen, 1992; p. 474).

The very high sense of volitional control observed in this dissertation could therefore have masked any contributions of perceived behavioral control to intent to comply with a food safety message. It is possible that perceived behavioral control might have played a larger part in explaining intent if scenarios had been used that produced a more varied sense of volitional control. For example, some ingredients are quite difficult to identify in a commercial product, such as the presence of peanut residue. Future research could attempt to replicate the current results while introducing this type of less controllable situation.

The extreme perceived behavioral control over food safety observed in this study is consistent with previously identified instances of "unrealistic optimism" (Weinstein,

1980; Hallman & Cuite, 2010). This result indicates that the public needs more education, training, and awareness of the risks involved with the consumption of contaminated food. Effective messages in a food crisis should take this high level of perceived control into account, recognizing that this is a significant obstacle to overcome. The high number of extremely non-compliant responders (13.8 percent of the sample) observed in the current results reinforces the point made by Hallman and Cuite (2010) that "simply telling people about a food recall is often not enough to motivate them" (p. 24).

The TPB provided an opportunity to explore the contributions of specific attitudes and subjective norms to participants' intent to comply with a food recall. Among the attitudes, convenience appeared to be the biggest barrier to compliance. Food crisis communicators are attempting to address this issue in a number of creative ways. For example, supermarkets are using their customer rewards systems to "push" specific messages to consumers who purchased recalled items in their stores (Hallman & Cuite, 2010). Applications for smartphones compare FDA and USDA recall information with a consumer's virtual shopping list to alert him or her to a recalled purchase. The significant contribution of subjective norms to intent to comply, particularly in the form of pressure from friends, emphasizes the potential of using social media, such as Facebook, to motivate the public's compliance with food safety messages.

Unlike previous work on predicting compliance with food safety messages (Philip & Anita, 2010), in which subjective norms were reported to have the greatest impact on intention to comply, the current results demonstrated that participant attitudes had the

greatest impact on intention to comply. The reasons for this discrepancy are currently unknown, and require further analysis and research.

Exploration of Possible Moderation of the TPB by Message Source and Message Reliability

Message source and message reliability did not serve as moderators within the overall TPB model, in spite of the direct impact of message source on the dependent variable of intent. This result implies that attitudes, subjective norms, and perceived behavioral control operate somewhat independently of message variables, although further research will be necessary to confirm this interpretation.

The most likely element of the TPB to participate in interactions with message source and message reliability was subjective norms, as this variable relates to influence via social connection with the participant. Further research could evaluate social connectivity on social media (e.g. number of Facebook friends) and offline (e.g. number of confidants; Freberg, Adams, McGaughey, & Freberg, 2010) to see if high or low levels of social connectivity produce more or less social influence on intent to comply with a food safety message.

OVERALL IMPLICATIONS FOR PUBLIC RELATIONS

Several valuable insights emerged from the results of current study that can benefit the public relations academic and practitioner communities. Although many principles and best practices are consistent across traditional and new media, such as the need to build relationships with audiences and the use of clear, concise message strategies, other aspects require further research and potential modifications.

First, the existing literature in public relations has concentrated on the role of official spokespersons in communicating messages to their various audiences (Wright & Hinson, 2008; Kelleher, 2008; Grunig & Grunig, 2000). The model for communication that dominates the field is the dissemination of information from one to many, with reciprocal opportunities for the many to interact with the one.

Although this model is likely to continue to hold among older cohorts, public relations professionals and researchers cannot assume that this is a static situation. Instead, emerging technologies providing platforms for distributing user-generated content have created a virtual environment where everyone (users as well as professional sources) has opportunities to participate by sharing and disseminating information during a crisis (Shklovski et al., 2010). This environment adds the potential of a many-to-many channel of communication to the traditional one-to-many channel. Because the user-generated source is equally influential as the professional source among younger cohorts, the user-generated environment can be expected to increase in significance over time.

Second, official messages have more competition for audience attention in social media. On social media, users create, share, and comment on content while bypassing the traditional gatekeepers of information (Waters et al., 2009). Organizations and public relations professionals will have to be active participants in the conversation or their voices could get lost among all the others commenting, sharing, and voicing opinions online. Organizations should identify and engage with the online voices of relevant social media influencers (SMIs) rather than leaving these to chance (Freberg, Graham, McGaughey, & Freberg, 2011). The implications of the current finding that confirmed

and unconfirmed information produce equal effects on intent to comply with a message speak to the urgency of understanding how to be heard above the crowd (Vieweg et al., 2008).

Rising above the crowd of online voices can be achieved with strong relationships and good message strategies. Public relations professionals must move beyond an understanding of organization-public relationships (Ledingman, 2000; Grunig & Grunig, 2000) to a grasp of the risks and potential to be found in the bigger communities using social media (Anderson & Rainie, 2010). Just as marketing and advertising professionals are taking advantage of informal online networks to "spread the word" (e.g. by showing which brands your Facebook friends have "liked"), public relations professionals should explore the implications of social networks for their messages and reputation management.

However, traditional message strategies do continue to work in the online environment. Taking advantage of opportunities for two-way communication allows both parties to share information, while furthering an image of an organization as trustworthy and credible (Ropeik, 2006). Presenting information in an honest, accurate, and transparent manner also enhances credibility (Vennette, 2006; Reynolds & Seeger, 2005; Rohr et al., 2005). Ultimately, managing communication channels, messages, and relationships has always been good practice, but good, strategic communication management becomes even more important given the immediacy and explosive growth of social media.

OVERALL IMPLICATIONS FOR CRISIS COMMUNICATIONS

The current results have several implications for the ability of crisis communicators to provide persuasive messages that produce optimum compliance.

The extreme perceived behavioral control over food safety observed in this study indicates a need for more education, training, and awareness of the risk of contaminated food. Participants in both the focus group and experiment phases of this dissertation recognized the risk of contaminated food when eating in restaurants, but did not feel the same concern or urgency about foods prepared in the home. Effective messages in a food crisis should take this high level of perceived control into account, recognizing that this is a significant obstacle to overcome.

The importance of selecting the right media for the distribution of messages is emphasized by the current results. Understanding audience segmentation, especially when it pertains to use and trust of new technology, will allow the crisis communicator to distribute messages as quickly and effectively as possible. Social media appeared to be an effective channel for about two-thirds of the population, specifically the younger cohorts, but were an ineffective channel for the remaining third. However, the use of social media by age cohorts represents a rapidly changing phenomenon in need of constant research and updates ("Generation 2010 Report," 2010).

As more people begin to use and trust social media, significant opportunities will emerge for crisis communicators. Social media can provide means for a more even distribution of information and coordinated effort that will be beneficial for stakeholders involved in a disaster situation. Crisis communication professionals can actively

communicate via text message or other formats to establish credibility and authority as a primary source of information in a disaster situation, while connecting online via mobile devices can establish a stronger virtual community that will be more informed and engaged in the disaster recovery and implementation process (Sutton, 2010).

The current research provides a cautionary note for crisis communicators. The current results suggest that compliance with a crisis communication message is not well predicted by whether or not the message contains confirmed information. Although this tendency can be beneficial, in the sense that audience responses will not be delayed by lack of confirmation, this result also implies that audiences are subject to persuasion by less-than-reliable information. Given the many voices present on social media, an audience might be pushed in a direction that is contrary to their best interests. Once again, having trusting, reciprocal relationships prior to any emergency will help the voice of crisis communicators to rise above the rest.

APPLICATION TO A CRISIS CASE STUDY: 2011 JAPANESE FOOD RADIATION CRISIS

The results of this dissertation have implications not only for theory development and further understanding of a phenomenon from a scientific perspective, but also for application to campaigns and real-life scenarios.

One current case study that can illustrate the application of the current research findings is the recent tsunami that hit Japan in March 2011. On March 11, 2011, at 2:46 PM, an 8.9 magnitude earthquake hit the coast of Japan about 231 miles away from Tokyo ("Japan earthquake and tsunami: Timeline"). This crisis became a story that was

shared not only in traditional media, but across user-generated content sites. The Pew Research Center reported that the Japanese quake and tsunami events that took place during the week of March 7 – 11th, 2011 counted for 20 percent of the top links shared among international stories on Twitter ("Twitter Responds to Japan's Disaster," 2011). Sixty-six percent of the news links were about the Japanese Quake and Tsunami, which made it the number one story ("Twitter Responds to Japan's Disaster," 2011). Within just a few days, the Japanese tsunami was number three on the list for the top foreign disasters that people were following, ranking behind the Haiti Earthquake in 2010 and the tsunami that hit in the Indian Ocean in 2005 ("Strong Public Interest in Japan Disaster," 2011).

Apart from the fears of radiation, nuclear power plant failures, and the deaths resulting from the earthquake and tsunami, a growing concern was food contamination as a result of exposure to radiation from the nuclear plants. Milk and spinach products were the main food items that drew the most concern for professionals in the health and food industry and crisis communication professionals. As a result of these concerns, the Japanese government has initiated several restrictions regarding these products after there were signs of two radioactive byproducts in both milk and spinach (iodine and cesium) that were sold around the Fukushima nuclear plant ("Japan radiation contaminates food sent beyond affected area," 2011). Crisis messages included a statement from Japan's Chief Cabinet Secretary, Yukio Edano, who reported that the radiation threats were not immediate, and that people should remain calm ("Japan Earthquake: Radiation found in food near nuclear plant," March 19, 2011).

Another professional source located in the United States, the USADA, provided a statement from the US Agriculture Secretary, Tom Vilsack, in which he discussed the current food safety issue in Japan:

> *I know that there are many questions Americans might have about the terrible tragedies in Japan. I want to reassure the American public that at this time we have no reason to suggest that any of our meat, poultry, or processed egg products are unsafe for consumption due to the recent events in Japan. Our food imports from Japan are quite limited. What we do import must meet the safety standards of this country. We monitor and inspect imports to insure compliance with those standards. Should any risk with imports arise, we have procedures and processes in place to identify problems and deal with them. While we continue to offer aid and assistance to the Japanese we do not intend to lose sight of our core mission which is make sure our food remains safe, abundant, and affordable. (USADA Statement Release No. 0130.11, March 18, 2011).*

One of the risks discussed in this current case is the lack of education and understanding of the impact and severity of radiation on food contamination ("Radiation in Japan's food supply: Dangerous or benign?" March 22, 2011). Emergence of conflicting messages from various sources has occurred in this particular case study, which supports the need expressed in this dissertation for further research on conflicting messages from two different sources.

Both professional sources and user-generated sources are being used to communicate messages in this crisis. Twitter has been used to discuss various opinions about the multiple issues associated with the tsunami and food safety crisis as well as to share information about where people can donate to relief efforts ("Amid tweeted frustration, Japan may take control of TEPCO," April 1, 2011). Within Twitter, users were assigning hashtags to their updates so these were easily searchable by others who are interested in the same information. Some of the hashtags that were implemented during this crisis included #Japan, #JPQuake, #JapanQuake, #PrayForJapan, #Tsunami, and #TsunamiCharity ("Twitter Hope 140 Blog," n.d.).

Another social media site used during this crisis was Mixi, a social networking site in Japan. One user described Mixi as a place where people "rely on this for everything, how else are you supposed to get this kind of information," ("IPhone versus Soviet Subterfuge make Fukushima no Chernobyl," March 28, 2011, ¶14).

Other social media platforms that have been used during this crisis include crowdsourcing websites, which allow users to upload information about radiation testing in Japan (RDTN.org), video sharing websites to allow users to help communicate with victims of the tsunami and earthquake (YouTube), integrated sites with translation capabilities and QR codes embedded for gaining access to information via mobile devices (Google Crisis Response Site), and donation to specific causes that are integrated into social games on Facebook (Zynga games like Farmville and Frontierville).

The issue of control over information has played an important role in the recent events in Japan. Traditionally, governments and other established organizations have had

the opportunity to control and manage the information being communicated in similar crises. However, social media that allow users to share and redistribute information have allowed the public to increase its knowledge and understanding of the situation from multiple sources, which has changed the crisis communications environment in this particular case ("IPhone versus Soviet Subterfuge make Fukushima no Chernobyl," March 28, 2011).

Understanding the implications of obtaining information from a professional source (ex. Japanese Government and government officials) compared to a user-generated source (Twitter and Mixi) is essential. The messages communicated, like the ones in the scenarios in this dissertation, differed in certainty. Knowing that confirmed and unconfirmed messages would have the same impact on public compliance with safety messages could guide messages like the ones communicated by Edano and Vilsack. Suggestions that the public remain calm or wait for further information might easily be offset by unconfirmed reports from other sources. Official messages are now competing with user-generated sites that allowed users control in sharing information with others.

The events in Japan have similarities to the scenarios used in this research study. First, both professional and user-generated messages are being presented to the public. Some information reliability seems very high, while other information is unconfirmed. These messages are being delivered against a context of low levels of awareness related to radiation risks of food. Based on the results of this dissertation, Japanese officials might be advised to acknowledge the strong impact of user-generated sources. They should not restrict themselves to official websites, but rather they should repeat their

messages using Mixi and Twitter. A recognition that unconfirmed information might panic people means that confirmed information should be presented with enough frequency and reach that it can rise above any existing levels of unconfirmed information on user-generated sites.

The Japanese authorities should also take age cohort and social media use into account in preparing their messages. This would require the repetition of the current research within the cultural domain of Japan. Use of social media might be quite different in Japan than in the United States, and any differences could be crucial in determining market segmentation for messages.

The current research also has implications for U.S. officials attempting to produce messages for the American public. Food products shipped from Japan make up 4 percent of the supply imported to the U.S., with the most common food products are seafood, snacks, and processed fruits and vegetables ("Are food imports from Japan safe?, April 2, 2011). As noted in the focus groups for the current research, there are strong negative attitudes about imported food already, and the case of Japanese imports is likely to raise those concerns in the near future. This case raises opportunities for researchers interested in social media and crisis messages to explore the phenomena in interesting cross-cultural ways.

LIMITATIONS AND FUTURE RESEARCH

This research has several limitations. First, the focus groups were recruited from convenience samples, and although similar in many respects to the consumer panel, participants were not representative of the U.S. population. Future research could

evaluate potential differences between food safety crisis situations and recommendations in different regions. Food safety attitudes and compliance with recommendations might differ when comparing rural areas where farming is prevalent to urban or suburban areas.

The focus groups were constructed to supply data necessary for the construction of the TPB instrument (Francis et al., 2004), but the resulting data from these groups should not be extended to other types of analysis. Data collection did not reach the point of saturation or redundancy, thus challenging the rigor of any broadening of the data analysis and related discussions beyond the limits of the stated purpose.

Although realism checks on scenarios were performed as part of the process of constructing the pilot and main experiment instruments, no further realism checks were conducted. The scenarios were revised substantially as a result of the changes made in response to the realism checks, such as the removal of the largely unfamiliar term "hashtag" from the user-generated scenarios, but it would have been optimum to have further quantitative measures to assess the results of these changes. In future research using these methods, the researcher would repeat the realism checks following any revisions made to the scenarios and in the pilot and main experiments.

Based on O'Keefe (2003), no manipulation checks were done on the message variations during the pilot study. Use of manipulation checks would have helped to confirm that the experiment worked and might have contributed to greater effect strengths. In addition, item-total correlations and exploratory factor analysis were not conducted until after the final instrument had been presented to the participants in the

main experiment. Had this been done prior to the main study, further adjustments of the instrument might have strengthened the effects of the experiment.

While using consumer panels can provide a more representative sample of the population than using undergraduate students, limitations to using consumer panels for research studies remain. Although the researcher could specify certain attributes of participants, eRewards was responsible for recruiting and selection. The researcher might have wished to have equal numbers of males and females, for example. In addition, by definition, participants recruited by eRewards represent Internet users only, and very likely represent more skilled Internet users when compared to the general population.

The TPB focuses on intent, but professionals responsible for public safety need to predict not just intent, but actual compliance with safety messages. Given the regular occurrence of food recalls, it is likely that consumer panels have had some experience with recalls, and could comment about their prior behavior. In other studies using the TPB in this manner, past behavior in similar situations serves as a strong predictor for intent (Ajzen, 1991; Ajzen, 2002). Additional research could include past behavior in a food recall situation, which would provide important insights into the relationships between intent and actual behavior.

One of the major finding in this study was the high level of perceived control evidenced by both focus group and consumer panel participants regarding food safety. As this finding did not conform to the TPB, further research is warranted. As suggested previously, control could be manipulated by embedding the contaminated food item as an ingredient in a complex food product. Another aspect affecting control was whether or

not a person prepared his or her own food or ate in a restaurant. Other control variables that emerged in the current study that could be the foundation of future research include the localization of the food crisis. Participants in the focus groups appeared to be very sensitive to the geographical source of their foods. These aspects of control could be incorporated into scenarios easily. In addition, the intention variable chosen for this dissertation (I expect/ want/intend to stop buying American cheese) precluded adding additional interesting variables to the instrument, as these were incompatible with the choice of intention statement. In future research, scenarios featuring packaged, foreign, or restaurant foods could be incorporated to explore the perceived behavioral control variable further.

Related to further experimental manipulations of perceived behavioral control would be further analysis of perceived risk, which has been found to contribute to people's willingness to take action to avoid other negative health-related outcomes (Weinstein, 1993). For example, the current research did not assess whether or not the participant usually ate the food in question, which might influence the personal relevance of the scenarios. If a person normally avoided cheese products, the personal relevance of a cheese recall would be quite different from the case of a person who ate the food product daily.

Among the other manipulations that might produce useful results in this type of model would be comparisons between traditional sources (newspaper, radio, television) and online sources. Competing messages from different sources would also be

interesting. For example, the hexane—veggie burger controversy could form the basis of comparisons between official industry and blog-source messages.

Another major extension of this research would be to further understanding of audience segmentation relevant to the use of social media and the persuasive power of social media. How will age, education, and other demographic variables combine and interact to predict audience response to social media messages over time? What motivates use of social media? Who are the individuals, even in the younger cohorts, who do not use social media? What are their reasons for lack of use?

Narrative analysis also could be used to determine the social construction of meaning in the online dialogue about food safety crises on user-generated and professional sites, in a manner similar to analyses conducted by Palen and Vieweg (2007) following the Virginia Tech and Northern Illinois University shootings. Such a study could build upon this dissertation to show the impact of having a platform where concerned family members, friends, community residents, and media could get information about a crisis while building a virtual community.

Cognitive theories like the TPB have been criticized for excluding a consideration of affect (Dutta-Bergman, 2005). Given the strong emotions associated with eating (Rozin, 2005; Moore, 1957), as well as the rather impulsive aspects of food-related decision-making, the failure to assess emotions might weaken the TPB's ability to predict compliance with a food safety message. Future research assessing participants' emotional reactions to food, food safety, and food borne illness and incorporation of

these factors into a revised model might be particularly useful. Personality attributes, such as strength of disgust reactions, might also contribute to a more complete model.

One approach to predicting audience compliance that is currently underutilized by public relations, along with most of the social sciences, is to construct a mathematical decision model. Markov Chain Modeling allows researchers to make estimates based on simulations of an event (Gilks, 2005). Using this approach, a researcher could take a small sample of the population, give them a target message with features of interest, and determine whether or not they are more likely or less likely to be compliant.

According to this model, the researcher could establish four classes of compliance: very likely to comply (4), somewhat likely (3), unlikely (2), and no compliance (1), illustrated in Figure 5.1.

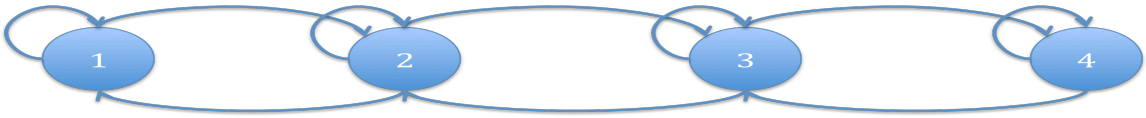


Figure 5.1 Relationships Between Compliance States

Each compliance state has a certain probability of remaining unchanged despite the exposure to the target message, which is represented by the recursive arrow. Each compliance state will have a probability of moving into the next higher compliance state, which is represented by the arrow moving right. A single compliance state will have a probability of moving into the lower compliance state if they feel let down by the technique. By determining these transition probabilities, researchers can determine long-term effects of messaging on the population, and what the transition probabilities need to

be (i.e. how effective the messaging must be) in order to move the maximum amount of people into the higher compliance categories.

REFERENCES

Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuhl & J. Beckman (Eds.), *Action-control: From cognition to behavior* (pp. 11-39). Heidelberg, Germany: Springer.

Ajzen, I. (1991a). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*(2), 179-211. doi: 10.1016/0749-5978(91)90020-t

Ajzen, I. (1991b). Benefits of leisure: A social psychological perspective. In B. L. Driver, P. J. Brown & G. L. Peterson (Eds.), *Benefits of leisure.* (pp. 411-417). State College, PA: Venture Publishing.

Ajzen, I. (2001). Nature and operation of attitudes. *Annual Review of Psychology, 52*, 27-58.

Ajzen, I. (2002a). Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior. *Journal of Applied Social Psychology, 32,* 665-683.

Ajzen, I. (2002b). Residual effects of past on later behavior: Habituation and reasoned action perspectives. *Personality and Social Psychology Review, 6,* 107-122.

Ajzen, I., & Albarracín, D. (2007). Predicting and changing behavior: A reasoned action approach. In I. Ajzen, D. Albarracín, & R. Hornik (Eds.), *Prediction and change of health behavior: Applying the reasoned action approach* (pp. 3-21). Mahwah, NJ: Lawrence Erlbaum Associates Publishers.

Ajzen, I., Brown, T. C., & Carvajal, F. (2004). Explaining the discrepancy between intentions and actions: The case of hypothetical bias in contingent valuation.

Personality and Social Psychology Bulletin, 30(9), 1108-1121. doi: 10.1177/0146167204264079

Ajzen, I., & Driver, B. L. (1991). Prediction of leisure participation from behavioral, normative, and control beliefs: An application of the theory of planned behavior. *Leisure Sciences, 13*(3), 185-204. doi: 10.1080/01490409109513137

Ajzen, I., & Driver, B. L. (1992a). Application of the theory of planned behavior to leisure choice. *Journal of Leisure Research, 24*(3), 207-224.

Ajzen, I., & Driver, B. L. (1992b). Contingent value measurement: On the nature and meaning of willingness to pay. *Journal of Consumer Psychology, 1*(4), 297-316. doi: 10.1016/s1057-7408(08)80057-5

Ajzen, I., & Fishbein, M. (1977). Attitude-behavior relations: A theoretical analysis and review of empirical research. *Psychological Bulletin, 84,* 888-918.

Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice-Hall.

Ajzen, I., & Fishbein, M. (2004). Questions raised by a reasoned action approach: Comment on Ogden (2003). *Health Psychology, 23*(4), 431-434. doi: 10.1037/0278-6133.23.4.431

Ajzen, I., & Madden, T. J. (1986). Prediction of goal-directed behavior: Attitudes, intentions, and perceived behavioral control. *Journal of Experimental Social Psychology, 22*(5), 453-474. doi: 10.1016/0022-1031(86)90045-4

Ajzen, I., & Manstead, A. S. R. (2007). Changing health-related behaviours: An approach based on the theory of planned behaviour. In M. Hewstone, H. A. W.

Schut, J. B. F. De Wit, K. Van Den Bos & M. S. Stroebe (Eds.), *The scope of social psychology: Theory and applications.* (pp. 43-63). New York, NY US: Psychology Press.

Albarracin, D., Johnson, B. T., Fishbein, M., & Muellerieile, P. A. (2001). Theories of reasoned action and planned behavior as models of condom use: Meta-analysis. *Psychology Bulletin, 127*, 142-161.

Aldrich, R. S., & Cerel, J. (2009). The development of effective message content for suicide intention. *Crisis, 30*(4), 174-179.

Amid tweeted frustration, Japan may take control of TEPCO. (2011, April 1). Retrieved on April 2, 2011 from http://www.time.com/time/world/article/0,8599,2062591,00.html

Anderson, J., & Rainie, L. (2010, July 9). Millennials will make online sharing in networks a lifelong habit. Retrieved on January 5, 2011 from http://www.pewinternet.org/Reports/2010/Future-of-Millennials.aspx

Are food imports from Japan safe? (2011, April 2). Retrieved on April 2, 2011 from http://news.consumerreports.org/health/2011/04/are-food-imports-from-japan-safe.html

Argenti, P. A., & Barnes, C. M. (2009). *Digital Strategies for Powerful Corporate Communications*. New York: McGraw Hill.

Armitage, C. J., & Conner, M. (1999). The theory of planned behaviour: Assessment of predictive validity and "perceived control." *British Journal of Social Psychology, 38*, 35-54.

Armitage, C. J., & Conner, M. (2001). Efficacy of theory of planned behavior: A meta-analytic review. *British Journal of Psychology, 40*, 471-499.

Arnold, M. J., & Reynolds, K. E. (2003). Hedonic shopping motivations. *Journal of Retailing, 79*, 77-95.

Bandura, A. (1977). Toward a unifying theory of behavioral change. *Psychological Review, 84*, 191-215.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173-1182. doi: 10.1037/0022-3514.51.6.1173

Barton, L. (2001). *Crisis in organizations II* (2nd ed.). Cincinnati, OH: College Divisions South-Western.

Benoit, W. L. (1995). *Accounts, excuses, apologies: A theory of image restoration discourse.* Albany, NY: State University of New York Press.

Benoit, W. L. (1997). Image repair discourse and crisis communication. *Public Relations Review, 23*(2), 177.

Bernhardt, J. M., & Felter, E. M. (2004). Online pediatric information seeking among mothers of young children: Results from a qualitative study using focus groups. *Journal of Medical Internet Research, 6*(1), e7. doi: 10.2196/jmir.6.1.e7

Böcker, A., & Henning Hanf, C. (2000). Confidence lost and – partially – regained. *Journal of Economic Behavior & Organization, 43*, 471 – 485.

Botan, C. (1993). Introduction to the paradigm struggle in public relations. *Public Relations Review, 19*(2), 107-110.

Boulding, W., & Purohit, D. (1996). The price of safety. *Journal of Consumer Research, 23*(1), 12-25.

boyd, d. m. (2006). Friends, friendsters, and MySpace top 8: Writing community into being social network sites. *First Monday, 11*(12), 1-19.

boyd, d. m. (2007). Social network sites: Public, private, or what? Retrieved July 5, 2009, from http://kt.flexiblelearning.net.au/tkt2007/?page_id=28

boyd, d. m., & Ellison, N. B. (2008). Social network sites: Definition, history, and scholarship. *Journal of Computer-Mediated Communication, 13*, 210-230.

Bracken, C. C. (2006). Perceived source credibility of local television news: The impact of television form and presence. *Journal of Broadcasting & Electronic Media, 50*, 723-741.

Broom, G. M., Casey, S., & Ritchey, J. (1997). Toward a concept and theory of organization public relationships. *Journal of Public Relations Research, 9*(2), 83-98.

Broom, G. M., & Dozier, D. M. (1983). An overview: Evaluation research in public relations. *Public Relations Quarterly, 28*(3), 5-8.

Bunge, M. (1967). *Scientific research. Strategy and philosophy.* Berlin: Springer-Verlag.

Burnett, J. J. (1998). A strategic approach to managing crises. *Public Relations Review*, *24*(4): 475-488.

Butler, K. (2010). Which veggie burgers were made with a neurotoxin? Retrieved January 30, 2011, from http://motherjones.com/blue-marble/2010/04/which-veggie-burgers-contain-neurotoxin

Cacioppo, J. T., Petty, R. E., Feinstein, J. A., & Jarvis, W. B. G. (1996). Dispositional differences in cognitive motivation: The life and times of individuals varying in need for cognition. *Psychological Bulletin, 119*, 197-253.

Cacioppo, J. T., Petty, R. E., & Kao, C. F. (1984). The efficient assessment of need for cognition. *Journal of Personality Assessment, 48*(3), 306-307. doi: 10.1207/s15327752jpa4803_13

Cacioppo, J. T., Petty, R. E., & Morris, K. J. (1983). Effects of need for cognition on message evaluation, recall, and persuasion. *Journal of Personality and Social Psychology, 45*(4), 805-818. doi: 10.1037/0022-3514.45.4.805

Cacioppo, J. T., Semin, G. R., & Berntson, G. G. (2004). Realism, instrumentalism, and scientific symbiosis. *American Psychologist, 59*(4), 214-223.

Cadotte, E. R., Woodruff, R. L., & Jenkins, R. L. (1987). Expectations and norms in models of consumer satisfaction. *Journal of Marketing Research, 24*(3), 305-314.

Calder, B. J., Phillips, L. W., & Tybout, A. M. (1982). The concept of external validity. *Journal of Consumer Research,, 9*, 240-244.

Celuch, K., Lust, J., & Showers, L. (2001). A test of a model of consumers' responses to product-manual safety information: A replication and extention. *Journal of Applied Social Psychology, 31*(6), 1279-1299.

Centers for Disease Control and Prevention (CDC; 2005). Foodborne illness: Frequently asked questions. Retrieved on January 5, 2011 from http://www.cdc.gov/ncidod/dbmd/diseaseinfo/files/foodborne_illness_FAQ.pdf

Chattoe, E. (2002). Building empirically plausible multi-agent systems: A case study of innovation diffusion. In K. Dautenhahn, A. Bond, D. Canamero & B. Edmonds (Eds.), *Socially intelligent agents: Creating relationships with computers and robots* (pp. 109-116). Dordrecht: Klewer.

Churchill, G. A., Jr. (1979). A paradigm for developing better measures of marketing constructs. *Journal of Marketing Research, 16*, 64-73.

Cleays, A., Cauberghe, V., & Vyncke, P. (2010). Restoring reputations in times of crisis: An experimental Situational Crisis Communication Theory and the moderating effects of locus of control. *Public Relations Review, 36*, 256-262.

Cohen, L., Manion, L., & Morrison, K. (2007). *Research methods in education*. New York: Routledge.

Conner, M., Kirk, S. F., Cade, J. E., & Barrett, J. H. (2003). Environmental influences: factors influencing a woman's choice to use dietary supplements. *Journal of Nutrition, 133*(6), 1978S-1982S.

Cooke, R., & French, D. P. (October 2008). How well do the theory of reasoned action and theory of planned behaviour predict intentions and attendance at screening programmes? A meta analysis. *Psychology and Health, 23*(7), 745-765.

Coombs, W. T. (1993). Philosophical underpinnings: Ramifications of a pluralist paradigm. *Public Relations Review, 19*(2), 111-119.

Coombs, W. T. (1995). Choosing the right words. *Management Communication Quarterly, 8*(4), 447.

Coombs, W. T. (1998). The Internet as potential equalizer: New leverage for confronting social irresponsibility. *Public Relations Review, 24*(3), 289.

Coombs, W. T. (1999). Information and compassion in crisis responses: A test of their effects. *Journal of Public Relations Research, 11*(2), 125.

Coombs, W. T. (2002). Deep and surface threats: conceptual and practical implications for "crisis" vs. "problem." *Public Relations Review, 28*(4), 339.

Coombs, W. T. (2004). Impact of past crises on current crisis communications. *Journal of Business Communication, 41*(3), 265-289. doi: 10.1177/0021943604265607

Coombs, W. T. (2006). The protective powers of crisis response strategies: Managing reputational assets During a Crisis. *Journal of Promotion Management, 12*(3/4), 241-260. doi: 10.1300/J057v12n03•13

Coombs, W. T. (2007a). Attribution theory as a guide for post-crisis communication research. *Public Relations Review, 33*(2), 135-139. doi: 10.1016/j.pubrev.2006.11.016

Coombs, W. T. (2007b). *Ongoing crisis communication: Planning, managing, and responding* (2nd ed.). Thousand Oaks, CA: Sage.

Coombs, W. T. (2009). The future of excellence in public relations and communication management: Challenges for the next generation. *Journal of Communication Management, 13*(4), 381-383. doi: 10.1108/13632540911004641

Coombs, W. T., & Holladay, S. J. (1996). Communication and attributions in a crisis: An experiment study in crisis communication. *Journal of Public Relations Research, 8*(4), 279-295.

Coombs, W. T., & Holladay, S. J. (2008). Comparing apology to equivalent crisis response strategies: Clarifying apology's role and value in crisis communication. *Public Relations Review*, *34*, 252–257.

Coombs, W. T., & Holladay, S. J. (2009). Communication and attributions in a crisis: An experimental study in crisis communication. *Public Relations Review, 35*, 1-6.

Coombs, W. T., & Holladay, S. J. (2010). *The handbook of crisis communications* (Vol. 1st). Malden, MA: Blackwell Publishing Ltd.

Costello, A. B., & Osborne, J. W. (2005). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical Assessment, Research & Evaluation, 10*(7). Retrieved on April 14, 2011 from http://pareonline.net/pdf/v10n7.pdf

Cudeck, R., & O'Dell, L. L. (1994). Applications of standard error estimates in unrestricted factor analysis: Significance tests for factor loadings and correlations. *Psychological Bulletin, 115*, 475-487.

Cutlip, S.M., & Center, A.H. (1971). *Effective public relations*. Englewood Cliffs, NJ: Prentice-Hall, Inc.

Dabholkar, P. A. (1994). Incorporating choice into an attitudinal framework: Analyzing models of mental comparison processes. *The Journal of Consumer Research, 21*(1), 100-118.

Daft, R. L. (1985). Why I recommend that your manuscritp be rejected and what you can do about it. In L. L. Cummings & P. Frost (Eds.), *Publishing in the organizational sciences* (pp. 164-182). Homewood, IL: Richard D. Irwin.

de Jonge, J., van Trijp, H., R.J., R., & Frewer, L. (2010). Consumer confidence in the safety of food and newspaper coverage of food safety issues: A longitudinal perspective. *Risk Analysis, 30*(1), 125-142.

de Jonge, J., van Trijp, H., Renes R.J., & Frewer, L. (2007). Understanding consumer confidence in the safety of food: Its two-dimentional structure and determinants. *Risk Analysis, 27*(3), 729-740.

de Jonge, J., van Trijp, H., van de Lans, I. A., R.J., R., & Frewer, L. (2008). How trust in institutions and organizations builds general consumer confidence in teh safety of food: A decomposition of effects. *Appetite, 51*(311-317).

DeWaal, C. S. (2003). Safe food from a consumer perspective. *Food Control, 14*, 75-79.

Dillard, J. P., Shen, L., & Vail, R. G. (2007). Does perceived message effectiveness cause persuasion or vice versa? 17 consistent answers. *Human Communication Research, 33*, 467–488.

Dillman, D. A. (2000). *Mail and internet surveys: The tailored design method* (2nd ed.). Hoboken, NJ: John Wiley & Sons.

Dozier, D. M., & Broom, G. M. (1995). Evolution of the manager role in public relations practice. *Journal of Public Relations Research, 7*(1), 3-26.

Dutta-Bergman, M. J. (2005). Theory and practice in health communication campaigns: A critical interrogation. *Health Communication, 18*(2), 103-122. doi: 10.1207/s15327027hc1802_1

Edelman Trust Barometer (2010). Retrieved on December 1, 2010 from http://www.edelman.com/trust/2010/

Eyrich, N., Padman, M. L., & Sweetser, K. D. (2008). PR practitioners' use of social media tools and communication technology. *Public Relations Review, 34*(4), 412-414. doi: 10.1016/j.pubrev.2008.09.010

Fearn-Banks, K. (2001). Crisis communication: A review of some best practices. In R. L. Heath (Ed.), *Handbook of Public Relations* (pp. 479-485). Thousand Oaks, CA: Sage.

Fink, S. (1986). *Crisis management: Planning for the inevitable*. New York:

ANACOM.Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley.

Fishbein, M., & Ajzen, I. (1980). *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice-Hall.

Fishbein, M., & Ajzen, I. (2005). Theory-based behavior change interventions: Comments on Hobbis and Sutton. *Journal of Health Psychology, 10*(1), 27-31.

doi: 10.1177/1359105305048552

Flanagan, A. J., & Metzger, M. J. (2007). The role of site features, user attributes, and information verification behaviors on the perceived credibility of Web-based information. *New Media & Society, 9*, 319-342.

Francis, J. J., Eccles, M. P., Johnston, M., Walker, A., & Grimshaw, J., Foy, R., et al. (2004). *Constructing questionnaires based on the theory of planned behavior. A manual for health services researchers.* United Kingdom: Centre for Health Services Research, University of Newcastle. Retrieved August 14, 2010 from http://www.rebeqi.org/ViewFile.aspx?itemID=212

Frank, R. E., & Strain, C. E. (1972). A segmentation research desgin using consumer panel data. *Journal of Marketing Research, 9*(4), 385-390.

Freberg, K., Adams, R., McGaughey, K., & Freberg, L. (2010). The rich get richer: Online and offline social connectivity predicts subjective loneliness. *Media Psychology Review.* Published online at http://www.mprcenter.org/mpr/index.php?option=com_content&view=article&id=213&Itemid=178

Freberg, K., Graham, K., McGaughey, K., & Freberg, L. (2011). Who are the social media influencers? A study of public perceptions of personality. *Public Relations Review.*

Freberg, K., Palenchar, M. J., & Veil, S. (2010). *Social media bookmarking services: Managing and sharing information from a centralized source*. Paper presented at

the National Communication Association's 96th Annual Convention, San Francisco, CA.

Gellynck, X., Verbeke, W., & Vermeire, B. (2006). Pathways to increase consumer trust in meat as a safe and wholesome food. *Meat Science, 74*, 161–171.

Generations Online Report (2010). Pew Research Center. Retrieved on January 5, 2011 from http://pewresearch.org/pubs/1831/generations-online-2010

Gilks, W. R. (2005). Markov chain Monte Carlo. *Encyclopedia of Biostatistics.* Retrieved on December 2, 2010 from http://onlinelibrary.wiley.com/doi/10.1002/0470011815.b2a14021/full

Global public embracing social networking. (2010, December 15). Pew Research Center. Retrieved on January 5, 2011 from http://pewresearch.org/pubs/1830/social-networking-computer-cell-phone-usage-around-the-world

Gomez, E. A., Passerini, K., & Hare, J. (2006). *Public health crisis management: Communiy level roles and communitation options.* Paper presented at the Proceedings of the 3rd International ISCRAM Conference Newark, NJ.

González-Herrero, A., & Pratt, C. B. (1996). An integrated symmetrical model for crisis-communication management. *Journal of Public Relations Research, 8*(2), 79-105.

González-Herrero, A., & Smith, S. (2008). Crisis communications management on the web: How internet-based technologies are changing the way public relations professionals handle business crises. *Journal of Contingencies & Crisis Management, 16,* 143-153. doi: 10.1111/j.1468-5973.2008.00543.x

Gordon, J. (2003). Risk communication and foodbourne illness: Message sponsorship and attempts to stimulate perceptions or risk. *Risk Analysis, 23*(6), 1287-1296.

Gordon, J. (2009). The coming change in social media business applications: Separating the biz from the buzz. *Social Media Today*. Retrieved on January 5, 2011 from http://socialmediatoday.com/ClientFiles/adcb5c24-341d-4387-b3e9-9ff0972653f2/SMT_whitepaper_biz.pdf

Gower, K. K. (2006). Public relations research at the crossroads. *Journal of Public Relations Research, 18*(2), 177-190. doi: 10.1207/s1532754xjprr1802_6

Green, J. M., Draper, A. K., & Dowler, E. A. (2003). Short cuts to safety risk and 'rules of thumb' in accounts of food choice. *Health, Risk, & Society, 5*(1), 33-52.

Grunert, K. G. (2005). Food quality and safety: consumer perception and demand. *European Review of Agricultural Economics, 32*(3), 369-391.

Grunig, J. E., & Grunig, L. S. (1989). Toward a theory of the public relations behavior of organizations: Review of a program of research. In J. E. Grunig & L. A. Grunig (Eds.), *Public Relations Research Annual* (Vol. 1; pp. 27-63). Hillsdale, NJ: Lawrence Erlbaum.

Grunig, J. E., & Grunig, L. A. (2000). Public relations in strategic management and strategic management of public relations: Theory and evidence from the IABC Excellence project. *Journalism Studies, 1*(2). 303-321.

Grunig, J. E., & Hunt, T. (1984). Managing public relations. New York: Holt, Rinehart and Winston.

Gundel, S. (2005). Towards a new typology of crises. *Journal of Contingencies and Crisis Management, 13*(3), 106–115.

Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate Data Analysis* (5th ed.). Upper Saddle River, NJ: Prentice Hall.

Hallman, W. K. & Cuite, C. L. (2010). Food recalls and the American public: Improving communications. (Publication number RR-0310-020). New Brunswick, New Jersey: Rutgers, The State University of New Jersey, Food Policy Institute.

Haugtvedt, C.P., Liu, K., & Min, K.S. (2008). Individual differences: Tools for theory testing and understanding in consumer psychology research. In C. P. Haugtvedt, P. M. Herr, & F. R. Kardes (Eds.), *Handbook of Consumer Psychology* (pp. 1161-1176). Boca Raton, FL: CRC Press.

Hearit, K.M. (2005). Crisis management by apology: Corporate response to allegations of wrongdoing. New York: Routledge.

Hearit, K. M. (1994). Apologies and public relations crises at Chrysler, Toshiba, and Volvo. *Public Relations Review*, *20*(2), 113-125.

Heath, R.L. (1993). Toward a paradigm for the study and practice of public relations: A rhetorical approach to zones of meaning and organizational prerogatives. *Public Relations Review, 19*(2), 141-155.

Heath, R. L. (2000). A rhetorical perspective on the values of public relations: Crossroads and pathways toward concurrence. *Journal of Public Relations Research, 12*(1), 69-91.

Heath, R. L. (2001). A rhetorical enactment rationale for public relations: The good organization communicating well. In R. L. Heath (Ed.), *Handbook of public relations* (pp. 31-50). Thousand Oaks, CA: Sage Publications.

Heath, R. L. (2002). *Issues management: Its past, present and future* (Vol. 2, pp. 209): John Wiley & Sons, Inc. / Business.

Heath, R. L. (2006). Onward into more fog: Thoughts on public relations' research directions. *Journal of Public Relations Research, 18*(2), 93-114.

Heath, R. L. (2006). Best practices in crisis communication: Evolution of practice through research. *Journal of Applied Communication Research, 34(3),* 245-248

Heath, R. L., & Gay, C. D. (1997). Risk communication. *Management Communication Quarterly, 10*(3), 342.

Heath, R. L., Lee, J., & Ni, L. (2009). Crisis and risk approaches to emergency management planning and communication: The role of similarity and sensitivity. *Journal of Public Relations Research, 21*(2), 123–141.

Heider, F. (1958). *The psychology of interpersonal relations*. New York: Wiley.

Heitmann, H., & Lott, B. (2008). Protecting corporate reputation in an ERA of instant transparency. In D. Pantaleo & N. Pal (Eds.), *From strategy to execution: Turning accelerated global change into opportunity* (pp.237-257). Springer Berlin.

Hillman, A. J., & Keim, G. D. (2001). Shareholder value, stakeholder management, and social issues: What's the bottom line? *Strategic Management Journal, 22*(2), 125-139. doi: 10.1002/1097-0266

Hinduja, S., & Patchin, J. W. (2008). Personal information of adolescents on the Internet: A quantitative content analysis of MySpace. *Journal of Adolescence, 31*(1), 125-146. doi: 10.1016/j.adolescence.2007.05.004

Hobbs, F., & Stoops, N. (2002). *U.S. Census Bureau, Census 2000 Special Reports, Series CENSR-4, Demographic Trends in the 20th Century*. Washington, DC: U.S. Government Printing Office.

Hooker, N. H., Teratanavat, R. P., & Salin, V. (2005). Crisis management effectiveness indicators for US meat and poultry recalls. *Food Policy* **30**: 63-80.

Hovland, C. I., & Weiss, W. (1951). The influence of source credibility on communication effectiveness. *Public Opinion Quarterly, 15*(635-650).

How to follow Japan earthquake. (2011, March 11). Retrieved on April 2, 2011 from http://mashable.com/2011/03/11/follow-japan-earthquake-online/

Howell, G. V. J., & Miller, R. (2010). Maple leaf foods: Crisis and containment case study. *Public Communication Review, 1,* 47-56.

Hsu, M.-H., Ju, T. L., Yen, C.-H., & Chang, C.-M. (2007). Knowledge sharing behavior in virtual communities: The relationship between trust, self-efficacy, and outcome expectation. *International Journal of Human-Computer Studies, 65*(2), 153–169.

Hwang, S., & Cameron, G. T. (2008). Public's expectation about an organization's stance in crisis communication based on perceived leadership and perceived severity of threats. *Public Relations Review, 34*, 70-73.

IPhone versus Soviet subterfuge make Fukushima no Chernobyl. (2011, March 28). Retrieved on April 2, 2011 from http://www.bloomberg.com/news/2011-03-27/iphone-apps-versus-soviet-subterfuge-make-fukushima-no-chernobyl.html

Jacques, T. (2010). Embedding issue management as a strategic element of crisis prevention. *Disaster Prevention and Management, 19*(4), 469-482.

Japan earthquake: Radiation found in food near nuclear plant. (2011, March 19). Retrieved on April 2, 2011 from http://www.telegraph.co.uk/news/worldnews/asia/japan/8392328/Japan-earthquake-Radiation-found-in-food-near-nuclear-plant.html

Japan earthquake and tsunami: Timeline. Retrieved on April 2, 2011 from http://articles.cnn.com/2011-03-12/world/quake.tsunami.timeline_1_nuclear-power-plants-fukushima-prefecture-international-atomic-energy-agency?_s=PM:WORLD

Japan radiation contaminates food sent beyond affected area. (2011, March 21). Retrieved on April 2, 2011 from http://abcnews.go.com/Health/Wellness/japan-radiation-food-contamination/story?id=13185149

Jevsnik, M., Hlebec, V., & Raspor, P. (2008). Food safety knowledge and practices among food handlers in Slovenia. *Food Control, 19,* 1107–1118.

Kalkheimer, J., & Heide, M. (2006, December). Multicultural crisis communication: Towards a social constructionist perspective. *Journal of Contingencies and Crisis Management, 14*(4), 180-189.

Kelleher, T. (2008). Organizational contingencies, organizational blogs, and public relations practitioner stance towards publics. *Public Relations Review, 34*, 300-302.

Kent, M. L., Taylor, M., & White, W. (2003). The relationship between Web site design and organizational responsiveness to stakeholders. *Public Relations Review 29*(1), 66–77.

Keppel, G., & Wickens, T. D. (2004). *Design and analysis: A researcher's handbook* (4th ed.). Upper Saddle River, NJ: Pearson Prentice Hall.

Kim, J. W., Kim, Y. S., & Kyung, K. H. (2004). Inhibitory activity of essential oils of garlic and onion against bacteria and yeasts. *Journal of Food Protection, 67*, 499-504.

Kjaernes, U. (2006). Trust and distrust: Cognitive decisions or social relations? *Journal of Risk Research, 9*(8), 911-932.

Kleinberg, J. (2008, November). The convergence of social and technological networks. *Communications of ACM, 51*(11), 66-72.

Knight, A. J., Worosz, M. R., & Todd, E. C. D. (2009). Dining for safety: Consumer perceptions of food safety and eating out. *Journal of Hospitality & Tourism Research, 33*(4), 471-486.

Kornelis, M., de Jonge, J., Frewer, L., & Dagevos, H. (2007). Consumer selection of food safety information sources. *Risk Analysis, 27*(2), 327-335.

Krämer, N. C., & Winter, S. (2008). Impression management 2.0: The relationship of self-esteem, extraversion, self-efficacy, and self-presentation within social networking sites. *Journal of Media Psychology: Theories, Methods, and Applications, 20*(3), 106-116. doi: 10.1027/1864-1105.20.3.106

Kuhn, T.S. (1962). *The structure of scientific revolutions* (2nd ed.). New York: New American Library.

Kuttschreuter, M. (2006). Psychological determinents of reactions to food risk messages. *Risk Analysis, 26*(4), 1045-1057.

Lang, J. T., & Hallman, W. K. (2005). Who does the public trust first?: The case of genetically modified food in the United States. *Risk Analysis, 25*(5), 1241-1252.

Lariscy, R. W., Avery, E. J., Sweetser, K. D., & Howes, P. (2009). An examination of the role of online social media in journalists' source mix. *Public Relations Review, 35*(3), 314-316. doi: 10.1016/j.pubrev.2009.05.008

Ledingham, J. A. (2003). Explicating relationship management as a general theory of public relations. *Journal of Public Relations Research, 15*(2), 181-198.

Lerbinger, O. (1997). *The crisis manager: Facing risk and responsibility*. Mahwah, NJ: Lawrence Erlbaum.

Levy, A. S., Choiniere, C. J., & Fein, S. B. (2008). Practice-specific risk perceptions and self-reported food safety practices. *Risk Analysis, 28*(3), 749-761.

Liu, S., Palen, L., Sutton, J., Hughes, A., & Vieweg, S. (2008). *In search of the bigger picture: The emergent role of on-line photo-sharing in times of disaster.* Paper presented at the Proceedings of the 5th International ISCRAM Conference, Washington, DC.

Lobb, A. E., Mazzochi, M., & Traill, W. B. (2007). Modelling risk perception and trust in food safety information within the theory of planned behaviour. *Food Quality and Preference, 18*, 384-395.

Madden, M. (2010, August 27). Older adults and social media. Retrieved from http://www.pewinternet.org/Reports/2010/Older-Adults-and-Social-Media.aspx

Mangold, W. G., & Faulds, D. J. (2009). Social media: The new hybrid element of the promotion mix. *Business Horizons, 52*, 357-365.

Marken, G. A. (2007). Social media... The hunted can become the hunter. *Public Relations Quarterly, 52*(4), 9-12.

Martin, R. J., Usdan, S., Nelson, S., Umstattd, M. R., LaPlante, D., Perko, M., et al. (2010). Using the theory of planned behavior to predict gambling behavior. *Psychology of Addictive Behaviors, 24*(1), 89-97.

Mazer, J., Murphy, R., & Simonds, C. (2007). The effects of teacher self-disclosure via "Facebook" on perceptions of teacher credibility. *Conference Papers -- National Communication Association*, 1.

McGrath, J. E., Martin, J., & Kulka, R. A. . (1985). Some quasi-rules for making judgment calls in research. . In J. E. McGrath, J. Martin, and R. A. Kulka (Ed.), *Judgment calls in research* (pp. 103-118). Beverly Hills, CA: Sage Publications, Inc.

Mentzer, J. T., & Flint, D. J. (1999). *Evaluating contributions to logistics knowledge.* . Paper presented at the Council of Logistics Management, Oak Brook, IL.

Mertler, C. A., & Vannatta, R. A. (2005). *Advanced and multivariate statistical methods: Practical application and interpretation* (3rd ed.). Glendale, CA: Pyrczak Publishing.

Messina, V. (2010). Hexane in veggie burgers: Little science behind the claims. Retrieved January 30, 2010, from http://www.examiner.com/vegan-in-national/hexane-veggie-burgers-little-science-behind-the-claims

Midkoff, S. F., & Bostain, C. W. (2002). *Rapidly-deployable broadband wireless netowkrs for disaster and emergency response.* Paper presented at the The First

IEEE Workshop on Disaster Recovery Networks (DIREN '02), New York City, NY.

Miles, S., & Frewer, L. (2003). Public perception of scientific uncertainty in relation to food hazards. *Journal of Risk Research, 6*(3), 267-283.

Miller, B. M., & Horsley, J. S. (2009). Digging deeper: Crisis management in the coal industry. *Journal of Applied Communication Research, 37*(3), 298-316.

Mitchell, T. R., & James, L.R. (2001). Building better theory: Time and the specification of when things happen. *Academy of Management Review, 26*(4), 530-547.

Mitroff, I.I. (1994). Crisis management and environmentalism: A natural fit. *California Management Review, 36*(2), 101-113.

Mitroff, I. I. (2004). *Crisis Leadership: Planning for the Unthinkable*. John Wiley, Hoboken, NJ.

Mitroff, I. I., Shrivastava, P. & Udwadia, F. (1987). Effective crisis management. *Executive, 1,* 283-92.

Moore, H. B. (1957). The meaning of food. *The American Journal of Clinical Nutrition, 5*(1), 77-82.

Moss, S., & Edmonds, B. . (2003). *Sociology and simulation: Statistical and qualitative cross-validation.* Manchester, UK: Centre for Policy Modelling.

Mukherjee, A., & Balmer, J. M. T. (2007). New frontiers and perspectives in corporate brand management: In search of a theory. *International Studies of Management & Organization, 37*(4), 3-19.

Mulhern, F. (2009). Integrated marketing communications: From media channels to digital connectivity. *Journal of Marketing Communications, 15*(2/3), 85-101. doi: 10.1080/13527260902757506

New media and the Air Force (2009). Air Force Public Affairs Agency Emerging Technology Division. Retrieved on January 30, 2011 from http://www.usafa.af.mil/shared/media/document/AFD-090406-036.pdf

New technologies in emergencies and conflicts report: The role of information and social networks. (2010). New York: United Nations Foundation.

Nguyen, M. N., Potvin, L., & Otis, J. (1997). Regular exercise in 30 - to 60- year old men: Combining the stages of change model and the theory of planned behavior to identify determinants for targeting heart health interventions. *Journal of Community Health, 22*, 233-246.

Norman, P., & Conner, M. (2006). The theory of planned behaviour on binge drinking: Assessing the moderating role of past behavior within the theory of planned behavior. *British Journal of Psychology, 11*, 55-70.

O'Keefe, D. J. (2003) Message properties, mediating states, and manipulation checks: Claims, evidence, and data analysis in experimental persuasive message effects research. *Communication Theory, 13*(3), 251-274.

Olsen, S. O., Heide, M., Dopico, D. C., & Toften, K. (2008). Explaining intention to consume a new fish product: A cross-generational and cross-cultural comparison. *Food Quality and Preference, 19*(7), 618-627. doi: 10.1016/j.foodqual.2008.04.007

Osigweh, C. A. B., & Chimizie, A. B. (1989). Concept fallibility in organizational science. *Academy of Management Review, 14*(4), 579-594.

Ozanne, J. L., Fern, E.F., & Yadav, M. . (1989). A conceptual framework for evaluating interdisciplinary research in marketing. *Review of Marketing*, 457-480.

Palen, L. (2002). Mobile telephony in a connected life. *Communications of the ACM, 45*(3), 78-82.

Palen, L. (2008). Online social media in crisis events. *EDUCAUSE Quarterly, 31*(3), 76-78.

Palen, L., Hiltz, R., & Liu, S. (2007). Online forums supporting grassroots participation in emergency preparedness and response. *Communications of the ACM, 50*(3), 54–58.

Palen, L. & Vieweg, S. (2008). Emergent, widescale online interaction in unexpected events: Assistance, alliance and retreat. *Proceedings of the ACM 2008 Conference on Computer Supported Cooperative Work (CSCW 2008),* 117-126.

Palenchar, M. J., & Heath, R. L. (2007). Strategic risk communication: Adding value to society. *Public Relations Review*, 33, 120-129.

Pearson, C. M., & Clair, J. A. (1998). Reframing crisis management. *Academy of Management Review, 23*(1), 59-76.

Pearson, C. M., & Mitroff, I. I. (1993). From crisis prone to crisis prepared: A framework for crisis management. *Academy of Management Executive, 7*(1), 48-59.

Penrose, J. M. (2000). The role of perception in crisis planning. *Public Relations Review, 26*(2), 155-171.

Perdue, B. C., & Summers, J. O. (1986). Checking the success of manipulations in marketing experiments. *Journal of Marketing Research, 23*, 317-326.

Perloff, R. M. (2003). *The dynamics of persuasion: Communication and attitudes in the 21st century*. Philadelphia, PA: Lawrence Erlbaum Associates.

Permut, S. E., Michel, A. J., & Joseph, M. (1976). The researcher's sample: A review of the choice of respondents in marketing research. *Journal of Marketing Research, 13*, 278-283.

Peter, J. P. (1979). Reliability: A review of psychometric basics and recent marketing practices. *Journal of Marketing Research, 16*(6-17).

Petty, R. E., & Cacioppo, J. T. (1981). *Attitudes and persuasion: Classic and contemporary approaches*. Dubuque, Iowa: Wm. C. Brown.

Petty, R. E., & Cacioppo, J. T. (1986). The elaboration likelihood model of persuasion. *Advances in Experimental Social Psychology, 19*, 123-205.

Petty, R. E., & Weneger, D. (1999). The Elaboration Likelihood Model: Current status and controversies. In S. Chaiken & Y. Trope (Eds.), *Dual process theories in social psychology* (pp. 1-34). New York: Guilford Press.

Philip, S., & Anita, E. (2010). Efficacy of the theory of planned behavior model in predicting safe food handling practices. *Food Control, 21*, 983-987.

Pollard, W.E. (2002). The use of consumer panel survey data for public health communication planning: An evaluation of survey results. *Proceedings from Joint Statistical Meetings – Section on Health Policy Statistics (HPSS),* 2720-2724.

Prentice, S., & Huffman, E. (March 2008). Social media's new role in emergency management. *Idaho National Laboratory.*

Priester, J. R., & Petty, R. E. (1995). Source attributions and persuasion: Perceived honesty as a determinant of message scrutiny. *Personality and Social Psychology Bulletin, 21*, 637-654.

Purcell, K., Entner, R., & Henderson, N. (2010). The rise of apps culture. PewInternet. Retrieved on December 1, 2010 from http://www.pewinternet.org/Reports/2010/The-Rise-of-Apps-Culture.aspx

Radiation in Japan's food supply: Dangerous or benign? Retrieved on April 2, 2011 from http://www.pbs.org/newshour/rundown/2011/03/radiation-in-japans-food-supply-dangerous-or-benign.html

Reynolds, B., & Seeger, M. W. (2005). Crisis and emergency risk communication as an integrative model. *Journal of Health Communication, 10,* 43-55.

Rohr, A., Luddecke, K., Drusch, S., Muller, M. J., & Alvensleben, R. (2005). Food quality and safety—consumer perception and public health concern. *Food Control, 16*, 649–655.

Ropeik, D. (2006). Best practices response. *Journal of Applied Communication Research, 34(3),* 253-256.

Ross, C., Orr, E. S., Sisic, M., Arseneault, J. M., Simmering, M. G., & Orr, R. R. (2008). Personality and motivations associated with Facebook use. *Computers in Human Behavior, 25*(578-587).

Roux-Dufort, C. (2007, June). Is crisis management (only) a management of exceptions? *Journal of Contingencies and Crisis Management, 15*(2), 105-114.

Rozin, P. (2005). The meaning of food in our lives: A cross-cultural perspective on eating and well-being. *Journal of Nutrition Education and Behavior, 37*(2), S107-S112.

Ryan, G. W., & Bernard, H. R. (2000). Data management and analysis method. In N. Denzin, & Y. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 769-802). Thousand Oaks, CA: Sage Publications.

Sandman, P. M. (2006). Crisis communication best practices: Some quibbles and additions. *Journal of Applied Communication Research, 34(3),* 257-262.

Schoenberg, A. (2005). Do crisis plans matter? A new perspective on leading during a crisis. *Public Relations Quarterly, 50*(1), 2-6.Seeger, M. W., Sellnow, T. L., & Ulmer, R. R. (1998). Communication, organization, and crisis. In M. Roloff (Ed.), *Communication yearbook* (Vol. 21, pp. 230-275). Thousand Oaks, CA: Sage.

Shklovski, I., Burke, M., Kiesler, S., & Kraut, R. (2010). Technology adoption and use in the aftermath of Hurricane Katrina in New Orleans. [Article]. *American Behavioral Scientist, 53*, 1228-1246.

Shklovski, I., Palen, L., & Sutton, J. (2008). *Finding community through information and communication technology in disaster events.* Paper presented at the ACM Proceedings of Computer Supported Cooperative Work Conference, San Diego, CA.

Solis, B. (2008). *The essential guide to social media*. Retrieved from

http://www.briansolis.com

Strong public interest in Japan disaster. (2011, March 15). Retrieved on April 2, 2011 from http://pewresearch.org/pubs/1930/news-interest-japan-earthquake-libya-wisconsin-nfl

The state of mobile apps (2010, June 1). NielsonWire. Retrieved on December 1, 2010 from http://blog.nielsen.com/nielsenwire/online_mobile/the-state-of-mobile-apps/

Steinfield, C., Ellison, N. B., & Lampe, C. (2008). Social capital, self-esteem, and use of online social network sites: A longitudinal analysis. *Journal of Applied Developmental Psychology, 29*(6), 434-445. doi: 10.1016/j.appdev.2008.07.002

Stephens, K. K., & Malone, P. C. (2009). If the organizations won't give us information…: The use of multiple new media for crisis technical translation and dialogue. *Journal of Public Relations Research, 21(*2), 229–239.

Stephenson, D., & Bonabeau, E. (2007). Expecting the unexpected: The need for a networked terrorism and disaster response strategy. *Homeland Security Affairs, 3*(1).

Stewart, D. W., & Zinkman, G. M. (2006). Enhancing marketing theory in academic research. *Journal of Academy of Marketing Science, 34*(4), 477-480.

Sutton, J. N. (2010). *Twittering Tennessee: Distributed networks and collaboration following a technological disaster.* Paper presented at the 7th International ISCRAM Conference, Seattle, WA.

Tedeschi, J. T., & Linskold, S. (1976). The conduct of research in social psychology *Social psychology: Interdependence, interaction, and influence* (pp. 45-57). New York: Wiley.

Terrorist threats to food: Guidance for establishing and strengthing prevention and response systems. (May 2008).

Thurstone, L. L. (1928). Attitudes can be measured. *The American Journal of Sociology, 33*(4), 529-554.

Tolma, E., John, R., & Garner, J. (2007). Evalutation of United States Department of agriculture-sponsored consumer materials addressing food security. *American Journal of Health Promotion, 21*(3). 164-174.

Tong, S. T., Van Der Heide, B., Langwell, L., & Walther, J. B. (2008). Too much of a good thing? The relationship between number of friends and interpersonal impressions on Facebook. [Article]. *Journal of Computer-Mediated Communication, 13*(3), 531-549. doi: 10.1111/j.1083-6101.2008.00409.x

Trent, J. S., & Trent, J. D. (1976). Public relations education: An opportunity for speech communication. *Communication Education, 25*(4), 292-298.

Twitter Hope 140 Blog – Japan Tsunami Hashtags (n.d.). Retrieved on April 2, 2011 from http://hope140.org/blog/

Twitter responds to Japan's disaster. (2011, March 17). Retrieved on April 2, 2011 from http://pewresearch.org/pubs/1933/twitter-response-japan-earthquake-breaking-news-eyewitness-bulletin-board-fund-raising

Ulmer, R. R., Seeger, M. W., & Sellnow, T. L. (2004). Stakeholder theory. In R. L. Heath

(Ed.), *Encyclopedia of public relations* (pp. 808-811), Thousand Oaks, CA: Sage.

Utz, S. (2010). Show me your friends and I will tell you what type of person you are: How one's profile, number of friends, and type of friends influence impression formation on social network sites. *Journal of Computer-Mediated Times*

Varadarajan, P. R. (2008). Musings on relevance and rigor of scholarly research in marketing. *Journal of the Academy of Marketing Science***,** *31(*4) 368-376.

Veinott, B., Cox, D., & Mueller, S. (2009, July). Social media supporting disaster response. Evaluation of a lightweight collaborative tool. *Published by the British Computer Society Proceedings of NDM9, the 9th International Conference on Naturalistic Decision Making*. London, UK.

Verbeke, W., Frewer, L. J., Scholderer, J., & De Bradander, H. F. (2007). Why consumers behave as they do with respect to food safety and risk information. *Analytica Chimica Acta, 586*, 2–7.

Vieweg, S., Palen, L., Liu, S., Hughes, A., & Sutton, S. (2008). *Collective intelligence in disaster: An examination of the phenomenon in the aftermath of the 2007 Virginia Tech shootings.* Paper presented at the Information Systems for Crisis Response and Management Conference, Washington, DC.

Wacker, J. G. (2008). A conceptual understanding of requirements for theory-building research: Guidelines for scientific theory building. *Journal of Supply Chain Management, 44*(3), 5-16.

Walther, J. B. (2007). Selective self-presentation in computer-mediated communication: Hyperpersonal dimensions of technology, language, and cognition (Vol. 23, pp. 2538-2557).

Walther, J. B., Van Der Heide, B., Kim, S.-Y., Westerman, D., & Tong, S. T. (2008). The role of friends' appearance and behavior on evaluations of individuals on Facebook: Are we known by the company we keep? *Human Communication Research, 34*(1), 28-49. doi: 10.1111/j.1468-2958.2007.00312.x

Wang, Z., Walther, J. B., Pingree, S., & Hawkins, R. P. (2008). Health informatioin, credibility, homophily, and influence via the Internet: Web sites versus discussion groups. *Health Communication, 23*, 358-368.

Waters, R. D., Burnett, E., Lamm, A., & Lucas, J. (2009). Engaging stakeholders through social networking: How nonprofit organizations are using Facebook. *Public Relations Review, 35*(2), 102-106. doi: 10.1016/j.pubrev.2009.01.006

Weinstein, N. D. (1980). Unrealistic optimism about future life events. *Journal of Personality and Social Psychology, 39*, 806-820.

Weinstein, N. D. (1993). Testing four competing theories of health-protective behavior. *Health Psychology, 12*(4), 324-333.

Wester, M. (2009). Cause and consequence of crises: How perception can influence communication. *Journal of Contingencies and Crisis Management, 17*(2), 118-125.

Weyeneth, R. R. (2001). The power of apology and the process of historical reconciliation. *The Public Historian*, *23*(3), 9-38.

World Health Organization (WHO; 2008). Terrorist threats to food: Guidance for establishing and strengthing prevention and response systems. Retrieved on January 30, 2011 from http://www.who.int/foodsafety/publications/fs_management/terrorism/en/

Wrigley, B. J., Salmon, C. T., & Park, H. S. (2003). Crisis management planning and the threat of bioterrorism. *Public Relations Review, 29,* 281-290.

Wigley, S., & Fontenot, M. (2010). Crisis managers losing control of the message: A pilot study of the Virginia Tech shooting. *Public Relations Review, 36*, 187-189.

Williams, P. R. D., & Hammitt, J. K. (2001). Perceived risks of conventional and organic produce: Pesticides, pathogens, and natural toxins. *Risk Analysis, 21*(2), 319-330.

Wright, D. K., & Hinson, D. H. (2008). How blogs and social media are changing public relations and the way it is practiced. *Public Relations Journal, 2*(2).

Wright, D. K., & Hinson, D. H. (2009). An updated look at the impact of social meida on public relations practice. *Public Relations Journal, 3*(2).

Yifeng, H., & Sundar, S. S. (2010). Effects of online health sources on credibility and behavioral intentions. *Communication Research, 37*(1), 105-132. doi: 10.1177/0093650209351512

Zhao, S., Grasmuck, S., & Martin, J. (2008). Identity construction on Facebook: Digital empowerment in anchored relationships. *Computers in Human Behavior, 24*, 1816-1836.

Appendices

Appendix A: Focus Group Questionnaire

Before starting the focus group, please take a few minutes to answer some demographic questions.

1. I am (please check one) ☐Male ☐Female

2. Age _____

3. Education Level

☐	High School Diploma
☐	Undergraduate Degree
☐	Graduate Degree (MBA, MA, MS)
☐	Graduate Degree (PhD, MD, etc)
☐	Other: _____

4. Industry of Employment:
_____

5. Do you actively participate on social media and networking sites? (ex. Facebook, Twitter, etc.)
Yes No

If yes: Which social media sites do you use? (Please check all that apply)

☐	Twitter
☐	Facebook
☐	You Tube
☐	Flickr
☐	MySpace
☐	Del.i.cious
☐	Geolocation based applications (ex. Foursquare)
☐	Virtual Online Communities (ex. Second Life)
☐	Other: _____

6. How long have you been on these sites?

- Name of site: _____
  Since _____

- Name of site: _____
  Since _____

- Name of site: _____
  Since _____

7. On a typical day, about how much time do you spend actively on social media sites (i.e. not counting the time you have it running in the background while you do other computer tasks) (check one response):

☐ 15 minutes or less
☐ Between 15 and 30 minutes
☐ Between 30 and 60 minutes
☐ Between 1 and 2 hours
☐ More than 2 hours. (Please specify an amount of time: _____.)

8. What do you use these social networking sites for? (Please check all that apply)

☐	Communicating with friends and family
☐	Professional networking opportunities
☐	Sharing information with friends, followers, online community
☐	Interacting with online groups on discussion boards
☐	Post or view photos
☐	Post or view videos
☐	Post or view comments on blogs and social networking sites
☐	Check in at various locations
☐	Search for information about current events (locally, nationally, and internationally)
☐	Search for news on current events
☐	Post or view links to articles or events
☐	Write private messages to followers
☐	Other (please specify): _____

9. Do you own (please select all that apply)

☐	Computer (Desktop)
☐	Computer (Laptop)
☐	Cell phone with Internet Connection (ex. Blackberry, iPhone, Palm, Android)
☐	iPad
☐	None of the above

Appendix B: Focus Group Questions

We are conducting a study of consumers in the United States. We are interested in the reasons why consumers do or do not follow food safety recommendations. We would appreciate your responses to some questions about this. There are no right or wrong answers. Please tell us what you really think.

1. What does the term "food safety recommendation" mean to you? Can you think of an example of a food safety recommendation that you heard or saw recently?

2. What do you believe are the ***advantages*** of following a food safety recommendation?

3. What do you believe are the ***disadvantages*** of following a food safety recommendation?

4. Is there anything else you associate with your own views about following a food safety recommendation?

5. Are there any individuals or groups who would ***approve*** of your following a food safety recommendation?

6. Are there any individuals or groups who would ***disapprove*** of your following a food safety recommendation?

7. Is there anything else you associate with other people's views about following a food safety recommendation?

8. What factors or circumstances would enable you to follow a food safety recommendation?

9. What factors or circumstances would make it difficult or impossible for you to follow a food safety recommendation?

10. Are there any other issues that come to mind when you think about following a food safety recommendation?

****Notes:*** This discussion guide is adapted from the Francis et al. (2004) Research Manual, page 35.

Appendix C: Focus Group Transcripts

Focus Group 1 Transcript
September 2010

Moderator/P7: Okay, we're going to have some focus group questions today. We're conducting a study of consumers in the United States. We are interested in the reasons why consumers do or do not follow food safety recommendations. We would appreciate your responses to some questions about this. There are no wrong or right answers. And please tell us what you think. So the first question is what does the term food safety recommendation mean to you, and can you think of a food safety recommendation that you heard or saw recently. So what does food safety mean to you?
P4: Eggs? Like the eggs?
MP7: Yeah, eggs is a great example.
P4: [PARTICIPANT 5] went online to look up Mom's code and found out it wasn't a good batch of eggs.
MP7: Do you remember what the site was?
P5: I just googled it. Bad eggs. It just said where the site was.
P6: Albertson's.
P5: It wasn't an Albertson's site.
MP7: Like a government site?
P5: I think it might have been like a government site.
P6: On the box it had a number.
MP7: But I ate my eggs anyway.
P5: To answer your question, if …how do you know if they're actually bad anyways? Like there could be five bad eggs out of a million eggs or something.
MP7: And if they're bad, do they kill you? Or do they just make you sick? Or are you just kind of worried about them? You don't always know the intensity. It's like they have those terror warnings…
P3: I thought that was just the thing that was where they say to cook it to a certain temperature.
P2: Yeah, that would be one.
P6: Yes, and wash chicken off. That's recommended on the package. You always wash the chicken and clean off your board that you cut it up with very well with soap and water.
MP7: I remember there was something you did …you showed us when we were young…about some hamburger that was bad. Remember that? It was on TV?
P6: If hamburger was bad, I just threw it away. If it didn't smell good.
P2: A food safety recommendation?
MP7: What does the term mean to you?

P2: Advice. That somebody's telling me I should do things a certain way. And the egg thing I guess is the most current one, although we didn't check our egg labels. Oooh. We live large.
P5: Would another thing be like on potato chips…it says it doesn't have trans fat. Now none of them have trans fat.
P3: So [PARTICIPANT 6] has a chicken, so she shouldn't have this egg problem.
P2: True.
P3: Unless her chicken gets something.
P6: Well, she walks around. She has a very active digestion system and she walks around in her pen out there, stepping in her fecal matter and so I'm very careful to wash the eggs as they come in very well.
MP7: Well, the next question is fairly straightforward. What do you think are the advantages of following a food safety recommendation?
P2: Not dying?
P4: Getting better eggs. I brought back the Albertson's eggs and they gave me Cal Poly eggs.
P2: Really?
P4: Whatever eggs I wanted in the whole store. I could have any eggs.
MP7: Jumbo eggs?
P4: Right.
P6: To follow recommendations just makes good sense. To eliminate any problem somebody might have. Being allergic to that…poison…unclean….whatever, if it's oranges and tangerines with wax on them, I always wash them real well.
MP7: Are there any disadvantages you can think of to following a food safety recommendation?
P3: I think it's there so many of them. Like it's which ones do you do?
P2: And they're expensive for some people. There are some people who don't know they can bring their eggs back and they think they have to toss them or something and they're going to say well, I'll take my chances.
P4: Yeah, it's a hassle.
P3: I didn't even check ours.
P1: And you're hungry. Yeah, I don't want to go back to the store.
P3: If you eat one of the eggs out of the package and you're not dead, you'll probably just eat the rest.
P1: Like playing Russian Roulette. Not getting sick is the main thing.
MP7: Is there anything else you associate with your own views about food safety recommendations? In other words, is there something in your belief system that would influence following a food safety recommendation?
P2: I think sometimes they seem like they're kind of going overboard, like we're a really resilient species so we don't die that easily, and they say if you don't do all of these very obsessive-compulsive things, you're going to die. But when I go to a restaurant, I want them to follow all of those obsessive-compulsive things.

P4: It's just like with the chickens. They want you in certain recipes to bring things more to room temperature, but then they say never leave out your chicken for more than an hour or whatever it is, half an hour. Which one is right?
P2: Yeah, so you're getting mixed messages.
P1: I don't feel like I have to eat kosher food. I can eat pork on Fridays. It's not part of my belief system.
P3: We don't eat meat. So I have a wood cutting board. You're not supposed to have one if you prepare meat. I don't worry that much about washing it. I just sort of spray it off.
P2: One or both of the girls are allergic?
P3: [PARTICIPANT 3'S DAUGHTER] is allergic to peanuts and almonds, so food safety for us is about ….I mean, for an egg to get through that might have salmonella, worries me a lot less than if I bought some kind of baked good and it turned out it was made in a factory with nuts when it said it wasn't. Because for me, it's like she has any nuts, we go to the hospital. If we have an egg with salmonella, well, maybe we'll get sick maybe not.
P2: So you read those labels really carefully?
P3: Right, in fact when I go to the store, I see that there's a brand where it says made in a factory without nuts and they have a brand right there next to it that contains nuts, I don't buy it just in case they're not labeling it properly.
MP7: Are there any individuals or groups who would approve of your following a food safety recommendation?
P2: My family, I think.
P6: I would say my family, too.
P2: My dinner guests. No, anyone who eats your food would appreciate that.
MP7: Anyone else? Any larger groups like…
P4: Religious groups maybe?
MP7: Religious communities?
P2: That's possible.
P4: School. Oh yeah, because we have to make sure…there's no peanuts allowed….
P3: There are no peanuts allowed in the preschools. If there's a kid in the school with a peanut allergy, they don't allow nuts in the classroom.
P4: There are lots of things. If the chocolate chips have been through a nut factory, you can't use those chocolate chips….there are a lot of rules.
P3: Even though her classroom is nut-free, I still pack her…the parents are supposed to take turns bringing snack, but I still pack her one because I don't really trust the other parents.
MP7: This next question is very interesting when I first read it….Are there any individuals or groups who would disapprove of your following a food safety recommendation?
P4: I think a lot of people are irritated with the allergies in the schools. They feel like there's not supposed to be peanuts in the classroom and you're supposed to wash your hands if you have peanut butter and jelly at lunch. A lot of parents are very irritated.
MP7: They don't want to go the extra step.
P4: Right, it's not their child so they don't care.

MP7: I know [PARTICIPANT 2] asked me that question once and I said if I had a restaurant, it'd be my way or the highway. And I think that you're right. There are certain categories of people and groups that don't want to make accommodations, whether it's to handicapped people or
P4: Any disability, right.
MP7: Any disability.
P3: If I grow squash or something in my yard and sell it to my neighbor, I don't think you're technically supposed to do that because
P2: It's probably regulated by
P3: You can't just show up at Farmer's Market and sell something from your yard.
P4: Right, do you remember the Chinese restaurant over in the Marigold Center? Well, they got in trouble because they grew vegetables in their yard and they were using them in the restaurant.
P3: You can't get a lot of fresh vegetables around here.
P2: It's probably safer.
MP7: Good for them. I think that's pretty neat.
P3: Yeah, I think that would be kind of…yeah, if you went to a fancy restaurant, with you know, a fancy chef or something, and they said oh we grow our herbs here, I think most people would look at that as being a plus
P2: but you can't do it.
P3: I don't know for sure if you're allowed to do it.
P4: They'd probably have to get some special…
P3: If you knew about it, I'd want to go to that place, because oh it must be fresher and better.
MP7: That's really an interesting point. Because you start thinking about that, there are some food safety recommendations that you don't want everybody to follow if you have confidence in them. I think if I had confidence in a chef, who grew his or her own herbs, that would be interesting.
P3: It's like when they have the USDA organic label now but if you go down to R….. Farms or something, they don't have that label, but you trust them that they're your neighbor and they're not putting junk on your vegetables that you don't want. MP7: Exactly. Is there anything else you associate with other people's views about following a food safety recommendation? What do you think, I mean, is there anybody you know that has specific attitudes regarding food safety? You know, neighbors,
P4: I think every generation has a little bit different
MP7: Take?
P4: uh huh, take on it. I mean….
P2: Different cultures, too.
P4: [PARTICIPANT 4'S DAUGHTER'S NAMES] ….they want to throw it out if the date is today. Let's throw it out, where I would keep milk longer.
P2: You think it's generational? Or just?
P3: I don't know, I keep it till it stinks. Although I've had people get sick at my house from my milk. But they weren't that sick, so…. laughter.
P1: We don't have any close friends anymore, either.

MP7: [PARTICIPANT 2] has a really interesting YouTube showing one a chef in Mexico versus a chef from oh France.
P2: Oh yeah, it's actually pretty hard to watch, because it's a movie on sensation and perception and taste and they're showing this French chef preparing this wonderful meal and this Mexican rural woman preparing this wonderful meal for the Day of the Dead, but every five minutes she has her finger in the food and she's tasting it and she keeps putting her finger back and tasting it and the students are just on the edge of their seats like would you please stop doing that or at least I don't want to know you're doing that. If you're doing it, I don't want to know about it. So there are a lot of different…..
MP7: Well you know when you're looking at other cultures, their attitudes about how to prepare foods are very different. And their concept of hygiene isn't always the same.
MP7: Number eight. What factors or circumstances would enable you to follow a food safety recommendation? What are the conditions by which you would follow a food safety recommendation?
P2: Knowing about them.
P3, P4, P6: Right
P3: And getting the free…knowing you're going to get like free eggs if you bring the eggs back.
P6: When [PARTICIPANT 5] went online and found out about my eggs, he called me and said "you won." It's the only time I had a number that won anything.
P2: What made you think of checking?
P5: Oh they….Grandma wanted to know, then Mom forced me to look up online and I didn't care at all. I mean, to me it didn't make any difference.
P4: I had just bought all these eggs.
P6: I saw it in the newspaper. What stores had…they were distributed to from these particular farms. What stores they had gone to. And I had bought mine at Albertson's. And so [PARTICIPANT 6] went on the google and found out that one of the ….Albertson's…
P5: Well there were some brand names…it was like some other eggs….but Albertson's had its name on it. There were several different companies on the list. It had like 254 through 297 eggs had it.
P2: So it was easy for you to find the information
P5: Yeah
P2: and that probably contributed to the compliance. I think, you know, convenience…if it's convenient to comply, great. If it's expensive or inconvenient, people might go nah, I don't want to.
P1: They want to find out how it affects people. They're dying.
P2: True, how bad it is.
MP7: Like the Homeland Security rating…red alert, orange alert,
P3: It's like that on my mommy group—somebody posted it and posted a link to go look, and whenever someone posts like child Benadryl recall or Tylenol recall, you're looking at that right away.
P2: What's your mommy link?
P3: Slocountymommies. It's like a message board?

P2: Oh okay.
P3: It's local. So someone posted it, usually when it's something I know the kids have probably had, I check it right away. But like with the eggs, it was so national, and I knew mine were from Poly, so I just didn't even bother. Plus they don't even eat that many eggs.
MP7: I didn't even care.
P2: And we're still here.
MP7: Number nine. What factors or circumstances would make it difficult or impossible for you to follow a food safety recommendation?
Well, I can tell you one.
P1: Hunger.
MP7: Hunger. I mean there have been times when I've been hungry, and I look in the refrigerator, when we were first married,
P2: Stuff didn't stay in our refrigerator long enough to get bad in those days.
MP7: Oh, there were a few things. I would just kind of skim off the mold….
P4: Scrape the mold off the cheese….
P3: Whenever they have one of those things where someone eats something gross at a fast food restaurant, we always still go to the fast food restaurant. She can only eat at fast food restaurants. So you know if you find a finger in your meal at Wendy's, we're just going to hope that that doesn't happen at our Wendy's.
MP7: Extra nutrition, yeah.
P1: Protein, right.
MP7: Anybody else have anything?
P2: That was the one that what would keep you from? What was the question?
MP7: What factors or circumstances would make it difficult or impossible….
P3: If it's something that doesn't make sense.
P4: Like recipes.
P2: Like you were saying with the chicken thing.
P3: Or when they want you to have wood cutting boards or plastic cutting boards, and they want you to have glass cutting boards but the glass cutting boards aren't good for your knives so it's like if it's too confusing you just give up.
MP7: I stay organic. Wood cutting boards.
P2: I like the point you made earlier, too, [PARTICIPANT 4], about there being so much and I'm wondering…my students don't cook. At all. And I'm pretty sure they didn't see much cooking growing up apparently, and I don't think they know. How do you know all this stuff? If you don't know what food safety is, if you've never been taught, how do we learn that?
P4: You read the beginning of most cookbooks.
P5: Who reads the beginning of a cook book?
P4: I do.
P5: I just look for what I'm going to make….
P2: Steak, Steak A, Steak b….
P4: When you want to learn about different equipment for your kitchen…a lot of the food safety stuff is right up front.

P3: Or TV, like on the Food Network. Cause some of the chefs, they'll show you how to make something, and they'll tell you oh well the food safety books tell you not to do what I'm about to do and they do it.
P2: Oh really?
P4: Man versus food. Don't eat a 9 lb burrito.
P5: Yeah. Unless you want to win a contest.
MP7: a nine pound burrito?
P5: It was really only 6 pounds.
P2: Did he comply with a food safety request?
MP7: Okay the last question. Are there any other issues that come to mind when you think about following a food safety recommendation? Are there any things, plus minus, that influence you to follow one or not follow one.
P4: Well, I always…
MP7: I think severity. To me, we've said that earlier.
P5: Yeah.
MP7: But I think the severity of the issue…if somebody came on and said eat this and you will die.
P2: It's got anthrax or something.
P1: Tylenol.
MP7: I'm thinking there should be some sort of kind of I don't want to say alert hierarchy, but if it's like say for example a nut allergy ….
P2: That could be fatal.
P3: Yeah.
MP7: It could be fatal. You know it might have two colors like red for the people who have nut allergies and it's okay for the rest of us. But I mean some sort of specific
P4: They have markings, but that would be great. Instead of trying to read through all of that.
P3: With the labels, it drives me nuts because with the allergies, they only have to put it somewhere on the label in bold, so if they put contains nuts, they can put it in the ingredients with peanuts in bold, or they can put it at the bottom it contains….because there are like 12 allergens they put on. I always call companies because they're like oh we're not required to put it at the bottom as this may contain, we can just list it in the ingredients …you know it contains 35 ingredients and half of them are hydrogenated stuff and you have to read through the entire thing
P6: That's why we buy the same thing over and over.
P3: Yeah.
MP7: It's also in my humble opinion why it's very important to learn how to cook. Because then you can make things exactly the way you want them. You know, [PARTICIPANT 5] likes protein…
P5: Steak…
MP7: Knock off the horns and tail…
P2: I'm kind of thinking about how I would like to know, I mean getting back to the original scenario of the research…if there is let's say somebody tampering with the food supply…I'm trying to think about how I would find out most effectively….

P4: Remember when they had the Tylenol poisoning? People died. There were some horrible…I had little kids. You give them Tylenol all the time. It's very scary.
MP7: It prompted the safety caps on virtually everything.
P2: And the plastic covers. The little open things. I kind of follow the news, but not globally, I'm not parked in front of the TV news every night, so I'm thinking you know, you saw the eggs in the paper? Was that the first time you saw it?
P6: I read the paper every day and I listen to the news every morning.
MP7: TV news or radio?
P6: TV news.
P2: I wonder how many people are not going to hear that right away?
P3: I don't have cable and I don't listen to the news.
P4: I saw it on the Internet—it was on there. When it came up on the computer, it was on Yahoo.
P5: Yeah, it was on the front of Yahoo.
P3: And everybody was posting it on Facebook.
MP7: The one I remember was the organic lettuce farm in Cambria that caused some ungodly number of deaths and you know, nobody heard about it. Until don't worry, it's all been recalled. It's like whoa.
P3: You wonder how that happens. I had a friend who broke her toe last night, and she has 30 people talking about it that are on Facebook, so …
P2: I think this was pre-Facebook.
P3: Yeah, it must have been, because it seems now it'd be like I got sick from this lettuce, what do you think of that?
P2: I think we're very vulnerable to that kind of market pressure, too. It's like when you look at mad cow, which is really kind of in the past at this point knock on wood, but to do…to make the entire cattle industry do what they were supposed to do to avoid the you know very very low risk of mad cow disease—they were looking at the money, so we're kind of dependent on the government I think to regulate this, but it's clear that they don't, because stuff was still coming through the system that shouldn't have happened.
P4: And the chickens, I thought, was the feed that caused it.
P6: The feed and the conditions.
P2: And they knew about this guy, right? This was not his first barbeque. He'd had some problems before.
P6: Actually, there were two. In Iowa. The conditions were deplorable.
P3: Yeah, I really don't know if the government's doing their job here. I know some people who don't eat meat and other things because I mean ground meat is the most disgusting like, it's ground at the factory, because you're getting bits of fifty different cows, and if one is sick, you know what I mean? It's all mixed up. They have a problem when they move the line too fast…they end up with basically guts in the meat.
MP7: Actually, that's probably not all that bad for you, but we're not used to it.
P3: Yeah, we're not used to it, and I don't like the idea of eating a lot of different cows in one hamburger. I would prefer…if I were going to do it, I'd go to the butcher shop and buy a cut and have it ground.
P2: Sure, you can do that.

P3: I just mean the idea of going to McDonald's and getting this like
P2: We don't know where our food is coming from. [PARTICIPANT 7] systematically avoids Chinese milk. He has a thing about Chinese milk.
P4: Chinese milk?
P2: Yeah, cause they take their shortcuts. And you don't know, that's the thing.
P4: Who uses Chinese milk?
P2: Some of the low price brands. Like what was it, Crystal?
MP7: Crystal.
P2: Crystal is Chinese milk.
P6: I didn't know that.
P2: See? So you think this is a great buy.
MP7: What you do is you spend more…
P2: You spend about twice as much.
MP7: And then you're okay.
P2: We don't have location labeling either, because….
P4: We have California real cheese. It's on milk, too. Ice cream…
P2: Yeah, but.
P4: I'm going to look for that now.
P2: There are a lot of people arguing we should have location like where did this avocado come from? But of course people don't want that, because then it won't sell for as much if you just think it's an avocado.
P3: It's only people who are trying to eat more locally. And they want to support the local businesses, like if you go to Farmer's Market, it's not cheaper to buy stuff at Farmer's market than at the grocery store. You want the stuff that was picked this week, not three weeks ago.
P4: Didn't you have a friend who bought some vegetables from some other country and got sick? And you said, make sure…I think it was in your group, the Red Hat Ladies….
P6: The only thing is I don't like to buy fruits or vegetables that come from other countries because by the time they get here, you can't even peel the tangerines. They're supposed to be able to be peeled. The outside is so like leather. So I just make a point—if it's from out of the country, I don't buy it.
P2: Well, how do you know?
P6: They have to be labeled.
P2: They are labeled then? Okay.
P3: It's usually really small print.
P6: Yes, you have to look for it.
P3: If you go to Trader Joe's, I always check the grapes, because imported grapes have a lot of pesticide on them… [PARTICIPANT 4'S DAUGHTER] will eat about 2 pounds of grapes at a time, so I try to get the ones from the US but you have to look at all the small tiny print at the bottom.
P4: Now they're putting larger labels on all the vegetables that are US.
P2: It sells.
P6: I bought some vegetables yesterday in a package and I was surprised it had the labeling from USA.

P2: I like that.
P6: I do, too.
P2: But we're all willing and able to pay more…
P3: If you go to the discount grocery stores, everything is from out of the country. But they do have that Chock Full of Nuts coffee…
P4: They have some good deals.
P3: If you go there, and you're broke, and there's a big bag of apples for $1, you're not going to worry too much about where it's from.
P1: Scolari's is different though.
P3: I think probably, just for this project, I think a lot of people, you know you can go to Walmart and get groceries in other states…and I'm sure you're not getting like really high…I wouldn't
P4: It's not cheaper either.
P3: It's not? When I went to the one with [PARTICIPANT 4'S SISTER] in Colorado, it wasn't good local stuff. It was like shipped from China or something.
MP7: When we were in New York, back then, we're talking 30 years ago, lettuce was $1 a piece, for a head of lettuce and they …
P2: were awful.
MP7: tiny little heads
P2: I remember you came out and you went I can't buy this.
P6: I said in California, we throw vegetables like this away. It was so….just so….
MP7: There was an article we saw I don't remember where it was syndicated on but they talked about …it was a BBC I think it was….and it was about buying fruits and vegetables in England and what they basically said was you can have inexpensive fruits and vegetables in cans, and safely. So that's what we were doing.
P2: Are we done?
MP7: Yes

Focus Group #2
October 2010

Moderator M: So, today I first want to thank you all for coming to my focus group today for my dissertation research, which is going to be primarily at food safety, but I have asked you all to come here because of your experience in social media and I am interested in hearing your insights. I am interested in how consumers how they or do not follower food safety recommendations and food safety information. Whether it is from the Internet or posted on social media, so.. um…. I appreciate any responses you have and comments and insights into food safety, social media, and at anytime if you need to leave, that is perfectly fine. There is no right or wrong answer. I just, you know, want to know what you really think about the subject.
So, the first question I have for you all is when you all think about food safety recommendations, what comes to mind? Is there a recent event that you have associated with a food safety recommendation?
Participant 1 / P1: Well, I mean, there was eggs and such. You know, so you make sure that you do not have any raw ones or make sure to cook your eggs and that type of thing.
M: Um hmm.
P2: Yeah, I think of the lettuce last year, and the cantaloupe recall, and the spinach that was affected by e coli and the FDA recalls were very informative.
M: Very informative.
P2: Right, and …..
P7: Baby formula.
P3: And then there was the pet food.
P4 (M): Yeah, I was going to say that there has been a lot of recalls involving dogfood.
M: Dog food recalls. Do you see a trend in paying more attention to these [messages] .. um, these are happening more frequently, or do you think that this is always a recurring thing?
P3: I think, that it is a recurring thing, but it seems that like it is more prevalent because of how connected everything is now. And it is easier to find out – you don't have to rely on what the big news sources are saying since it is spread in other ways.
P4 (M): I mean, how many times it happens does somebody catch it and report it.
M: Um hmm
P5: I think that because of the big distribution of these companies it seems that like, you know something like the egg recall – you are going to be hitting more markets across the country because of that one particular company that distributed something like..
P6: Exactly! Like if it was smaller farmers had an issue and one small farm is not going to affect such a huge product.
P3: Yes, and both not only the impact of the issue and how quickly the news gets out that something is bad, but also the impact that it has on society has is needed to see how widespread it is.
M: Hmm hmm. These are all interesting points that everyone is bringing in from these different perspectives. And we have talked about the different food recalls like eggs,

spinach, pet food, baby formula. It's, you know, definitely issues across the board with. Um – what do you believe are some of the advantages in following food safety messages, or food safety recommendations?
P8: Well, I really don't follow them!
[Participants laugh]
P8: It is a shame, they announced the spinach recall and I was like – eh! I bought it, and I am going to eat it! I am still here, and so I am fine. And I remember the first one was the spinach one – that is the first one that I remember.
P10: Peanut Butter one.
P8: Right, peanut butter.
P6: The peanut butter one, and the one this summer with Spaghettios- the one with the meatballs. And then there was the one with the cereals too, the cereals packaging and hm.
M: Hmm hmm, right.
P8: Yeah, I never stopped buying it, so it was kinda ah..
M: Why was that?
P5: I will stop buying it and stop eating it. Yeah, if I have it – I will throw it away,
P7: Yeah, but you have to be aware of it and in fact that there is a recall. Somebody mentioned the petfood and it was one of the brands that I feed, so I am going to pick the brand that is not involved in the recall. But I do want to know for sure that there is a recall.
P4: Yeah, I think that [PARTICIPANT EIGHT]'s point is that if the store is still selling it, it is their responsibility to take the recall items off the shelf and so the stuff that they are still selling is still safe.
P6: Yeah, but the question is are you willing to risk it? You know [Group Laughs] – if they haven't had the time to get the items of the shelves and they don't know from some reason and where does your responsibility come in about the recall and stop buying the products that are on the recall list, even if it [the store] is still selling it. You have to think about your own responsibility.
P6: And the thing is that it is not too hard to investigate what the FDA is saying or if the items are only distributed in certain areas. You can go very easily and do a little bit of research and figure out, "Okay, it's not affecting 1) the brand that I am buying, it is not in this region, it is not affecting these products… then okay, I am safe to purchase eggs and such. A little bit of follow-up makes all the difference.
P10: Hmm mm – I would rather wait.
P8: What happens to me too is that I check to see if affects me and the products that I might buy. I might change the brand I buy, like the brand of peanut butter that I buy and do this for the next month or so, and see how it goes. But I wouldn't stop buying peanut butter all together.
P10: I would rather not get food poisoning myself. [Group Laughs]
P8: Yeah, it is better to check it.
M: Yeah, with these resources that you guys are going after and searching for, what particular sources are you looking at?
P7: CDC

M: CDC.
P10: Local News Channels.
M: Local News Channels.
P9: We use Google News and it is on my homepage, so I skip and scan through all of the articles and I look and I see "Oh! There is a food recall, and it is something and something that my friends are going to do so I share it on Facebook and…
P7: That happens a lot of the times that happens with recalls and stuff that people are sharing on Facebook and or I will go out on NPR and look and by like "oh… okay."
P5: Yeah, but with the news cycle and they always list all of the details and so, you have to double check and go somewhere else.
M: Double check your resources.
P5: Right.
P3: Right, so you know with the eggs and peanut butter, they list things like the manufacturer and their contact address, so you can go to their website and look and
P5, P6, P7: Exactly.
M: Hmm mmm. Well, we briefly talked about the advantages of following a food safety recommendation, but what are some of the disadvantages of not following a food safety message?
P4: They make you paranoid!
[Group Laughs]
P10: Yeah, I suppose so.
P8: I mean, like a false alarm and they are coming so fast and one after the other and… I don't know what else to do. And like, how long do they last and they never have any expiration dates and well, if it is vegetables – well, they spoil fast.
P10: And you want to make sure that they got everything when they recalled it.
P8, P7, P5: Hmm hmm.
P4: I think that it can really hurt the businesses and jobs too. I don't know or remember who exactly it was with the peanut butter, but it was some small community in Georgia and they were selling it to their neighbors, so that can make them buy it and be more aware and they are worried about losing their farms and it would be a really huge impact on them because the result on this factory and so.
P6: And I find it very unsettling that.. well, to even think about it. Because well, you realize that E. coli can um or has affected all of the spinach and….. well…….. maybe it is on the lettuce too. Maybe they are not handling this food properly as well. And, if you start thinking about it too much, then…
P10: There is such a thing as being too informed. You start to see things where there aren't any.
P2: Yeah, that is what I say as well.
P10: Yeah.
P6: Yeah, I think that it is too much information.
P4: I think that one of the things that is really scary is that if you go out to eat. You can control what is in your home and you cannot investigate what goes on in a restaurant, and I know that is very scary.
M: Hmm mmm

P9: I know when I grew up and was working at Taco Bell, through the whole green onion thing, and it was three or four years ago, and they were using these green onions and you go to Taco Bell right now, they do not have any green onions. They don't buy it, but people still request them and but, the truth is…
[Group Laughs]
P9: But yeah, there are no green onions on there and so
P7: And there are no black olives there anymore as well.
P9: Right, and even when the tomato thing was going on fairly recently, we checked out tomatoes for every single package and I am sure that not all restaurants do that. That limited them actually and the customers requested them and the customers actually were taking charge of their own decision and they would request tomatoes just for that.
P6: That is pretty vigilant for a Taco Bell.
P5: Yeah, I am quite impressed.
[Group Laughs]
P4: Yeah, I was not expecting that.
P10: Which one did you say where that one was?
P9: It was in Martin, Tennessee.
P7: Yeah, I remember when I worked at Burger King and it was during the tomato thing and there were customers complaining that they were not getting tomatoes.
P10, P9: Oooohh.
P7: Yeah, I was not sure if they if there were aware of the tomato epidemic thing, or if they didn't care. They were either unaware of it or did not care. But they were all like, I want tomatoes!
[Group Laughs]
P5: I guess they would be upset that they were not getting their tomatoes.
P10: Even restaurants, they won't even…
P7: Yeah, we left them off for their safety and they want them back on.
[Group Laughs]
P10: I think that even restaurants are taking it a step further. Their public health information is a lot more public than they used to be.
P2: That is true.
P10: Yeah, and I mean, Dawn Dairy, anyone?
[Group Laughs]
P8: Yes, that is food for thought.
M: Well…… if you think that .. if these food companies would initiate these food safety recommendations that they are not communicating…….. not enough information or too much information or are they on the extreme or the flipside or not providing enough information for the consumers?
P10: I don't think that they use enough judgment on what constitutes as a health hazard. I mean, there is a recall, and then there is a recall that can kill somebody. Not everything that goes wrong is going to be deadly.
M: Hmmm.

P3: My question for you would be when you are saying that it is a recall, are you saying it as people getting information from the CDC or how the news is interpreting the information, because there is..
P10: That is a good point.
P3: Right. There is what the CDC is releasing, and then there is the news picks up and wants to tell you. Which could be an overarching story or leaving out the majority of the details, which makes me the consumer to have to look it up and it will take some time, and so….. where is the disconnect? Is the CDC releasing the correct information, or am I not getting it from any of the stations?
M: Hmm hmm – that is an excellent question, and I do believe that … I know that crisis communication professionals are definitely addressing is that how to best communicate the message and how to best use multiple channels and make sure that everyone is getting the same message about a food, or health crisis, or a food safety crisis message in a timely manner. So, it is a constant struggle for crisis communication professionals.
P4: Do you think that they communicate more in the areas that have been affected – like in the regions where the spinach recall happened – do you think that they communicate more details on what happened there compared to other areas?
P10: I hope so.
M: Yeah
P4: Yeah, I would hope so too, and the local news would pick it up and have more detail in them and so.
M: Yes, I think so – there is a trend to have a more localized focus with crisis communication if it is impacted in one particular area – but I think that also people are also covering their basis on making sure that everyone possibly has the message who could possibly be affected within the region with the same message, so it is kind of tricky in that regard. So… so in terms of anything else that you do associate with food safety, any perceptions, attitudes, others things that we have not discussed so far?
[Pause]
P5: Well, I think that there is some things that you can find out about food that is disturbing that are not considered to be a food crisis. For example, on Facebook, I found out that veggie burgers have hexane in them, which is a gasoline byproduct in them and it is a normal component to them and I would consider something like that something I would like to know about because I eat those on a regular basis and I don't want that in my food. But that is not a food crisis, and so I am using that as an example – sometimes you find out that there are these really disturbing additives in food that …
P7: Even natural components of food that like milk has like millions of cells per gallon and that is kind of gross when you think about it.
[Group Laughs]
P10: This is why I do not cook.
M: Well, to go with that information about Facebook, who shared that information with you? Is it someone that you followed or knew? Or was it one of your friends?
P5: Well, I think that my mom posted it on my Facebook page and I then posted it on someone else's page and so..
M: So it was like a trickling effect of networks?

P5: Yes. I think that she read it on something like Mother Jones News or something.
M: Yeah
P6: I think I saw that too somewhere else.
M: So, to kind of build on to that, with having Facebook and having your Mom share that information, are they any individuals or groups that would approve of you following a food safety message or .. that you know of in your daily activities?
P8: Could you rephrase that?
M: Well, is there anyone that you know, in your immediate proximity – your family, friends – that would know – co-workers – that would approve of you following specific food safety messages?
P10: My mom is pretty paranoid.
P8: Yeah, I was going to say my Mom.
[Group Laughs]
P8: Yeah, she is on my Facebook.
P4: I think that people would not necessarily disapprove, but I don't think that they would push me to do it.
M: What about in the community – your neighbors or opinion leaders, schools, or anyone or…
P6: Well, I live in a dormitory with three other undergraduates and they do not keep up with the news or what is going on, and so….. I don't even keep up with the news that much myself compared to some other people and so I am the only one that does, so I think that they would approve of me looking out for them and their best interests and food safety – that type of thing. Because I think that …… the whole thing with the Spaghettios and meatballs thing and.. my roommate had one of those cans, and it was in her drawer, and I was like – oh, got to keep an eye out for her.
[Group Laughs]
M: Right, are there any individuals that would disapprove of you not following a food safety message?
P6: My friends would think that I am paranoid.
M: Paranoid.
P10: Undergrads in general, have you ever told an undergrad not to eat something? I should know – I was one, I should know.
P8: Family members, I think that other than family members I can not think of anyone else that would be mad at me – that was the first thing that was recalled was the spinach, and it was like you are not eating spinach are you… Noooooo Mom…..
[Group Laughs]
P8: Yes, you are two thousand miles away. I am not going to tell you anything.
M: Is there anything else that you associate with people's view of food safety messages and recommendations? Perceptions, feelings? Like….. what do your family members think about food safety?
[Pause]
P3: I think that they are all for it.
M: All for it.
P10: Yeah, my Dad just doesn't care.

M: Really?
P10: Yeah, it doesn't bother him. Because he doesn't eat what is being recalled on.
P5: My mom is the same way. She was the one that told me about the pet food, and was like are you aware of this and make sure that I didn't buy it.
P8: I think that is a factor. My mom warns me about them, constantly writes to me about them, tells me about it – but they don't follow it themselves, because they get their eggs from the neighbor who has chickens, or from my grandfather, who has chickens. Because we live in the countryside, so… so they don't get spinach either since it is imported.. so in [location of hometown], it is very expensive, so you don't get those things.
M: So, do you think that having that local aspect and cost plays a factor in the product and affects the situation?
Group: Yes
P6: On the other hand, if you are buying local, then something could be wrong and you do not know about it. You don't know because it is local and if it is regulated and like – if farmers are selling cantaloupe on the side of the road and you know, they could be poisoned.
[Group Laughs]
P4: Yeah, but they are usually the best ones!
P7: Right, and it also points to a lack of information where .. like releases in the news where they talked about spinach and pinpointed it to a specific location and manufacturer, and field irrigation, and it is not like local farmers are in charge of local field irrigation and corporate farmers are. So, until that information is released, you have this phobia that you do not touch any spinach, and so you could be supporting local field irrigation and so.. but instead you are impacting the local economy with your actions and because of the lack of information.
P10: It also comes back to how much judgment the people reporting the news is using in communicating during the crisis, and how much information they are gathering and ..
P5: But I think that also the amount of time to conduct the investigation is important… it takes a lot of time… a lot of time.
P8: Yeah, and when it is vegetables, and by the time they pinpoint it, it is over.
P4: And when people report it, and when people start reporting that they are getting sick, it takes time to determine the exact cause and where it started and so there is a period of time where you are in a gray zone, and so….
P8: Have they… ever recalled anything organic? Anything?..... I don't remember them ever recalling anything like that.
P5, P4, P3: No, I don't think so.
P9: I think that there has been a general warning issued for all products, but not just organic.
P8: Like for spinach?
P9: Yeah. Right.
P8: Hmm, I don't remember those.
M: Interesting. So…… we have talked about the advantages, disadvantages of following a food safety recommendation or crisis message – and some of the kind of motivating

factors that are related to these, um – what would be some of these factors for you personally to follow some of these food safety messages? Meaning – what would be some of the necessary elements to these messages that would influence you to comply with these messages? What would need to be communicated in these messages regarding a specific product that you use?
P10: I think that the source of the information is important reporting the information would be the first thing that I look at. Who was telling me that this is happening.
M: Um hmm.
P6: I think that your friends, and if they read somewhere that people were getting food poisoning somewhere that you knew where it was, and what information they were providing – where it was being distributed, if it was near you..like the egg thing. I didn't see anything in Tennessee about that and so, but still everyone is paranoid about it since they saw that one small distributor was responsible and that it was all over the news.
P7: It [the information] needs to be regionally specific.
M: Regionally specific.
P7: And so, that people from the local news need to say – this does not affect our region, but if you have traveled outside of the region, then you need to listen to these messages and the potential of them getting sick. I don't think that these messages are well communicated.
M: Um hmm. Would the impact of seeing this newsfeed on Twitter, from someone that you thought was a credible source, like someone that you follow on a regular basis – would that influence you? To search for more information about the food safety recall?
P10: I would look to see if anyone else was saying the same thing.
P5: I think that if they are credible… I mean, Twitter is only 140 characters, and so it would have to be more like a news story. However, if they had that the state of [state of participants] had something specific, I would then look for more information on where it was affected, who was affected, and where to go for more information. I would look for more information, but if it just said "egg recall," and salmonella, I would not think that much of it.
M: So, when you think of Facebook and Twitter… would you be looking at how many have shared, or retweeted the article, or commented on it – does this have any affect on you?
P4: I think that, with something as serious as that, I would probably want to go out and find out some hard facts.
P10: Or like the game of telephone – like on Twitter, they just keep on repeating the same message.
M: Right. What would be some of the things that would make it impossible to .. or difficult for you to follow a food safety recommendation message? If you hear a food safety recommendation about spinach, what would be some of the things or factors that would make it difficult for you to follow?
P4: If there is too much information.
M: Too much information.
P4: If there is too much information, then.. if there are food recalls every single day, then you wouldn't know which was important.

P8: Too saturated. I was going to say that – I noticed that they are coming in so fast and one after another that they announce two or three at a time and I am like… ah…. What?!! I don't remember!
[Group laughs]
P10: You might be happier not knowing what you are eating.
P8: Exactly – I am happy if I can just open up the can and eat.
P4: It does depend how hungry you are and so…
P8: Exactly.
M: So, does hunger play a factor in complying with a food safety message?
P10: It depends on what it is.
M: Depends on what it is.
P6: I just am concerned with not getting sick.
P10: Yeah, food poisoning is not a fun thing.
P7: Yeah, like the green onion thing – I would still eat it during that time and if I was the one preparing the meal, then wash them personally, or cooked it personally – I would feel better about it. Even during the egg thing, I would still be cooking my eggs and not worrying about it as much or that type of thing. You know what you did, I mean… that is all you need to do.
P8: The other thing that is hard for me is that when it is some packaged thing and they give you the entire lot number, and it is like 55 digits. It is like, wait – which one do I follow?
P10: If it ends in 24…
P8: They give the entire lot number and say only the products that end or finish in these numbers, and they give you 18 numbers.
P6: Exactly – they show it to you so you can see it.
P8: Exactly. My mom says just smell it – and if it smells odd, then throw it away.
M: Hmmm, what about the severity of the food safety message? Do you guys feel that you are influenced by a message that is communicated either by don't do this or else you can get really, really sick and..
P4: Yeah, the more horrific, the more people that got sick, the more likely you are going to stay away from it.
P5: Yes, but it again all depends on the source. You will always notice that.
P4: Plus, if it is one person that has gotten really ill, then you know a 1,000 people have gotten ill but not too ill – you don't want to cry wolf with the severity either. It is not a possibly fatality, but you could be throwing up for a few days.
M: Hmm – and when you guys are talking about source, do you see the source to be the main organization – like the CDC – or another established food or health safety organization, or someone associated or affiliated with the source – so a particular person within that organization?
P7: Organization
P6, P5, P2: Yes
M: Main organization
P7: Yes, it is different if an organization cries wolf compared the a person – the organization will come down on that one person.

M: Interesting. My last question for you all is if there is any issues that you can think of that would be important to discuss related to food safety recommendations that we have missed during this focus group session?
P4: Well…. You had brought it up early [Participant 5] about the veggie burgers, and that is something that I would be interested in talking about. The government, allowable limits of ingredients – the limited amount of lead that can be in certain food products, and or particulars in the air, and such. I don't understand why those are allowable and why they are in our food.
P7: They tell you what is bad and recalled like fish, but they don't they don't tell you what is bad within the fish.
P6: Right, there is an acceptable amount of mercury allowed in a can of tuna, but why or what causes something to be at an acceptable level?
P10: Why is there even a question of an acceptable level
P7: It would be nice to have a label with that information on the products talking about what is the acceptable level, and what is in the product.
P5: Yeah, like in dairy, a lot of times with HGH (human growth hormone), when you talk about acceptable amounts of human growth hormones and antibiotics and stuff like that –
P8: I would be concerned with putting things in food that do not belong there. Why are you putting in plastic derivatives in my veggie burger? Like… veggie burger… put in veggies in!
P4: I think that labeling is important – it should be improved.
P10: Agreed.
M: Labeling is important.
P2: Well, I know that you can say that vegetables are known and organic, but we still want to be warned of what goes into them.
M: So, what I am hearing is that you are concerned and want more focus on the labeling that goes into food? More specific information on the ingredients and specifics on the packaging?
P3,P4,P9:P8: Yes, that would be good.
M: Okay, good.
P4: I would also like to see more information on labels for genetically modified food and organic food like organically grown chicken and..
P4: With that kind of stuff, you almost assume that there if it is not labeled as natural, then what does that mean?
P7: Yes, and you have to think about too what does it mean when companies label things as organic? Organic is different in different states. Organic from Colorado is different from organic from Oregon, and even in California.
P10: There needs to be standards on what organic is.
P4: Exactly.
P8: I would like somebody to define what organic is – other than charging you one dollar more.
P10: I think that you hit it on the head.

P7: I think also, Ben & Jerry's on their Facebook page – they had something out where they had to take out "all-natural" off their labels and packaging because they could not define what all natural was.
M: So, more conceptualization and clarification of some of these key terms would be beneficial for you as consumers? And possibly more education about these key terms and such?
Group: Yes.
P: Yes, and corporations need to take responsibility for stating that they are the best and if you are all-natural – then you better be all natural.
M: So basically walk the walk and talk the talk.
P4: It would also be nice too to see when reading a label at the grocery store to see immediately what this additive is and if there was a good dictionary for those key terms and such.
M: Like a food ingredient dictionary?
P6: Right, and if you could take out your Google goggles out and take a picture and something like that.
M: Yes, I have seen something like that with the new QR Code and scan a document and be like, oh – okay – with a list of information on it.
P10: I probably wouldn't read it.
[Group laughs]
M: This is all very interesting feedback and I really appreciate you all taking the time to participate in my focus group. These are all of the questions that I have for you all. Thank you very much.

Focus Group #3
October 2010

M: So, first, I would like to say thank you for coming to my focus group today and participating in my study on consumers food safety and crisis communications. I am particularly interested in hearing your thoughts and opinions from your experience working in the food industry on the food industry and dairy industry on why consumer are, or not following food safety recommendations. There is no right or wrong answer here, so I am interested to hearing your thoughts on the subject.
P3: I don't think that consumers read any labeling. More less right now. Quite frankly, being from adverting and marketing for most of my life. I did do the some work in adverting for McDonalds. It would take us most of the time to get a person to notice, not act, notice the ad that we put on the advertisement, television, ad – just to notice it. We may have to do this three or four times. But to get them out of their chair, and actually take action – nine times. We would run GRPs, where we would be running at any given time in any different mediums – television and newspapers – and we would run 600 GRPs a week And that was a low level.
P4: I think that more people are paying attention to food labels. I think that it is maybe it is the cohort I am with
P3: Most possibly.
P4: Yeah. But I read any food labels I buy – I always have. There are just some foods that I will not buy if it has something that I don't want, like MSG. And I do think that people read labels and there are other places that are, well, Oregon and Washington state are more strengitne that we do.
P2: You have that education level as well. I know a lot of people that do them too. I think that comes into consideration as well when you are talking about food labeling.
P3: You are interested in the food industry, and I mean….
P4: I think that it depends on where you are located.
P1: And I think that it does come down to price. Especially in this economy. If it is cheaper, they are going to go somewhere else and get it. Unless you are at a certain level of income. Somewhere you can go to a Fresh Market or like that in Knoxville- they are going to look at more.
P6: I think that is true, but I think that it all does depend on family size. I would have to make some compromise if I have three children besides my husband and I. Now I have to choice to decide what I would like to buy, and I would rather go for quality instead of quantity.
P3: That is probably everyone here. I still buy per value. I still have [SON'S NAME] at home, and he will be 12 on Saturday, and he demands certain things. He demands Kraft Macaroni and Cheese and not Great Value. But if I can find Great Value that is a few cents cheaper, I am going to buy it.
P2: I mean, we are spoiled in this country. We spend 15% of our income on food, and in every place around the world, that would be a joke. And that would be a generous estimate.

P3: I know what you mean. I mean, in Europe, we were in Florence. We went to the market. They butchered their chicken and left their feathers, feet and head on, and free range rooster, okay – they were selling it for six euros, which makes it 1.5 times the dollar, and it was very expensive and 6.50 for scrawny little bit. But they do spend money on food.
P5: It seems like our younger daughters who are in their 20s are much, much more food conscious and label conscious than we ever were. I guess they are obsessing over what we are eating – and we have gone full circle on where we started and where we are now. We are doing so much to our agriculture that we are seeing the effects of it right now.
P1: Another factor is our importation of product. We are getting so much products from South America that it has different laws down there. They can use whatever pesticides that they want down there and we have to be aware of that. When I was growing up, we did not have grapes growing in the middle of January. You had them when they were in season, and now you can get them anytime you want them. And so those products come from outside the country, and that is something to think about.
P6: I think that slow food and food sustainability will catch out. It is like you branched out to shitake mushrooms (to Participant Three), if we had more people that would have only one green house or green tomatoes – they would sell those in a quick minute.
P7: What I find in the farmer's market is that the majority of the people that are buying are not natives of [State]
P6: No, I think that the demographic is tourist. Newbies, like myself who have been here for 10 years or later, new residents who are used to having a quality food product, and we get people that rent cabins for the summer, we get people from a broad geographic region, but we think that it is possibly true since most people around here grow their own vegetables. And so, that is why we have to consider this in our communication with the community about our food products.
P4: Right, and people will pay here one half of what people will sell at other locations and Farmer's markets. Some can sell their free range eggs for 6 dollars a dozen, and I get three here. However, no one raised an eyebrow with the shitake mushrooms, and I was able to charge 20 dollars a pound.
P2: A lot of it is a cultural thing. Like, we started a pumpkin patch at our farm. The first year was mostly from our customers from the north, and they would tell us that they had these everywhere and back home. And here, everyone was like… what? And another thing that people would say to me at the farm is that if I wanted to get a pumpkin, I could get a bigger one at Walmart.
P1: And that is when you bring out your shotgun. With Walmart, you have this perceive convenience, and this perceived variety that….. well, I think that there is gong to be a big backlash to the big box stores.
P3: I know a few people here that periodically shop at Food City, or that is sort of thing that they need immediately, but if they go to Knoxville, they will shop at a Kroger or just to find things that are not carried here that they would like to have.
P4: [Participant 6] has asma, and a story where he has taken everything down to a few simple things for consumption and slowly adding them back in, and to see which ones are

susceptible. Gluten and muerta are two things that we need to consider. There are just a lot of people like that and food allergies are a few examples that are common right now.
P1: When we were growing up, we never had food allergies, what has changed? We have never heard of beef allergies before.
P5: I never knew that anyone could be allergic to peanut butter.
P1: No
P2: And people can die from it.
P3: I know!
M: Similar to peanut butter, there was a recall on this product a few years ago. And besides this case, are there are recent cases…
P3: Eggs.
M: Eggs.
P3. Eggs. Green onions from Mexico.
P2: Spinach deal.
P3: Yes, there was the spinach deal. Yeah, all of this last year. And for the Farmer's Market, we tried to capitalize on that. Know your local farmer, you know where your food comes from.
P2: It is not always a plus.
P4: It is interesting, we were just up at a farm in Virginia, and toured the farm, and I read his books. One of the things that he is seeing and has been for some time is that the method of farming and growing food determines its quality and that the problems that are associated are so related how things worked and handled. That they have found that they almost have to go back to having no vaccinations, no black foot, it is all related to the feed that they are getting for their animals, and by using natural elements like kelp, organic, nutritional balancer – and buy moving the animals from different pastures rather than confining is absolutely a terrible thing. It allows anaerobic conditions and all types of bacteria to grow and make bigger problems emerge. You have to start treating – if you don't do this at the beginning – then you don't have to worry. Treating is what gets into the food systems and then starts creating more problems – and we are getting into our food. We are what we eat. I wonder if down the road we are finding out that this is going to get worse.
P5: It is like a pipleline effect. Look at the estrogen in the water.
P3: Why is that in the water supply?
P5: Animals are giving a dosage of estrogen, and as so in humans., Then, it does not get filtered from the water supply and waste, so what happens is that it goes into fish. It all is recycled in the environment.
P4: It all comes back to us. I think that we are just at the beginning to realizing what is happening to us. What is coming back to us, what we are putting into the environment and we are going for many years pay for it. These unintended consequences are huge and things that always bite us in the ass. So I think that up there and see what they are doing up in that farm and seeing how they are dealing with fly larva and the thing is that to recycle naturally, and to create a product that is much, much higher in quality and people want it.

P4: People want it, and you can defer to some expenses to other expenses. I think that people are making better food choices, but I think that it does come down to education and perceived problems.
P3: Then there are of course food stamps, are you going to grocery staple items on questions.
P5: We are taking food stamps now at Farmer's Market. It is a huge thing to be able to do that. The cost of being able to do that is expense since you have to have certain equipment to process that. We are still small potatoes. We ever got a permanent facility, rain or shine, some sort of refrigeration, you know what I mean. I think that we can do that. I have had people call me and ask me if we take food stamps.
P3: I had a lady buy a bunch of cloves with food stamps, but it was not enough to turn in or worth it for me to cash it in.
P4: I think that there is a senior citizen program like that too, but the state did not have enough money to support it. I think that would be a great program to have and be great for people in this community.
M: Umm, when it comes to food safety and communication, you know the training and education, more information related to the public – is there anything else that messages or um training you have seen with the food industry that has been implemented proactively? Addressing some of the concerns that you all have raised, or not?
P3: Well, I think that there is not there yet. And I went to culinary school and have worked in several restaurants and locations, they do these things. For example, if we became a big deal and became farm to table – some local restaurants would pick up our products. Like, they have something like featuring [Farm name] local eggs, or products and whatever.
P5: It is like with some of our farmers who sell tomatoes at Farmer's Market. I put out an email about these tomatoes, and they were contacted by some of the local restaurants about purchasing them.
P3: It is like the foodie gatherer at UT. And I mean, she called me and wanted 30 pounds of homegrown tomatoes, and 3,000 red velvet peppers. I took her email and sent everyone back the information. I am thinking that people need to pass. In Florida, you need to have at least one person with a food safety certificate in each establishment. That knows what to look for in food, what fish items, what temperatures to store things, and I get here. I used to work at one of these local restaurants up here and they don't do anything. They don't even have anything!
P5: There is a food safety course that you have to take up here to work in the food restaurant business up here. You have to have at least one thing. I used to do it when I was working at [restaurant name]. It is a one-day, two-day thing – there really is not much to it. It depends on the health inspector.
P5: IT is like what they are doing over at Food City. They started this new product information system called nutravalue, where they assign points per item. What I find interesting is that the smart value peanut butter has less nutritional value compared to the larger Food City brand peanut butter. They say that this is independently evaluated.
P3: Why do you think that they do that?
P5: I have no clue.

P1: It is a gimic. Pure and simple.
P5: Food City advertises that their product is local.
P3, P4, P1: No it is not – it is from Virginia.
P2: Also, Virginia is local if it is compared with the alternative of New Mexico.
P3: Right.
P1: True.
P2: Right – it is all relative and their corporate headquarters is in Virginia.
P5: And when it ships, it loses its value.
P4: And what is interesting is that we have had our tomatoes that have not been hit by anything, and we have contacted Food City to see if they would like to buy them, and they said no. It is hard. And they say that it has to be USDA inspected.
P1: It is like our friend who was selling cabbages, and he was bringing a whole truck load behind, and he had one damaged cabbage, and was turned away. One bruised cabbage. He was selling cabbage on the side of the road for ten cents a piece. But the other thing, if they don't want it – they will find a reason not to have it.
P2: And another person I know took a load of green beans down to Atlanta, and they …. I think that the going price was at about 10 dollars a bushel, and he got down there, and they told him that they didn't need them. He had a truck load of green beans. But they told him – hey, tell you what – we feel sorry that you have driven all this way for nothing, and so we will give you $3 a bushel so that will cover your fuel cost – you can get your diesel money back out of it. He brought them home and sold them here.
P4: I would have sold them on the side of the road myself.
P2: I would have too.
P1: A lot of times you hear stores that they buy locally, and they are very slow in paying for their product. Some of them take about six months in paying for them. And when you are waiting six months for that to be paid, you still have bills to pay and they..
P5: They don't pay after a few days?
P1: No, six months.
P2: Walmart is pretty bad in that regard.
P5: Fresh Market is another one that should be added on that list as well.
P3: I will have to try to contact them about that.
P1: I think that they are a chain, so you will have to contact the buyer – and you will have a lot of competition since a lot of people are trying to tap that market.
P5: I don't think that the regulations like from the USDA, from what I have read, encourage the small farmer or in people… people around here do not necessarily understand the word sustainability, and or big word is not explained well.
M: Do you think that it would be better to have more like consistent definitions on what sustainability is, or…
P5: Or that they do not understand what that is or how to explain exactly what it is.
P3: Everything in the newspaper, television commercial to be communicated to target at a 11-year old. And that is the type - that is where most people – about 70 percent are, is at the or can read at the level of an 11-year old. And don't think that if you use big two dollar words that you are going to get less people to read it or understand it. They won't.

M: Do you think that ties into food safety messages and recommendations. What would be using… that type of language be an advantages. What would be some of the food recommendations messages that you would see?
P2: People assume that all food is safe and healthy.
P7: That is right.
P2: People will not wash – I am as bad as anybody – I can not wash anything else that I buy since I assume that they are processed and ready to eat. An apple is an apple – I am not concerned with pesticides. I also do not have to worry about worms.
[Group Laughs]
Most people assume that everything is fine, and if there is anything else wrong with it – someone else will get sick from it before I do. And it will be taken off the shelf and recalled.
P4: Until it is not.
P2: Until it is not.
P4: It is that pedullum swings wide, and you assume that everything is fine until there is one incident that and you don't want to eat anything with that, and you can't trust anything. You know, that it is kind of..
P2: You know, if I raised the apple, I would eat it with a knife. I don't want to bite off half a worm. But buying an apple, I do not worry about worms. I just eat it away. Because it is not going to be there.
P1: Because they would be inspected.
P2: Right.
P4: Unless you are worried about pesticides.
P5: There was an incident at the Farmer's Market. Someone was selling corn, and someone not here, and corn gets corn worms at the end of the silk, and so most people – if you have ever lived in the country – expect something like that especially towards the end of the season. Well, she got a customer coming back saying that they have maggots on their corn. She said I am so sorry and refund her money, which she did.
P3: I can't believe that the person did not know that.
P2: Growing up, I didn't ever have corn that didn't have corn worms on it.
P4: As my grandfather had said – that if the corn doesn't have worms on it, you probably wouldn't like it either.
[Group Laughs]
P2: Then you cut it off!
P3: That is right, and they are so far removed from the farm.
P1: It better be perfect or they will not touch it.
P2: That is right.
P1: These people do not know what they are eating, they don't know what a corn worm looks like – it does look like a maggot – and that is all they know.
P4: You see that at the Farmer's Market – you get to see some vendors that wash their produce, and others that do not.
P7: I don't know how they do that, I have to wash my vegetables. I don't like to have dirt on my vegetables when I am selling them to customers.

P4: But it is taking off a protective coating which is naturally on the food. People do want perfect.
P7: I know that they want it to be perfect. They will not buy anything if it has a bruise or anything on it.
P4: If they buy anything used, they want it to look like it is new. They want their produce to look like it and make it look perfect. Perfectly shaped and sized and color…
P1: Right, and we were doing the pumpkins – they were dirty, they were out in the field, and so they might be dirt on the children. We had to take paper towels and we had to clip them off the vine so we can show them that they were grown here. This is a farm, you are going to get dirty. But they wanted clean pumpkins, and if you go over to Walmart – all of those pumpkins have been washed. Because they have to be cleaned. Because the public demands it – heaven forbid we will get dirty.
P3: As I mentioned before, when you are looking at the communication I would definitely use the simplest words that you can get the same effect without going over people's heads. You know, what is – there are 300 words that comprise of 70 percent of the English language. That, that is sad, and we have reduced the English language to 300 words. So, and a third are four letter words.
P2: So we have a better vocabulary than we think.
P3: Right [laughs]. But I think simplify everything down and the methods to get it out to the people – you got a tremendous variety and I would hit them all and if it is a food safety alert – then they can go everywhere and it should not be at no charge. With your newspapers, you are not going to get.. they might…
P5: They will do a press release. They take press releases all the time.
P3: Yeah, but what happens if you want it on the front page?
P5: They will do that. Any standard paper will. I know that you can go online to the [Local newspaper website] and comment and reply directly online. There are all sorts of conversations, for a lack of a better word, that goes on.
P3: But I think that the main point of this should be that these are all of these outlets that you have available and use. Even if it is in a confined area, you can still use them. Also, area like the Northeast, or Southeast – every television cable and whatever has different legs that they can broadcast out of and cover just a certain part of the country. So, if you have a problem in an isolated area and so only communicate to only Northeast America, you can communicate by that and not worry about the rest of the country. You can get them and almost everything in magazines – I don't think that you would go and do that since they are too slow – I can get them to put it on their online thing. Because – when I worked with Delta – any time that a plan would crash we had everyone's telephone number across the country. We had to pull every single person there at 8 pm on Sunday night when a plane crashed and so we had to pull off everything off of Memphis and pull everything – all advertising off – because you do not want that – where they appear on the second or third page and we – didn't want our name to be associated with that.
P5: I don't know, I just think that there is just a lot of comment out there. There is a center for agriculture sustainability and there are factions that are seemed to push the envelope of the Department of Agriculture with the food safety thing and but that is….. I

am not sure how far their regulations are and where they go to, and when the legislation gets into it.
P1: Far. Many still talks go on there. 25 years ago, I was a food and safety drug inspector, and I had to leave because of what I was picking up on some of the store shelves in a store in [town], and I didn't like the mouse population in the backroom storage area in this store (long since gone). And they had customers, and I was getting complaints from vendors because the mice were eating their products. And, the president called Nashville and said "Get the blanky blank off my back." And I was leaving for another job. Times have changed and Nashville things have changed – so it is not like it used to be. In the milk industry, they are very strict.
P5: I never understood about this whole thing with pasteurized and milk and .. and I am sure that you can explain it.
P1: [Laughs] It is scary. The thing that I want to talk before that is the organic versus non-organic. There is no difference – it is a gimic! The is no difference – when they talk about the antibiotic, whenever our milk is picked up – which is every other day, we large farms get a sample taken from our milk every day and it goes with the dairy plant. When they get to the plant – whether it is Mayfields or whoever – they take a sample of milk from the product and checking it for antibiotics and water dilusion, and smell – they smell it. And if there is anything that is out of wack – it is unloaded and they turn it down, and it goes somewhere in the middle of the field.
P2: If there is a problem with the tanker sample, then they go back to the individual farm sample.
P1: That means that you have two hours that you have a problem with your milk.
P2: And you have a problem with your tanker load, and just bought yourself $40,000 worth of milk.
P1: By that mistake, we make sure that our inspector is there to make sure that doesn't happen again. You are kept by a list to make sure that this does not happen.
Milk is probably one of the safest foods out there, whether it is organic or non organic – we are all the same! There is no antibiotics in milk.
P5: Yes, but what about BST?
P1: Oh, here we go – BST is a natural hormone found in cows, the first cow in the garden of Eden had BST. It is there. What is and the stories that we hear is that this is a story that started with the processors to get a BST into our animals, because the more milk that they have to process, the more money the milk companies have. In fact, they are trying to bring it back again. You give a cow an injection, she gets hungry, so she produces more milk. This does not affect humans – it is like high test gasoline.
P2: I know, when they first came out with it – we investigated it. It would have been crazy not to. And the most that they would claim is a 10% in production. Well, 10 percent on a cow that is giving 10 gallons a day is different from a cow that is giving 3 gallons per day. And so – it is same amount of medication either way, but the cost is spread across more and our cows are Jersey heard, and so we don't give our cows that much milk. You will get a lot more return elsewhere. Ten percent would not pay for the medicine. So it is – forget it – we will not lose money over this. Never attempted at it. But there are a lot of producers, particularly the popular ones, those who like high records

to sell breeding stock, is particularly popular with them. Because they are not making the income is not coming in from the selling of breeding stock.
P1: As far as the hormone, it did not – it is at no harm to the public. I still get the trade magazines and it is because I used to work for Kraft and the Kroger company – on the industry side – and there are some things that they are trying to do is a positive spin on bringing it back so we can start producing more milk to get more of a surplus going, and so the price of milk will go down, but they will make more money at the end.
P4: Why would they do this?
P1: Because it would cut into the stockholder's share. They had a 129 percent profit last year. This year they won't because of the price of milk went down so low and some of the producers went out of business. There is less than 148 dairy farmers in the state of [state name].
P5: It is really sad.
P1: It is really sad, and it is only going to get worse. We are all in the same boat, and sooner or later we will all have to close. However, they (stockholders) want that 100 or 129 profit increase and they will not have it this year, and so they screaming bloody murder, and they want our prices to go down and so they want to make a profit. Because of their stockholders are wanting it.
P2: It is like any other type of business. It is like corn – it is like free market. If it has an effect in three months away, they do not care. It has no effect. It has to be now.
P1: Besides, based on whether it is organic or not organic – our commercial milk – there is not a difference. In fact, we had some friends that had an organic milk tank and they were side by side with the regular milk tanks. Those organic milk tanks produced so much more milk until price went down, and they didn't produce as much.
P2: But the tank was always full.
P1: There was no way to test the difference – it is the same product. I mean, we have checked for everything. If we do cause a problem, you will find out about it.
P5: Do you have dairy processors at your farm?
P1: We do through the Corporate Dairy Farmers of America, so we go through them, which is the largest in the United States. Right now, our milk is going to [local city from town] to another plant and then goes into the stores. Next week, it might go somewhere else. We also send milk up to a cheese plant a few miles north. But it will never go into Mayfields Dairy because they do not like our truck.
[Group Laughs]
M: Why is that?
P1: Our milk truck.. it is one of the largest tankers in the state and it is a flatline truck. So our truck holds two separate sections of milk. They do not want to take the time to unload two separate sections of the truck and once it goes into a dairy plant, they have to wash it and that is part of it. They do not want to take the time to wash it and….
P2: It is basically same as causing the same amount of trouble to having two tankers of milk.
P1: Two tankers of milk, right. Our milk tanker went down there one day and they turned it away because they didn't want to wash it. So, our milk will never go to Mayfield.

P5: Could you sell milk straight from your farm?
P1: Yeah. We could.
P5: But you couldn't bring it to the Farmer's Market?
P2: Oh, there are all kinds of – things in the Sentinel –
P1: It is more of a liability than anything else.
P5: But, we fall under this new agricultural tourism law, which states that you are at an agricultural tourism site, and buy and you are here at your own risk.
P2: That won't stop anybody.
P1: Someone gets a stomachache – we are going to be the first person that they looked at since they ingested milk. Dairy products actually have bacteria in it, and we will be the first person that they contact and they headline will read "Person sick from drinking milk." It won't be "Person sick from drinking raw milk," but it will be "Person sick from drinking milk." That market crashes. It is such a liability and we would have to get at least a million dollar liability and it is sometimes more trouble than it worth.
P2: A dairy farm is not necessarily set up to bottle, and we don't have a bottling machine. They do make the thing that you can clamp on to a tank and fill up jars of whatever. We don't like them. The only outlet that we have on our tanker is to connect the tanker to the plant. In just physically bending over and fill gallon jugs is a pain. You can do it two or three times, but when you start thinking about doing 300 a day, that is a whole another ball of wax! They had that big story on raw milk in the Sentinel a few weeks ago…
P1: Where you can do it legally by buying part of the cow.
P2: This scares me to death.
P1: Yes, 99 percent of those farms are not going to be under enforced. We are, and so the 3-4 extra cows to sell for milk, and so they said that they were, but I want to see the papers. I know that our dairy inspector cannot go there since it is out of his jurisdiction, and it is not under anyone's jurisdiction, and so…
P3: So I can sell all of the raw milk that I want?
P1: You sure can! What the gimic is that you have to make sure that you sell partial interest.
P2: You don't sell the milk, but you sell the partial interest in the cow.
P1: So, you will be selling not product, but animals – so we don't know what kind of mess that we are in with this.
P2: The only people that can regulate this is the Department of Public Health. And most of them do not have the experience in handling this type of issue.
P1: As of last fall, there was an outbreak in [County name] of raw milk. They wouldn't tell us where they got the raw milk from – and so we are not going to find them.
P4: What about [particular dairy farm]
P1: It is pasteurized milk.
P2: They used to be in this business a long time and so they had their own balling plan and delivered. They are legitimate, but they don't homogenized it.
They have all Jerseys, so the cream rises up and so..
P3: That is what they sell over at Market Square? That is a good product. Good milk.
P1: Yes

P5: We have been trying to get them over to our Farmer's Market here, but it is an issue of transportation.
P1: They are a little ways south, so they have some traveling to do. Back to what we were talking about before, we could sell every drop that we produce, but it is scary. We know what our product is, and we know what our bacteria count is so we are good when it gets picked up. But, if someone is not used to it, they might get sick. And they have the liability factor that comes into play again.
P2: It is like the Mexico water thing. I mean, everyone has heard that if you go to Mexico, drink the bottled water. Mexicans drink it – and they do it all of the time – but then when they come out here – they experience the same thing. It is not that there are more bugs, but just different bugs. We are not used to it.
P1: But the raw milk out there scares me to death – especially is someone gets sick and it will not be reported as raw milk causes someone to get sick – it will be that milk gets someone sick. We will all suffer from it. That is what scares us the most.
M: When you are talking about these different messages and issues, like we have discussed about milk, when you are communicating a message – who would be the individuals getting the information out – would it be consumers, customers, or others? I guess my question for you all is who would be supportive in farmers to comply with food safety messages?
P1: In the south, we have to Southeastern Dairy Association, and they have groups in every state in the south. When a food safety situation arises, they hit the media. The contact them and hit up the producers to make sure that they have the information on the outbreak. We take media training courses, so we can talk with the media and so to make sure that we can handle it. As soon as a problem hits, they hit the media. They are based in Atlanta, so they can immediately get to the media there. So we are fortunate with these resources as dairy goes.
P3: You know, I have gone through several inspections and so just to be able to. Just like as Market Square has required that I have to have a license to sell unclassified eggs – I now have a label that says that – and so..
P1: Who inspects you?
P3:…… I don't know. Ronald.. or someone. We have to have the license and all.
P5: It is most likely the [state] Department of Agriculture
P3: They have inspected my scales and so notified that I have been following all of the rules and such that I can so I don't want anyone to question, so I call my dude down there in Nashville and if he could send me something – or apply to sell my products in Farmer's Market. I found that I have to have a whole faction and processing license.
P1: You are now following under Food and Drug.
P3: Right.
P5: You can't do it from a domestic kitchen?
P1. P3: No.
P5: Because Darlene has a domestic kitchen license and sells bread from her house.
P3: See, I don't have, in the place or the little apartment that we have a – it just wouldn't work and I have a 15 year-old dog that I don't want to get rid of and so it just wouldn't work for me.

P1: So there is a certified domestic kitchen license?
P5: Yes, it has been around for the last ten years. You can get it certified like Kelly has one for her fresh pasta. They come by and inspect. Darlene has one for her kitchen since she cooks bread, and so the lady who sells jelly and jam has one. You just don't have any animals in the house. They inspect your kitchen, and there is a course you can take that costs one hundred bucks.
P1: So it is this through the restaurants.
P5: This is through the Department of Agriculture. In the state of [state name] , the department of health does not regulate farmer's markets. They regulate restaurants.
P3: That was who I was talking to Ron about and I asked if I could aks his kitchen since I have my license. They have slow days and I could come in and make my dough, shape it, poof it, and freeze it and bake it Friday night.
P5: That would be fabulous. I know that exemptions churches are exempt from regulations and other places. There is other places. But that is how [local church] can sell at the Scotts Irish Festival here in [town name]. But there is one commercial kitchen - somewhere in that area – and that you can go up there and process your stuff up there, and then sell your stuff anywhere.
P3: Cool.
P5: There is a transportation issue – it is far away.
M: What are some of the things that would make it difficult to consider – we have talked about some of the things that have been advantages in having food safety recommendations, but look at a food safety message – what would make it difficult for you to comply with these messages?
P3: As a consumer or as a farmer?
M: Well, as both.
P3: Well, um – our shitake mushrooms. They are grown on logs, and we drill them and plast them and all of that stuff. But it is not in a sterile environment and it is out in the woods. But everything else they would not have a problem with.
P5: Why would the have a problem with this?
P3: The inspector told me – well, don't talk to me about mushrooms, I do not want to hear about it – and I was like, okay – I won't talk about the mushrooms. I don't have any. But I wanted to make sure that I had a separate refridgerator and to make sure that I had storage for my eggs and a thermometer that stated the temperate for the eggs to be kept at a certain level, and that read it and um.
P5: But what is the issue with the mushrooms? It appears that in any other state that you go to, they are not a problem and are viewed as a delicacy.
P3: Because… I don't know, he just didn't talk about it… he was just saying don't tell me about it and so I took that could be a problem. So I was like, well, don't tell the inspector when he comes out and he just wants to see just logs in the woods. This is something that I would not comply with safety regulations because I make too much money selling shitake mushrooms.
P1: And until there is a problem, they will not bother you. And if there is a problem, they will show up. The issue is that the department of agriculture, especially the inspectors, are so thin. And the other problem is that there are so many products coming into the

state that – for example the Mexican Cheese plant that is now in [state] – they make a entirely different product of cheese that no one in [state name] has ever seen before. It is made out in California, but not in this part of the country. And our inspectors here have no clue on what they were doing or what they were looking at. They did not know – one of them had to make the trip out to California to learn more about the product. We have so many new products and it is not like the old days where you have some of the same old stuff – we have so many new items being brought into the state. They do not have the manpower or the time to learn about it – so until something happens, then they might as well see this.
M: So with these new products, do you see something like new ingredients and such could be a factor in causing some of these new problems?
P3: I think that we are providing a new broader base in technology where we are not familiar with everything involved.
P1: The world has grown so fast and so quickly.
P3: There really is no strangers in any place now.
P7: I had worked for a regulatory agency in NY, and we were running into the same issues there. If something new that came along and that we didn't know about it, well we had to back off of it to learn more about it. We were not knowledgeable about it so until we learned more about it, we backed off from it.
P1: Right, you don't have the time.
P7: I can not imagine what people are doing now.
P2: They don't know if it is being made right or not, or they didn't know if they were getting sick from it because they did not know about it.
P5: They did that too when Yoplait yogurt came out here in [state name] . We had this whole different…
P1: That is a completely different ball game because it is a big company.
P5: Right. We have the biggest yogurt maker in the United States.
P1: And it was so close to Nashville that [name of legislature] had been there for a long time. When it comes to the big dairy or commercial plants, they are very particular. Everything has to be done correctly. Every once in a while there occasionally is a slip-up. You have to keep your fingers crossed and hope that nothing happens. It is so seldom. Some of these people are not going to care and so in some ways, there are some people that you don't want them to buy your product and there are some products where you find out where they are from, you wouldn't want to buy. And that is a good thing when you all want to put out a good product – you will go ahead and do it and do what needs to be done.
P3: I get a stack of papers from Nashville that is that thick, and so forms and compliance things that I have to do and so I mean, we are going to have to go to commercial freezers and do that…
P1: But you are going to go down that road.
P3: Absolutely.
P1: Whereas, some of these people will not. They will buy old refridgerators and hope that they work. That is the difference – they have to scare us to motivate us to do the right thing.

P2: It is a process, and I mean – you are willing to go through all of this trouble and go to equal lengths to make sure that your product is good, then so – you are not guaranteeing it or anything like that.
M: I think that we had a conversation about children, and marketing them to public schools – is that something that you also see?
P4: I think that it is something that you are seeing more of. About how nutritional programs are and there is more focus on that in the schools right now.
P3: Yes, I know that [name of son] told me that they definitely talk about what is healthy and what is not healthy.
P5: There is more and more schools that are going down this route. So they understand where food comes from. I am not sure if it is prevalent here, but I know that it is prevalent elsewhere.
P1: We are still considered to be rural, so I am sure that it is not prevalent here. We had a farm day, where all of the kindergarteners came by and they had people from every farm. I explained and talked about dairy products, and you try to emphasize that it is a good, wholesome product –it is a clean product and you are what you eat. It is good for you.
P3: We are doing that sometime later this year with our chickens, where we will show a day old peep to different color eggs, and here is what it will look like all grown up, and …
P1: And kids love that!
P3: They do! I took a box of peeps in one morning, and you would have thought that it was a puppy dog (laughs) – everyone wants to pet the peep.
P1: I know, I take in a jersey calf in. And they think it is a deer – it is Bambi! But yea, and the children catch on fast and they watch Sesame Street and all of these educational programs so they pick it up. People still – well, we do it by hand, and so..some people think that it does not come from a milk, and that we still do it by hand! There is no way.
P2: Even.. rural people – they think that we are doing that every morning and the ones that should know have some idea – they still ask you.. do you still milk by hand, do you? And then from that – we had gutters put in out in the barn a few years ago and the guy had no clue where he was. He wanted to come out during a certain time and I said, hey – we need you to wait an hour or two to – yeah, we are milking, and it is not good to get gutters put up when we are trying to milk the cows. It is like, so and like he was saying – so this is a milk house, and so where you make the milk? He thought that we were making milk how you would make Coca-Cola! [Group Laugh] and so we put the powder in, we put the liquid in, and so it comes out – that is what he thought we did!
P3: And you put a straw into the cow and start drinking it!
P2: Well, he thought that the cow had nothing to do with it. He thought that we were facturing milk. Growing it out of the ground somewhere.
P5: From a legal point of view, what do you think that we need to consider from a food safety point of view [directs question to Participant 6]
P6: Well, mainly I deal with the federal government and so the state has its own levels and so the same way. There is a difference between the legislature and the administrative and executive branches. All of these inspections and all of these messages are done by

the executive branch, where it falls under the governor and all of the different branches and the President – whether or whatever branch that they are doing – like the USDA or the FDA which is a separate branch and they do not have a secretary and they are almost as powerful as the USDA.
P5: Right.
P6: The legislature allows them to do that. They just passed a law that says well you can take care of it and they entire administrative body, especially the USDA, has this whole slew of roles that covers everything. When you are talking about egg producers, there are exempts for redemptions of 40,000 or less, so they are not under the same guidelines and regulations as others. And they allow the smaller producers to sell their products to be able to do that without getting that USDA inspection and.. from that point of view, that is a big issue. I have done more work with the farming community and so it's legal fund and regulations and there is all these overlapping rules from the FDA, USDA, and they hammer smaller farms especially and the ones that are producing over 40,000 will have a harder time and so you have to produce something that the Iowa plant (egg recall). The problem is that there is not a natural thing, and so they have their own things like washing them in chlorine and do all this stuff.
P3: Wouldn't the chlorine substitute some of this stuff ?
P6: Yes, there are a lot of other problems that are come out of a result from the chlorine receivers that they use. There is a natural coating on the eggs that protects them and so because eggs are - since man has consumed eggs at the beginning – has sitting out there. The chicken doesn't lay them in the refridgerator. Right?
P4: I thought that that they do [Laughs]
P6: Well, the state comes in and make sure that they check for whether or not there is salmonella in the eggs or that they come in and poke into the eggs at 37 degrees and see if anything is off. They go through this whole thing – but they ignore some of the most important stuff and I think honestly, I think that the way that Europe regulates their food is better and what they do in terms of food safety. Also, when it comes to something like food safety or organic, I think that the definitions have to be more clearer. The USDA says that you can do so much and you can do that- and have the grounds for five years and can do that for this time and have organic products. They came up with this transitional period of organic – natural – which allows people to get into that and still at some extent call themselves as organic. But umm.
P5: But that is a problem because it is a very expensive process to be certified as being organic and if they follow natural free range eggs, or something like that …
P6: Well, there are practices where - the problem is where the consumer is looking at organic, you are not thinking about the legal term of what organic means. I think that eventually causes problems where it is just fine. When I talk about grass-feed beef, they automatically think organic, and so that is probably true – but that doesn't mean that it is organic. It just means that they eating grass, but it does not mean that they are not anything else.
P2: In some places, that just means that they have access to grass.
P4: That is the point about the chickens, and so there are only thing that they are locked up in a barn, they could have the same thing. But if they are chained and you know, kept

inside of the barn, but the door is open – then well, patch of grass outside – well that would fit that definition.
P1: It is a game.
P6: So, that is the a significant problem and so there is that farm up in California, and whose name I can't think of…
P1: I know who you are talking about.
P6: They are in Fresno, and they are usually one of the largest milk farms. They never really had any problems and but – they have been hit by the government a bunch of times and so what they have had to do is to stop for a while because I think that they found that someone or people got sick and there is a problem.
P1: That is the thing – if someone gets sick.. that is where they go to first.
P6: That is true – and it wasn't the problem – it was actually something like else.
P1: And it kills like market like that [snaps fingers] even if there is a question about it.
P6: For them, they had shipments all over the country – and because they allowed the limit to do that. I think that it would hurt the larger market because there will be people that will still buy it and spend the extra amount of money to do it for one reason or another. There is a lot of factors involved, and frankly, raw milk has been around since - well, quite some time and so – over several thousand of years and the problems with milk have developed more recently, and so the customer questions it.
P1: Everyone is concerned about it – we are living in a germ-free society. How much santitizer do we go through in a year?
P6: Because the practices have changed and so they because they have been doing these large farms and they have been feeding the cows things they were not meant to eat and so giving more hormones that they would do naturally – causes them to eat more, but shortens their life.
P1: Which is part of our argument, if we have a calf that is two years old, it has paid itself over three times over. Why do we have to giver her a shot if she is only going to live for 5?
P6: Yeah, and we are seeing so many problems and the processing of the genetically modified foods and are really scary.
P5: It is really scary to me – why are we messing with the food?
P6: That is one of the causes of is the capalitized food and that what helps cause some of the food allergies that people are getting and mentioned before.
P1: We talked early about the BST and there is very little BST being used out there and we had to sign a form saying that we would never use it as part of the criteria we decided to use. United Farmer's Association organized this and went to every farm and if you didn't sign it, you would have to go somewhere else for your milk and it would be BST free. However, the producers were demanding it. What does that say about poultry?
P3: Poultry?
P1: Poultry. It is one of the biggest problems to get those chickens to grow faster. And that is where I have my troubles with.
P5: Right, and it is not always chicken that they sell up at Food City. Or verus Sanders Farm it is like a size of a chicken like this, compared to one like this [showing different sizes of chickens with hand gestures].

P1: They were showing on TV from the 1950s a chicken versus today's chicken, and the difference is like three pounds.
P3: The issue that I had with this farm that we visited is that they had genetically commercial turkey – not only does it cost less – around 5.50 – but they were sitting there – and I was like, why are you not selling the harlem breeds? Because we raise them better…
P4: This is when the market was so attune to the look at the bird, and what it looks like
P1: That is what the public demands, and that is why they do that.
P4: Well, that was not the case – these birds do not fly, and they can't bread naturally and they can't fly. We have some at our farm – we have to clip the wings several times and they go off flying around. We see them hanging out on our back porch and…. They don't go anyone.
M: We have talked a lot about different issues and you all have given me some great insights into this issue involving food safety. Is there anything that we have not covered in our discussion here today that you would like to share before we finish up?
P2: I just think that when we talk about notifying people about food safety – if there is a problem – I assume that it can be done with a computer. If there is a certain brand of lettuce – if there is a problem with it – you know what stores it has been distributed to.
P3: That is what they tried to use with the eggs.
P2: Right, and most stores have the little rewards cards and whenever you buy something, they scan the card. To get a discount – but it also records what you have bought. And when you apply for the card, you gave them your information and your address and phone number so if that they got a bad batch of lettuce – Food City, Food Lion – could give you a certain amount of time – and they could tell exactly who bought that batch of lettuce.
P5: I don't think that they do that. Because it requires them to have personnel at each location to do that and ..
P2: Well, whoever is interested in who is doing the recall, if they had wanted that information, they could go directly to those individuals and so they see these products. They wouldn't catch them all, but they would catch a high percentage of them.
P1: It is a means to and end, and they've got at least a week.
P2: Nine-hundred and ninety people who have never brought that product don't have to hear the dangers of this food product.
P1: They will never buy it again.
P2: But they have never bought it.
P1: They will never buy it now. It is perception.
P2: I think that you will be able to handle a lot of these recalls without having to cause public outrage and outcry. You can follow whatever is out there and or will be able to soon enough if things continue to change.
P5: Yes, I think that is true.
P2: If they really want to be serious in preventing health problems…
P5: I think that they are serious food recommendations.
P2: If they do not hear – you have got to be careful – then they will not hear you saying that and you must not doing their job or protecting them, unless they hear you doing it.

P1: Plus the fact that it sells – it is all about the ratings, and that is what sells.
P4: At some point, it comes down to a believability problem.
P3: CNN – I have serious issues with them.
P4: You don't listen the news, you don't get the same news . It is pretty much what is happening – you get the BIG headline and egg problem and all that goes with it – they kind of put it out there like NPR and it is much more like that.
P1: They expect people to have some sense about it .
P4: Some intelligence and common sense to say that okay – now, what do I need to do personally to go about and handle it. It is not about – you can't regulate the world – you can't regulate ethics, but you can't regulate every person to do the right thing. You can not try and cercomvent the process and or whatever. You have got to assume some sense of intelligence and and you know. Unfortunately, we fall into that low of the least common denominator, when I hear about this and I go – who stands to gain, who stands to lose.
P1, P3: Follow the money trail.
P4: Who is going to gain by this – as synical as I can get – this is what I look at. But it is the truth. What big corporation is going to capatilize this to run the little people out of business? It has been going on for fifty years and they have been running out on small farmers. Believability, credibility, common sense – and the other part is education. People become more educated – consumers get that and these regulations need to be better understood. A free range chicken is one that expends a certain amount of time outside. It does not have access to a door to get out to a rock somewhere. There needs to be a more understandable term to use – legal terms – these are legal terms – to and that is one is completed tainted (referring back to free range) – we don't even use it because our chickens live on the pasture and I call them pasture range instead of free range since it is not reality. A lot of things – there are so many things that fall into that. There are needs to be more clearer regulations on that and put out there – tell the truth, that would be nice. Instead of corporations coming in and circumventing what is apparently happening like what is happening with organic and where it will be this water down thing where it will be nothing, and that is what is happening. With so many of these, we create these with the best of intentions, but then someone with a lot of money and brains comes in and say – we can railroad this and put money in our pockets – and that what goes on. It drives me nuts.
M: You all have really helped me out with my research. Thank you very much for taking the time to talk to me about food safety and some of the issues that you see in the food industry. Thank you very much.
P1,2, 3, 4, 5, 6: You are welcome. Good luck with your research.

Appendix D: Research Instrument

The questionnaire was preceded by one of following four scenarios:

Scenario 1: Professional--Confirmed

You read a news bulletin on the Centers for Disease Control and Prevention (CDC) website about a recall for products containing contaminated American cheese. The CDC provided a list of products containing the contaminated American cheese, which includes brands sold at your local grocery store. The CDC bulletin recommends that you not purchase the cheese products on the list until further notice.

Scenario 2: User-generated--Confirmed

You read a blog post that a friend linked on your Facebook page about a recall for products containing contaminated American cheese. The list of products containing the contaminated American cheese includes brands sold at your local grocery store. Under the link, your friend comments that you should not purchase any products containing American cheese on the list until further notice. Your friend's post has been shared and liked by several of your family members and friends on Facebook.

Scenario 3: User-generated--Unconfirmed

You read a blog post that a friend linked on your Facebook page about people getting sick after eating American cheese. The blog author said it is likely that the contamination caused by an ingredient in cheese products sold at most local grocery stores in your area. Under the link, your friend comments that you should not purchase any products containing American cheese until further notice, and that an investigation is underway. Your friend's post has been shared and liked by several of your family members and friends on Facebook.

Scenario 4: Professional--Unconfirmed

You read a developing news bulletin on the Centers for Disease Control and Prevention (CDC) website about people getting sick after eating American cheese. The CDC said it is likely that the contamination is caused by an ingredient in cheese products sold at most local grocery stores in your area. The CDC bulletin recommends that you not purchase any products containing American cheese until further notice, and that an investigation is underway.

Appendix E: Main Experiment Research Instrument

Questionnaire

SECTION 1

Each question in this section refers to NOT PURCHASING AMERICAN CHEESE PRODUCTS UNTIL FURTHER NOTICE. Please select the appropriate number for each question.

1. I believe that I am doing something positive for my health if I avoid buying American cheese products,.

Unlikely	1	2	3	4	5	6	7	Likely

2. My family thinks I should avoid buying American cheese products.

Strongly Agree	1	2	3	4	5	6	7	Strongly Disagree

3. Overall, I think that not buying American cheese products is:

Harmful	1	2	3	4	5	6	7	Beneficial

4. My family's approval of my food preparation habits is important to me.

Not at all	1	2	3	4	5	6	7	Very much

5. If I have to change my food preparation habits, I am

More Likely	1	2	3	4	5	6	7	Less Likely

to follow recommendations to not buy American cheese products.

6. Doing something positive for my health is:

Extremely Undesirable	1	2	3	4	5	6	7	Extremely Desirable

7. Most people who are important to me think:

I should	1	2	3	4	5	6	7	I should not

buy American cheese products.

8. It is expected of me that I avoid buying American cheese products.

Strongly Agree	1	2	3	4	5	6	7	Strongly Disagree

9. For me to stop buying American cheese products is:

Easy	1	2	3	4	5	6	7	Difficult

10. I expect to stop buying American cheese products.

Strongly Agree	1	2	3	4	5	6	7	Strongly Disagree

11. Not buying American cheese products will require me to change my food preparation habits.

Unlikely	1	2	3	4	5	6	7	Likely

12. My friends think I should avoid buying American cheese products.

Strongly Agree	1	2	3	4	5	6	7	Strongly Disagree

13. Overall, I think that not buying American cheese products is:

Pleasant	1	2	3	4	5	6	7	Unpleasant

14. Changing my food preparation habits is:

Extremely Undesirable	1	2	3	4	5	6	7	Extremely Desirable

15. Overall, I think that not buying American cheese products is:

Convenient	1	2	3	4	5	6	7	Inconvenient

16. Doing what my friends think I should do is important to me.

Not at all	1	2	3	4	5	6	7	Very much

17. If not buying American cheese products makes me more anxious about food safety, I am

More Likely	1	2	3	4	5	6	7	Less Likely

to follow the recommendations.

18. Overall, I think that not buying American cheese products is:

The wrong thing to do	1	2	3	4	5	6	7	The right thing to do

19. I feel under social pressure to avoid buying American cheese products.

Strongly Agree	1	2	3	4	5	6	7	Strongly Disagree

20. Overall, I think that not buying American cheese products is:

Easy	1	2	3	4	5	6	7	Difficult

21. I am confident that I could stop buying American cheese products if I wanted to.

Strongly Agree	1	2	3	4	5	6	7	Strongly Disagree

22. I want to stop buying American cheese products.

Strongly Agree	1	2	3	4	5	6	7	Strongly Disagree

23. Not buying American cheese products makes me more anxious about food safety.

Unlikely	1	2	3	4	5	6	7	Likely

24. Overall, I think that not buying American cheese products is:

Good	1	2	3	4	5	6	7	Bad

25. The decision to stop buying American cheese products is beyond my control.

Strongly Agree	1	2	3	4	5	6	7	Strongly Disagree

26. Feeling more anxious about food safety is:

Extremely Undesirable	1	2	3	4	5	6	7	Extremely Desirable

27. If not buying American cheese products makes me enjoy my meals more, I am

More Likely	1	2	3	4	5	6	7	Less Likely

to follow the recommendations.

28. Overall, I think that not buying American cheese products is:

Worthless	1	2	3	4	5	6	7	Useful

29. I intend to stop buying American cheese.

Strongly Agree	1	2	3	4	5	6	7	Strongly Disagree

30. If I avoid buying American cheese products, I will enjoy my meals more.

Unlikely	1	2	3	4	5	6	7	Likely

31. Whether or not I stop buying American cheese products is beyond my control.

Strongly Agree	1	2	3	4	5	6	7	Strongly Disagree

32. Enjoying my meals more is:

Extremely Undesirable	1	2	3	4	5	6	7	Extremely Desirable

SECTION 2

Background Information: Please fill in or check the appropriate box.

A I am (please check one) MALE ☐ or FEMALE ☐

B Year born: 19 _____

C Last education completed:

- ☐ High School Diploma
- ☐ Undergraduate Degree
- ☐ Graduate Degree (MBA, MA, MS)
- ☐ Graduate Degree (PhD, MD, etc)
- ☐ Other: _____-
  _____

D Occupation or Major in School:

_____

E Do you actively participate on social media and networking sites? (ex. Facebook, Twitter, etc.). **If no, go to Question I.**

Yes ☐ No ☐

F Which social media sites do you use? (Please check all that apply.)

- ☐ Twitter
- ☐ Facebook
- ☐ You Tube
- ☐ Flickr
- ☐ MySpace
- ☐ Del.i.cious
- ☐ Geolocation based applications (ex. Foursquare)
- ☐ Virtual Online Communities (ex. Second Life)
- ☐ Other:
  _____

G On a typical day, about how much time do you spend actively on social media sites (not counting the time you have it running in the background while you do other computer tasks) (Please check only one response):

- ☐ Less than 15 minutes
- ☐ Between 15 and 30 minutes
- ☐ Between 31 and 60 minutes
- ☐ Between 1 and 2 hours
- ☐ More than 2 hours. (Please specify:
  _____.)

H For which of the following purposes do you use social media? (Please check all that apply.)

☐	Communicating with friends and family
☐	Professional networking opportunities
☐	Sharing information with friends, followers, online community
☐	Interacting with online groups on discussion boards
☐	Post or view photos
☐	Post or view videos
☐	Post or view comments on blogs and social networking sites
☐	Check in at various locations
☐	Search for information about current events (locally, nationally, and internationally)
☐	Post or view links to articles or events
☐	Write private messages to followers
☐	Other (please specify): _____

I Which of the following technologies do you currently own? (Please check all that apply.)

☐	Computer (Desktop)
☐	Computer (Laptop)
☐	Cell phone with Internet Connection (ex. Blackberry, iPhone, Palm, Android)
☐	iPad

☐	None of the above

Appendix F: IRB Form B Application for Dissertation

All applicants are encouraged to read the Form B guidelines. If you have any questions as you develop your Form B, contact your Departmental Review Committee (DRC) or Research Compliance Services at the Office of Research.

FORM B

IRB # _____

Date Received in OR _____

THE UNIVERSITY OF TENNESSEE
Application for Review of Research Involving Human Subjects

I. IDENTIFICATION OF PROJECT

Principal Investigator:

Karen Freberg
476 Communications Building
School of Advertising and Public Relations
College of Communication & Information
The University of Tennessee, Knoxville, TN
Email: kfreberg@utk.edu
Phone: (352) 219-7915

Faculty Advisor:
Dr. Michael J. Palenchar
476 Communications Building
School of Advertising and Public Relations
College of Communication & Information
The University of Tennessee Knoxville, TN
Email: mpalench@utk.edu
Phone: 865-974-9082

Department: School of Advertising and Public Relations

2. Project Classification: Dissertation

3. Title of Project: The effects of message source and credibility on the intention to comply with food safety messages in a crisis

4. Starting Date: Upon IRB Approval

5. Estimated Completion Date: (Include all aspects of research and final write-up.)**:** April 2011

II. PROJECT OBJECTIVES

The classic crisis communication literature has focused on best practices in traditional media (ex. news releases, prepared message statements, press conferences, etc). With the emergence of social media in the 21st century, a set of best practices in crisis communication should expand to reflect the ways people currently obtain and share information. Although many principles remain the same for communicating through traditional or social media, social media present new challenges. The immediacy and variety of social media coupled with the new phenomenon of user-generated content reduces the control over the message previously enjoyed by an organization during a crisis.

This dissertation will attempt to contribute to our knowledge of best practices in crisis communication by exploring the relationships between several key constructs, including user-generated versus professional content, confirmed versus unconfirmed information, and receiver intention to comply with a safety message. A theoretical foundation will be provided by the Theory of Planned Behavior.

III. DESCRIPTION AND SOURCE OF RESEARCH PARTICIPANTS

Two focus groups (8-10 people each) representing the general public will be recruited for this phase of the research study for a total of 16-20. Food incentives in the form of commercially packaged snacks (muffins and cookies) and beverages (bottled water, juice, sodas) will be made available to participants in their original containers.

For the experiment, 400 participants will be recruited from a consumer panel from e-Rewards. The researcher wishes to have a representative sample of the general population (ages 18- 65) with equal numbers of men and women. The market research firm e-Rewards is located in Houston. All participants in e-Rewards consumer panels acknowledge that they will be approached for multiple studies by the company and agree to be the company's consumer panels. The company uses a "by-invitation only" approach for recruiting consumers. All panel establishment methodologies employed by the company are fully compliant with CASRO (Code of Standards and Ethics for Survey Research) guidelines. Those guidelines include "respondents should be a) willing participants in research, b) appropriately informed about the research's intentions and how their personal information and research responses will be used and protected, c) willing to participate again in research" and d) informed "confidentiality" of the research. Privacy information provided by e-Rewards for prospective panel participants can be seen in Appendix 1 of this document.

IV. METHODS AND PROCEDURES

This dissertation proposal will involve two separate research steps to address the main research objectives: (1) focus groups will be conducted for constructing a questionnaire consistent with the Theory of Planned Behavior (TPB; Fishbein & Ajzen, 1980; Ajzen, 2002), and (2) an experiment will be conducted using a questionnaire featuring one of four scenarios (user-generated content—confirmed information; user-generated content—unconfirmed information; professional content—confirmed information; professional content—unconfirmed information).

Step 1: Focus Group. As specified by Fishbein and Ajzen (1980), it is necessary to conduct a focus group to identify the important norms, traditions, and personal reference groups that guide a particular intention, which in this case would be the intent to comply with a crisis message related to food safety. Two focus groups (8-10 people each) representing the general public will be recruited for this phase of the research study

for a total of 16-20. The researcher will create fliers about the research study and ask for participants for the focus group (Sample Flyer in Appendix 2). The researcher will provide contact information, purpose of the research study, location on where the focus group will take place, and describe the food incentives for participation in the focus group on the fliers. Food incentives would be appropriate to use in rewarding participants for their time, and can create a more positive and interactive experience for everyone in the group. To ensure food safety, all items (muffins, cookies, and drinks) will be served in single-serving, individually packaged form with nutrition information from the manufacturer. Focus group sessions will be scheduled to take place in the Scripps Lab in the focus group room.

The researcher will review the informed consent form with participants. Demographic and background information about social media, food safety, and other defining characteristics of the participants (ex. where they get news / information, education level, occupation, perceived control over food safety) will be collected. Steps outlined by Ajzen (1985) to determine the overall attitudes, subjective norms, perceived behavioral control, and intention in relations to food safety will be followed. The discussion guide and demographic questionnaire for focus group participants appear in Appendix 3. At the conclusion of the focus group, the researcher will ask for any additional comments regarding food safety and social media. Each focus group session should last between one hour and one-and-one-half hour.

Step 2: Questionnaire. The participants for the main experiment will be recruited from a consumer panel from e-Rewards. The researcher wishes to have a representative sample of the general population (ages 18- 65) with equal numbers of men and women. Ideally, 400 participants (100 per scenario) will participate. Random assignment for the experimental scenarios is key in order to reduce potential validity issues and factors that might influence how people are interpreting the scenarios in the study. Participants in this research study will be rewarded with e-Rewards dollars ($5) for their participation in this study.

Following the procedures outlines by Fishbein and Ajzen (1980), four separate questionnaires will be constructed, each with a single scenario as specified above. The

questionnaire will include demographic questions, questions about familiarity with and use of social media, questions rating the credibility of the online source, ratings of the message in the scenario as rumor or fact, questions about relevant norms, traditions, and reference groups, and a final intention to comply question.

The research company hired by the researcher will recruit the participants for the experiment portion of the dissertation. Since the company uses a "by-invitation-only" approach for recruitment, the company will send an invitation email to its consumer panels. Consumer panels will be informed the study's intentions and how their personal information and the research responses will be used and protected. The panels will also be informed that identity of individual respondents as well as respondent-identifiable information will be not disclosed to third parties including clients and members of the research company.

Confidentiality of participants (subjects): Confidentiality of participants will be protected. In the current study, there will be no names collected; therefore, anonymity will be preserved.

Informed Consent:

Subjects will participate in this dissertation studies voluntarily.

Focus group participants will review and sign a paper informed consent form attached to this application [APPENDIX 4].

Before participating in the web-based survey, participants will read the separate informed consent introduction printed below. The purpose of study and topic will be introduced before actual stimuli and questions are provided. Approximate time for completing the survey, which is, 10-15 minutes, will be communicated to participants as well. Participants will be informed of their rights not to respond to any question or to withdraw. Finally, participants will be informed that clicking the consent form provided constitutes their consent to participate. The messages participants will see before their participation will be as follows:

> "As consumers, you are invited to participate in this study concerning people's intentions to comply with a food safety message. After reading a short description of a food safety message, you will be asked questions regarding your perceptions about the message and your hypothetical intent to comply. The survey should take about

10-15 minutes to complete, and your responses will remain completely anonymous and confidential. There are no anticipated risks associated with this study. If you should have any questions about the survey, or the research project, you can contact the principal researchers Karen Freberg, at 352-219-7915 or kfreberg@utk.edu or Dr. Michael Palenchar at 865-974-9082 or mpalench@utk.edu.

If you have questions about your rights as a participant, contact Research Compliance Services at (865) 974-3466."

"Your participation in this study is voluntary; you may decline to participate without penalty. If you withdraw from the study before data collection is completed, your data will be destroyed. Clicking the button "proceed" constitutes your consent to participate in this study."

The online survey will use a personal domain to host the research instrument (www.karenfrebrg.com) and will not record any identifying information in the same file as the study data, to protect confidentiality.

V. SPECIFIC RISKS AND PROTECTION MEASURES

Risks for the participants are minimal. In both the focus group phase and the experiment phase, the researcher will ensure participants' confidentiality and use their answers only for the purpose of this research study. The participants will be informed that they can leave the focus group or discontinue the survey at any point. Only the principal investigator will have access to the information provided. In addition, no list of participants or other form of identification will be kept except for non-identifiable demographic information.

At the conclusion of the focus group, the researcher will analyze the transcripts and what the participants said in these discussions. The transcripts, audio recordings, and researcher notes will be destroyed one year after the completion of this project to protect the participants and their identity. The transcripts will be kept in a located file cabinet in

410A Student Services Building for one year. The audiotapes from the focus group will be stored in a separate, locked location (98 Communications) at the University of Tennessee for one year.

Data from the online questionnaire will be downloaded permanently from the server to secure media (flash drive or DVD) that will be stored in a locked location in 98 Communications at the University of Tennessee for one year, after which time the media will be erased.

VI. BENEFITS

This research study has the potential to inform both the academic understanding of crisis communication and the application of this new understanding by public relations professionals. Crisis communicators do not know whether user-generated content will produce effects on receivers that are the same or different compared to the effects of messages conveyed through traditional mass media. In addition, researchers and crisis communication professionals need to understand the impact and influence that unconfirmed or confirmed information has on a person's intention to comply with a specific message, particularly regarding food safety.

VII. METHODS FOR OBTAINING "INFORMED CONSENT" FROM PARTICIPANTS

The researcher will print two copies of the informed consent for the focus group for each of the participants to sign. One copy will be given to them to keep for their records, and the other will be kept by the researcher.

Consent for the online survey will be obtained as specified in IV above.

VIII. QUALIFICATIONS OF THE INVESTIGATOR TO CONDUCT RESEARCH

The principal investigator for this research study is Karen Freberg, a fourth year doctoral candidate studying public relations at the University of Tennessee. During her time at Tennessee, Karen has taken multiple research methods courses both in the College of Communication and Information (Advertising and PR Research, Qualitative Research Methods) and in the Marketing Department at the University of Tennessee (Quantitative Research Methods). Karen received her Bachelor's degree in Public Relations at the University of Florida in 2005, and her Master's degree in Strategic Public Relations from University of Southern California. Her research interests in Public Relations include reputation management, crisis communication, and social media.

IX. FACILITIES AND EQUIPMENT TO BE USED IN THE RESEARCH

Focus groups will be held in the focus group room in the Scripps Lab in the College of Communication and Information at the University of Tennessee, Knoxville. The materials needed for the focus group include a digital tape recorder, a notebook for researcher to take notes, and writing instruments. Writing instruments will be provided to the participants for completing the initial demographic questionnaire.

X. RESPONSIBILITY OF THE PRINCIPAL/CO-PRINCIPAL INVESTIGATOR(S)

The following information must be entered verbatim into this section:

By compliance with the policies established by the Institutional Review Board of The University of Tennessee the principal investigator(s) subscribe to the principles stated in "The Belmont Report" and standards of professional ethics in all research, development, and related activities involving human subjects under the auspices of The University of Tennessee. The principal investigator(s) further agree that:

1. **Approval will be obtained from the Institutional Review Board prior to instituting any change in this research project.**

2. Development of any unexpected risks will be immediately reported to Research Compliance Services.

3. An annual review and progress report (Form R) will be completed and submitted when requested by the Institutional Review Board.

4. Signed informed consent documents will be kept for the duration of the project and for at least three years thereafter at a location approved by the Institutional Review Board.

XI. SIGNATURES

ALL SIGNATURES MUST BE ORIGINAL. The Principal Investigator should keep the original copy of the Form B and submit a copy with original signatures for review. Type the name of each individual above the appropriate signature line. Add signature lines for all Co-Principal Investigators, collaborating and student investigators, faculty advisor(s), department head of the Principal Investigator, and the Chair of the Departmental Review Committee. The following information should be typed verbatim, with added categories where needed:

Principal Investigator: _____

Signature: _____ Date: _____

Student Advisor (if any): _____

Signature: _____ Date: _____

XII. DEPARTMENT REVIEW AND APPROVAL

The application described above has been reviewed by the IRB departmental review committee and has been approved. The DRC further recommends that this application be reviewed as:

[ ] Expedited Review -- Category(s): _____

OR

[ ] Full IRB Review

Chair, DRC: _____

Signature: _____ Date: _____

Department Head: _____

Signature: _____ Date: _____

Protocol sent to Research Compliance Services for final approval on (Date) : _____

Approved:
Research Compliance Services
Office of Research
1534 White Avenue

Signature: _____ Date: _____

For additional information on Form B, contact the Office of Research Compliance Officer or by phone at (865) 974-3466.

Appendix G: Privacy Guidelines for e-Rewards Consumer Panel Participants

Copied from http://www.valuedopinions.com/index.php?id=8

WEBSITE PRIVACY STATEMENT

1. Company Background

e-Rewards, Inc. (a US Company), e-Rewards Europe Limited (a UK company), Research Now, Inc. (A US Company), Research Now Limited (a UK company), The Mobile Panel Ltd., The Mobile Channel Ltd., Research Now Pty Ltd. (an Australian Company), Research Now Inc. (a Canadian Company), Research Now Consulting Co. Ltd (a Chinese company), Research Now Technology EPE (a Greek Company), Research Now GmbH (a German Company), Research Now PTE LTD (a Singaporian Company), Research Now Pty Limited (a New Zealand company), Research Now Spain S.L. (a Spanish company) and Research Now SARL (a French Company) (together "Research Now") operate the Valued Opinions websites. This Privacy Policy governs the website located at www.valuedopinions.com.

Research Now is a member of various trade associations in the U.S. and Europe, including the Council of American Survey Research Organizations (CASRO) Code of Standards and Ethics for Survey Research, the European Society of Opinion and Marketing Research (ESOMAR) Codes and Guidelines for Survey Research, Marketing Research Association, American Marketing Association and the UK-based Market Research Society. Research Now strives to conform to the European Commission Directive on Data Protection, the Federal Trade Commission (FTC) Fair Information Practice Principles, the CAN-SPAM Act, and other privacy regulations and guidelines in the U.S. and abroad, as applicable.

2. Information Collected on this Website

Our research survey websites, including this site (www.valuedopinions.com), provide survey respondents with the opportunity to express opinions and attitudes about the most current issues. We conduct research that involves people from around the world, and we aggregate and anonymize such research (stripped of any personally identifiable information) before sending research results to our clients. In addition, certain survey findings might be published on our websites (in anonymous form) so that our respondents can be among the first to hear about the concerns and interests of people around the world.

In order to compile our research studies, we may ask you to voluntarily submit personally identifiable information, which may include:

- your name and address, email address, telephone number and general contact details;
- images on film, photographs and telephone voice recordings;
- demographic information, such as your zip code, gender, country of origin or income level;
- your racial or ethnic origin;
- your political opinion(s) and/or political party with which you are affiliated;
- your religious or spiritual beliefs;
- whether or not you are a member of a labor union;
- your physical or mental health or condition;
- your sexual life;
- your hobbies and interests; and
- whether you have any type of criminal record, or have been arrested for any offense.

In addition, you will need to submit your email address and password to login to the www.valuedopinions.com site.

By registering on the www.valuedopinions.com site, you agree to receive emails from us, such as other survey invitations and reminders, communications about sweepstakes in which you have been selected as a winner, responses to inquiries that you submitted on our site, and inquiries regarding your status as a Research Now member. If we send you a survey invitation or reminder by email, we will always provide the opportunity to opt-out of receiving future emails by following the "unsubscribe" instructions at the bottom of the email.

We may also ask third parties to send survey invitation emails on our behalf. In such cases, the people who receive those emails can choose to click on a link to be directed to Research Now's registration page on its site. The individual can then decide whether or not to register with Research Now.

3. How We Use the Information You Provide

If you have registered on the www.valuedopinions.com site, we will use the information you provide us primarily to contact you about surveys in which we would like you to participate, or to provide you with the results of the surveys. We may also use your personal information to:

- notify you about new features on our websites, or other products or services in which we think you may be interested;
- update our internal database of individuals willing to take part in research and surveys;
- determine which individuals registered with Research Now should be invited to participate in our surveys;

- provide you with information about incentives for responding to our survey requests;
- process your answers to surveys and summarize the results;
- conduct research surveys on behalf of third parties;
- transfer your survey responses to service suppliers who conduct process survey results on our behalf and under our direction;
- provide a unique, non-personally identifiable ID (not associated with you) to our research partners so they may conduct surveys on our behalf and report the findings to us;
- to provide you with information relating to rewards provided by any third parties, including but not limited to a reward provided in response to your participation in surveys;
- contact you by email to invite you to take part in surveys and offline focus groups; and/or
- invite you to enter a sweepstakes or participate in other incentive programs as a reward for participating in our surveys;
- comply with applicable laws and regulations; and
- respond to your inquiries about Research Now or its website.

We may also share your personal information with Research Now subsidiaries or non-affiliated vendors, who may need to access and use your personal information to process your rewards, ensure that your mailing address is accurate, and eliminate duplicate information from our records. For example, Research Now provides our third-party fulfillment warehouse with names and mailing addresses so the warehouse can process and send paper gift certificates.

Email Communications from Research Now

Research Now does not send unsolicited commercial emails. Nevertheless, Research Now voluntarily complies with the key privacy and disclosure provisions of the U.S. CAN-SPAM Act, including:

- providing truthful sender information;
- including a physical address for Research Now Inc. or the Research Now Inc. affiliate sending the email message; and
- providing a clear and simple opt-out method which is honored within ten (10) business days after the opt-out request is made.

In addition, all survey invitations sent via email are consistent with the CASRO Code of Standards and Ethics for Survey Research.

Survey Results

Research Now conducts surveys on behalf of its clients. Research Now's clients include U.S.-based businesses, as well as research organizations based in other jurisdictions who wish to survey people in the U.S. or elsewhere.

Clients list the general demographic information (such as age range, ethnic background, and occupation) of individuals from whom they wish to ask survey questions. Based on the client's needs, Research Now contacts individuals who have registered on the site and invites them to participate in an online survey.

Answers to the surveys are associated with unique, but non-personally identifiable ID numbers in Research Now's databases. Research Now may aggregate and interpret the answers in reports.

4. Sharing Your Personal Information

In order to provide you with the services on our sites, we may need to share your personal information with third parties, our agents, who perform services on our behalf, such as merchandise fulfillment, web hosting, and the like. Research Now may also share your personal data with affiliated companies in the Research Now group of companies (see "Company Background") or with unaffiliated third parties when permitted by law, as described above under "How We Use the Information You Provide". If Research Now acquires or spins off all or part of its business, or in the event of a bankruptcy proceeding, it might convey its business assets, including survey participant data. If a change of ownership occurs, a notice will be posted here, so please check this policy regularly.

5. Accessing the Personal Information You've Provided

If you provided personal information during registration or in response to a survey, you may change or modify such information by:

- Visiting the www.valuedopinions.com website, logging in, and updating your information; or
- Sending an email to inquiries@valuedopinions.com

If you choose to stop participating in our research surveys, you may unsubscribe from our survey invitations at any time by sending an email to mailun@valuedopinions.com. Please be aware that even if you unsubscribe, we may maintain certain information in your registration profile for up to five (5) years for ordinary business purposes, such as reporting the aggregate number of registrations and cancellations to our non-affiliated partners.

6. Safety and Security

We use a variety of physical, administrative and technical measures to secure the data stored on our servers, including limiting physical access to our central data servers. Our policy is to allow only authorized personnel to access the physical areas where such servers are located. In addition, we use firewalls to protect the servers from outside intrusion. Please be aware, however, that no security measures are guaranteed to protect against unauthorized access.

Please note that information submitted on the www.valuedopinions.com site or otherwise sent to Research Now over the Internet may be transferred outside of the United States and outside of the European Economic Area (EEA), where data protection laws are not as strong as within these areas. Additionally, the United States does not place restrictions on the transfer of personal data outside of the United States. If you have any concerns in relation to such transfers, you should not use the Internet as a means of communication with Research Now.

7. Children's Privacy

Research Now believes that it's especially important to protect children's privacy online and encourages parents and guardians to spend time online with their children to participate and monitor their Internet activity. Although Research Now is based in the United Kingdom, Research Now complies with the U.S. Children's Online Privacy Protection Act of 1998 ("COPPA"). We do not seek to collect any personal information from children under 16 years of age. During the profile registration process, we collect birth date, and if an individual enters a birth date that indicates the individual is under 16, we block the registration and any personal information submitted by the individual is not saved in our database. From time to time, we may ask our adult survey respondents whether they have children residing with them who might have certain interests, such as favorite movies or music. In such event, we do not ask the child or parent to submit personally identifiable information about the child.

If you would like to contact us about your information, any information about your child, or to find out how you can have your child's information removed from our database, please see the "5. Accessing the Personal Information You've Provided" section of this policy.

8. Cookies

We may use technology to track the patterns of behavior of visitors to the Site. This can include using "cookies," small text files stored on your computer. A cookie is essentially a numerical user ID assigned to your computer that allows a website to store certain information about your online browsing. When we use cookies, we do so to help us recognize you as a prior user of this site. Among other things, cookies can save your passwords and webpage preferences (including those preferences for the Website). This improves the delivery of web pages the next time you visit the site and allows Research

Now to provide you with information specifically tailored to your interests. We use two Cookies in relation to your personal data:

- the Basic Cookie we send to your computer stores only basic information you submit to the Site, which may include your name, address, phone number and email address. It is possible for Research Now to retrieve the information stored in the Basic Cookie;
- the Advanced Cookie incorporates a key which can identify tags contained in certain online advertisements relating to our clients and their products and services. If you click on an advertisement including the tag, the key will send Research Now an update confirming that you have linked to this advertisement. We use this information for the purposes specified above. We ensure that tags are not included in any advertisements which could provide information which amounts to sensitive personal data, for example information about your religious beliefs, your sexual life or your health.

  Only information collected by Cookies as specified in this section of our privacy policy is automatically collected from Valued Opinions Panel Members. In the event that we do collect any personal data about visitors to the Site it is available only to Research Now. The Advanced Cookie is only sent to the computers of member of our on-line research panels. It is not sent if panel members do not provide consent by means of an opt out.

The Basic Cookies save your passwords and site preferences. This enables you to navigate the site and submit information to Research Now more quickly and efficiently.

The information collected by Advanced Cookies is used for the purposes specified above, including identifying you as a suitable candidate for particular studies so you can provide your opinions and receive the related rewards. If you do not wish to be identified as such a candidate you can modify your browser settings by clicking on the help section of your internet browser and following the instructions. For example, if you use Windows as your operating system, this should be done through the Settings Panel and the Internet Options tab. You can also delete Cookies which have already been sent to you.

If you do not want to receive the Cookies, please send an email to inquiries@valuedopinions.com or write to the Panel Manager at the address below confirming that you do not want to receive Cookies from Valued Opinions.

9. Other Websites

The Site contains links to other websites. Research Now is not responsible for the privacy policies and practices or the content of any websites which are linked to the Site.

10. Changes to this Policy

Please check this page periodically for changes as Research Now reserves the right, at its discretion, to change, modify, add, or remove portions of the Privacy Policy and the Site at any time. Your continued use of the Site following the posting of any changes to this Policy will mean that you accept such changes.

If we are going to use personally identifiable information in a manner materially different from that stated at the time of collection, we will notify the affected individuals by posting a notice on the www.valuedopionions.com site or via email.

11. How to Contact us

If you have any queries relating to this Statement, please feel free to contact us by letter at the following address:

The Panel Manager
Research Now Inc
220 Montgomery Street
Suite 1058
San Francisco, CA 94014
USA

12. Terms and Conditions of Use

Your use of Research Now's web sites, including this site, is subject to the terms of a legal agreement between you and Research Now, which is incorporated by reference herein. Please see our Terms and Conditions.

RESEARCH NOW TERMS OF WEBSITE USE

Welcome to the Research Now Website (the "**Site**") owned and operated by Research Now Ltd, company number 03975073, whose registered office is located at 8th Floor, Elizabeth House, 39 York Road, London, SE1 7NQ, UK ("**Research Now**", "**we**", "**our**" and "**us**"). In this Agreement, the terms "you" and "the member" mean the individual completing the registration process to become a member of the Valued Opinions Panel. Your use of this Site, membership in our Valued Opinions Panel and participation in our surveys and research available through the Site are subject to the following terms of use (the "**Agreement**") and the Research Now Privacy Policy (the "**Privacy Policy**") incorporated in this Agreement. Our Agreement may be updated or revised from time to time without notice to you. If you do not agree with any of the terms of this Agreement, you may not access or use this Site, join our Valued Opinions Panel or participate in any of the surveys or research available through this Site. By using this Site, you are agreeing to be legally bound by and to comply with each of the terms of this Agreement in effect when you access the Site.

1 Use of this website and the contract between us

1.1 This Agreement comprises a legal contract between you and Research Now governing your access and use of the Site, membership on our Valued Opinions Panel and participation in the surveys and research available through the Site. You agree to only use this Site in accordance with this Agreement and all applicable laws.

1.2 By becoming a member of our Valued Opinions Panel, participating in any surveys and research made available to you through this Site and providing the information we request, you agree that the terms of this Agreement shall be legally binding upon you with respect to your membership on our Valued Opinions Panel and your participation in our surveys and research.

1.3 You will be a member of our Valued Opinions Panel following our acceptance of your complete registration questionnaire you submit to us.

1.4 This Agreement is a contract for the provision of services and nothing in this Agreement shall create or be deemed to create a legal partnership or the relationship of agent and principal or the relationship of employer and employee between you and Research Now.

2 Obligations of Research Now

2.1 Research Now shall:

2.1.1 consider your eligibility to take part in each of its surveys;

2.1.2 enter your name into its regular prize drawing if you answer any qualifying questions;

2.1.3 inform you of the amount that will be credited to your Valued Opinions Account (your **"Account**") if you correctly and completely answer the questions comprising a Valued Opinions survey (the **"Notified Amount**") (all amounts stated in this Agreement shall be in U.S. dollars);

2.1.4 credit the relevant Notified Amount to your Account each time you correctly and completely answer all of the questions in a survey; for the purposes of this Agreement Research Now will not consider questions to be "correctly" answered if an answer is non-responsive, confusing or meaningless;

2.1.5 transfer the amount in your Account into your preferred form of payment (e.g. vouchers that can be redeemed with a particular company or in a particular shop) within 30 days of your making an electronic request to Research Now via the website to draw down the amount in your Account; for the avoidance of doubt you will not be able to

draw down the amount in your Account until the amount in your Account has reached $20.00 (the Reward); and

2.1.6 send you or a beneficiary nominated by you, your Reward within 28 days of the purchase of the Reward.

2.2 There is no obligation on Research Now to select any panel member to answer survey questions. The members requested to take part in surveys will depend on the requirements of the clients of Research Now and the random selection of those requested to take part from those that are eligible.

2.3 Research Now may sometimes contact you to ask you some short questions to see if you fit into a particular category. In such cases, Research Now shall not offer any payment for the answering of such questions.

2.4 Research Now, in its sole discretion, reserves the right to:

2.4.1 offer a substitute reward of equivalent value to the payment method you have selected; and

2.4.2 change the value of the Nominated Amount regarding answers to survey and research questions.

2.5 Should you chose a form of payment, the minimum value of which is advertised on this website as greater than $20, the Reward amount shall increase to the amount specified on the website for this form of payment.

2.6 No cash alternative is available in respect of the payment of the Reward.

2.7 Research Now does not credit your Account if you are in breach of Sections 3.1.4 or 3.1.5 below.

2.8 Should Research Now establish that you are in breach of Sections 3.1.4 or 3.1.5 below after crediting your Account, Research Now may deduct from your Account any Nominated Amounts credited in respect of all relevant surveys.

2.9 Research Now shall not be obliged to make any payment to a member:

2.9.1 whose balance in their Valued Opinions Account does not reach the amount of the Reward;

2.9.2 who does not respond to any survey requests within a twelve month period and whose balance has not reached the level of the Reward; for the avoidance of doubt should you not respond to any survey requests in a twelve month period at the end of that twelve

month period the balance of your Valued Opinions Account will be cleared and reset at zero;

2.9.3 whose balance in their Valued Opinions Account is under the level of the Reward at the point that the Valued Opinions service is suspended or terminated by Research Now in accordance with Section 4 below; or

2.9.4 who terminates their membership of the Valued Opinions Panel prior to the balance of their Valued Opinions account reaching the level of the Reward.

3 Obligations of the member

3.1 The Member warrants:

3.1.1 that they are 18 years old or over or if you are less than 18 years old that you are at least 13 years old and have your parents' consent;

3.1.2 that they are resident in the United States of America;

3.1.3 that they shall not register with Valued Opinions more than once;

3.1.4 that they will not attempt to answer a survey more than once, either by using more than one name or more than one email address to enter into a survey;

3.1.5 that they will be honest in their approach to the research, for example they will not provide confusing or meaningless answers.

3.2 Research Now has no obligation in respect of any tax due on the Reward given to a member and the member shall be responsible for declaring any income received from Research Now under this Agreement.

3.3 The member is obliged to claim payment from Research Now via the procedures set out on the website for the amount in their Account within three months of the amount in their Account reaching the level of the Reward. Should the member fail to contact Research Now to claim payment for their Reward within the time specified in this Section 3.3 the member will not be entitled to receive payment for the reward and Research Now shall clear the member's Account which will be reset to zero.

3.4 Should the amount in any member's Account be greater than the level of the Reward at the date on which the member is notified of the procedures in Section 3.3, the member shall have three months from the date of communication to notify Research Now that they are claiming payment for the Reward. Should the member fail to contact Research Now to claim payment for their Reward within the time specified in this Section 3.4 the

member will not be entitled to receive payment for the reward and Research Now shall clear the member's Account which will be reset to zero.

4 Termination

4.1 Research Now may terminate this Agreement and your membership of the Valued Opinions Panel:

4.1.1 immediately on written notice if you are in breach of this Agreement;

4.1.2 at any time by giving you 30 days notice by email; or

4.1.3 if you fail to take part in surveys in any twelve month period.

4.2 You can terminate this Agreement at any time by unsubscribing from the Valued Opinions Panel, this can be done by email, telephone or in writing. The termination will take effect three business days after the receipt of your notice. Research Now's contact details are available from our website.

5 Intellectual Property Rights

5.1 All copyright and other intellectual property rights in the materials on this website are owned by Research Now unless otherwise indicated. You may download, print or copy any material from this website that you wish, provided it is for your own personal, non-commercial use and you keep in place all original copyright notices or other intellectual property notices.

5.2 Subject to Section 5.1 above, you may not copy, modify, alter, distribute, publish, sell or otherwise use any material on this website in whole or in part, unless you have obtained the prior written consent of Research Now.

6 Security

You shall not violate or attempt to violate the security of the Site. Violations of system or network security may result in civil or criminal liability. Research Now reserves the right to investigate occurrences which may involve such violations and may involve, and cooperate with, law enforcement authorities in prosecuting users who have participated in such violations.

7 Communications and Submitted Information

7.1 With respect to all communications you make to Research Now, including but not limited to feedback, questions, comments, suggestions and the like: (i) you shall have no

right to confidentiality in your communications and Research Now shall have no obligation to protect your communications from disclosure; (ii) Research Now shall be free to reproduce, use, disclose and distribute your communications to others without limitation; and (iii) Research Now shall be free to use any ideas, concepts, know-how, information, data, content or techniques contained in your communications for any purpose whatsoever, including, but not limited to, the development, production and marketing of products and services that incorporate such information.

7.2 Personally identifiable information related to you will be subject to our Privacy Policy. As to all other information submitted by you to Research Now, you grant Research Now a worldwide, non-exclusive, irrevocable, royalty-free, sublicensable (through multiple tiers), and transferable license to use, reproduce, distribute, edit, modify, aggregate, translate, reformat, display publicly, perform publicly and otherwise exploit in whole or in part over any means or media including any new uses, media, means and forms of exploitation throughout the universe exploiting current or future technology yet to be developed to the maximum extent permitted by law.

7.3 With respect to Submitted Information and the Site, you agree you will not: (i) submit information that is copyrighted, protected by trade secret or otherwise subject to any third party Intellectual Property Rights or proprietary rights, including any privacy and publicity rights, unless you are the owner of such rights or have permission from the rightful owner of such rights to submit such information and to grant Research Now all of the license rights and other rights granted herein; (ii) upload, post, e-mail or otherwise transmit any information or other content that is unlawful, harmful, threatening, abusive, harassing, tortious, defamatory, vulgar, obscene, libelous, invasive of another's privacy, hateful, embarrassing, or racially, ethnically or otherwise objectionable; (iii) use the Site to harm minors in any way; (iv) impersonate any person or entity, including but not limited to, a representative of Research Now, or falsely state or otherwise misrepresent your affiliation with a person or entity; (v) forge headers, tamper with the TCP/IP packet header, or otherwise manipulate identifiers in order to disguise the origin of any information or other content transmitted to or through the Site; (vi) upload, post, e-mail or otherwise transmit any unsolicited or unauthorized advertising, promotional materials, "junk mail", "spam", "chain letters", "pyramid schemes" or any other form of solicitation; (vii) upload, post, e-mail or otherwise transmit any information or other content that contains computer viruses or any other computer code, files or programs designed to interrupt, destroy, modify, or limit the functionality of any computer software or hardware or telecommunications equipment; (viii) modify, reverse engineer, disassemble, decompile or otherwise attempt or allow others to attempt to discover the underlying computer code for the Site and/or our services; (ix) overwhelm or disable the Site or any of our services or interfere with the access and use of the Site and/or our services; (x) use any robot, spider or other program or device to retrieve or index any portion of the Site, harvest or otherwise collect information about other users for any purpose other than use of our services as expressly permitted herein; and (xi) intentionally or unintentionally violate any applicable local, state, national or international law.

8 Your Activities and Account

8.1 You represent that any information you post or provide to Research Now by means of this Site, including, without limitation, as part of any registration, application, survey, research or inquiry, is true, accurate, not misleading and offered in good faith. You are fully responsible for all of your activities relating to the Site and the information you submit, and you shall bear all risks regarding the use of the Site and any submitted information. For the purposes of this Agreement, the term "you" includes anyone you allow to use your computer or password.

8.2 You may never use another's account without permission. You are solely responsible for the activity that occurs on your account, and you must keep your account password secure. You must notify Research Now of any breach of security or unauthorized use of your account.

9 Privacy

Your privacy is important to us. Our use of your information and your use of the Site and the Services is governed by our Privacy Policy which is incorporated in and subject to these Terms of Use. To review our Privacy Policy, click here.

10 Warranty Disclaimer

10.1 Your use of the site is at your sole risk. Research Now makes no warranty that the site will meet your requirements. All site information and services are provided on an "as is" and "as available" basis, without warranties of any kind, express, statutory or implied, including without limitation, any implied warranties of merchantability, fitness for a particular purpose, noninfringment or nonmisappropriation of intellectual property rights of a third party, title, custom, trade, quite enjoyment, accuracy of information content, or system integration. Research Now does not warrant that the site will be available or operate in an uninterrupted, error free or completely secure manner or that errors or defects will be corrected.

10.2 Separate terms and conditions may apply to certain products, services and materials available through this Site. In such event, such terms and conditions if any will be brought to your attention.

11 Limitation of Liability

11.1 Under no circumstances shall Research now or any of its partners, agents, affiliates, or licensors be liable to you or any other person for any indirect, incidental special or consequential damages arising out of or relating to this agreement, or use or attempted

use of the site. Your sole and exclusive remedy hereunder shall be for you to discontinue your use of the site.

11.2 You and Research Now agree that any cause of action arising out of or related to the Site or any information or services must be commenced within one (1) year after the cause of action accrues. Otherwise, such cause of action is permanently barred.

12 Links

12.1 The Site and/or the Services may provide, or third parties may provide, links to other websites or resources. Because Research Now has no control over such sites or resources, you acknowledge and agree that Research Now is not responsible for the availability of such external sites or resources, and does not endorse and is not responsible or liable for any content, advertising, products or other materials on or available from such sites or resources.

12.2 Research Now assumes no responsibility for the content, privacy policies or practices by such third-party websites. You acknowledge that Research Now is providing these links to you solely as a convenience. By using this Site, you expressly waive any rights, claims or liability against Research Now from your use of any third-party website. You shall not attribute a link on your website to this Site and then link somewhere else. Furthermore, you agree not to frame any information from the Site or otherwise present any content from the Site as your own.

12.3 You may only link to this Site with our prior written permission. Research Now reserves the right to remove any links to its website that it deems are inappropriate without notice.

13 Dispute Resolution

13.1 Any disputes and/or claims arising out of or related to this Agreement, the Site, the Valued Opinions Panel or any surveys or research under or relating to this Agreement shall be resolved exclusively through the use of binding arbitration. Such arbitration shall be subject to the Federal Arbitration Act and the rules of the American Arbitration Association which shall govern such arbitration and be conducted before a single arbitrator in New York City, New York. Any claimants shall have their claims/disputes resolved on an individual basis. Class action arbitration is prohibited under this Agreement. Neither you nor we shall be entitled to join or consolidate claims in arbitration by or against other users or arbitrate any claims as a member of a class or in a private attorney general capacity. Each party shall bear its own costs, including any attorneys' fees, associated with such arbitration.

13.2 Any award rendered in arbitration shall be final and binding, and may be enforced in any court having competent jurisdiction. In addition to any other remedies, we shall also

have the right to seek injunctive relief outside of arbitration to protect our intellectual property rights.

14 General Information

14.1 This Agreement and our Privacy Policy incorporated herein constitute the entire agreement between you and Research Now relating to your use of our Site and related services.

14.2 This Agreement and the relationship between you and Research Now shall be governed by the laws of the State of New York without regard to any conflict of law provisions in any jurisdiction.

14.3 You and Research Now agree to the personal and exclusive jurisdiction of the federal and state courts located within the City of New York, State of New York. You hereby consent to the exclusive jurisdiction and venue of the state and federal courts in New York City in all disputes arising out of or relating to this Agreement, the Site, and our services.

14.4 The failure of Research Now to exercise or enforce any right or provision of this Agreement shall not constitute a waiver of such right or provision.

14.5 Should any part of this Agreement be declared invalid or unenforceable by a court of competent jurisdiction, this shall not affect the validity of any remaining portion and such remaining portion shall remain in full force and effect as if the invalid portion of this Agreement had been eliminated.

14.6 BLOCKBUSTER GiftCards® are subject to complete terms and conditions found on card and/or packaging, and are redeemable for movies, games and entertainment product at participating BLOCKBUSTER store locations nationwide. Membership rules and certain restrictions apply for rental at BLOCKBUSTER. For complete Blockbuster GiftCard terms and conditions, or to locate the store nearest you, visit www.blockbuster.com. BLOCKBUSTER name, design and related marks are trademarks of Blockbuster Inc.

Appendix H: Focus Group Participant Recruitment Flyer

PARTICIPANTS NEEDED FOR FOCUS GROUP

Researcher is looking for participants to be part of a focus group investigating food safety recommendations in a crisis situation and social media. If you are between the ages of 18-65 years old, we would like to invite you to participate in our focus group.

When

Where Scripps Computer Lab – Focus Group Room
College of Communication and Information
University of Tennessee, Knoxville

Time

FREE FOOD AND BEVERAGES WILL BE PROVIDED FOR ALL PARTICIPANTS

For more information regarding the focus group, please contact Karen Freberg at kfreberg@utk.edu or by cell phone (352-219-7915).

Thank you very much for your time and consideration.

Appendix J: Informed Consent Form for Focus Group Participants

INFORMED CONSENT STATEMENT – FOCUS GROUP

The effects of message source and credibility on the intention to comply with food safety messages in a crisis

INFORMATION ABOUT PARTICIPANTS' INVOLVEMENT IN THE STUDY

You are being asked to review this informed consent form, which outlines the purpose of the research project, before proceeding further. After reading and signing this copy, you will be given a copy to keep in case you have further questions about the study. The focus group will consist of questions about food safety recommendations constructed following the guidelines set by Ajzen (1985) and Francis et al. (2004). You do not need to respond to questions if you so choose and you may leave at any point during the focus group session. The session will be audio taped and the investigator will take notes. Data will be stored securely and will be made available only to persons conducting the study unless participants specifically give permission in writing to do otherwise. No reference will be made in the oral or written reports which could link participants to the study. The focus group session will last between one to two hours.

RISKS

The risks to participants are minimal. The researcher will ensure the confidentiality of all participants and use participant answers only for the purpose of this research study. No participant's identity will be disclosed at any point during the process. Data collection will be conducted by the researcher by taking notes and audio recording the sessions. To ensure confidentiality, each participant and his/her questionnaire will be assigned a number (ex. Participant 1, Participant 2, etc.)

BENEFITS

The classic crisis communication literature has focused on best practices in traditional media (ex. news releases, prepared message statements, press conferences, etc). With the emergence of social media in the 21st century, a set of best practices in crisis

communication should expand to reflect the ways people currently obtain and share information. Although many principles remain the same for communicating through traditional or social media, social media present new challenges. The immediacy and variety of social media coupled with the new phenomenon of user-generated content reduces the control over the message previously enjoyed by an organization during a crisis.

This dissertation will attempt to contribute to our knowledge of best practices in crisis communication by exploring the relationships between several key constructs, including user-generated versus professional content, confirmed versus unconfirmed information, and receiver intention to comply with a safety message. A theoretical foundation will be provided by the Theory of Planned Behavior.

COMPENSATION

Participants will be compensated for their work in the focus group with free snacks and beverages that will be available throughout the focus group session. These snacks and beverages will be served in their original packaging, and you are encouraged to review the nutritional labels if you have food allergies or any special dietary requirements.

EMERGENCY MEDICAL TREATMENT

The University of Tennessee does not "automatically" reimburse subjects for medical claims or other compensation. If physical injury is suffered in the course of research, or for more information, please notify the investigator in charge (Karen Freberg, 352-219-7915).

CONTACT INFORMATION

If you have questions at any time about the study or the procedures, you may contact the researcher, Karen Freberg , at 476 Communications Building, 1345 Circle Park, Knoxville, TN or 352-219-7915. If you have questions about your rights as a participant, contact the Office of Research Compliance Officer at (865) 974-3466.

PARTICIPATION

Your participation in this study is voluntary; you may decline to participate without penalty. If you decide to participate, you may withdraw from the study at anytime without penalty and without loss of benefits to which you are otherwise entitled.

If you withdraw from the study before data collection is completed you data will be returned to you or destroyed.

CONSENT

I have read the above information. I have received a copy of this form. I agree to participate in this study.

Participant's signature _____ Date _____

Investigator's signature _____ Date _____

VITA

Karen Freberg is a doctoral candidate studying public relations at the University of Tennessee. She is currently a graduate teaching associate at the University of Tennessee and an adjunct faculty member for West Virginia University. Freberg's research interests are in public relations, social media, crisis communications, and reputation management. In addition to this teaching experience, Freberg has presented at several U.S. and international research conferences, including ones in the Netherlands, Brazil, Greece, and China. Freberg also worked as a public relations intern for Total Media in Cape Town, South Africa in 2007 with clients in the fashion and consumer industry. Before coming to the University of Tennessee, Freberg earned a Master's degree in Strategic Public Relations at the Annenberg School for Communication at the University of Southern California in August 2007. Freberg received her Bachelor's of Science degree in Public Relations at the University of Florida in August 2005.