（二）研究計畫之背景及目的

Introduction

Research Background

During April and May of 2003, Taiwan department stores, movie theaters, barbers and even night markets experienced severe slowdowns in consumer traffic as Severe Acute Respiratory Syndrome (SARS) was being widely reported in the media. At the height of the SARS incident, numerous hospitals and whole residential city blocks were quarantined, over 150,000 people in total. In this environment, shopping districts were often totally deserted as people feared infection. Those who did venture out had their body temperatures monitored for any signs of the contagion and encountered sales staff wearing surgical facemasks as a line of defense against the unseen pathogen. While the most serious environmental event in recent years, consumers are constantly receiving information about marketing exchange locations and associated risks. Swimming pools closing due to viruses, day markets closed due to bird flu, pork meat sales declines from hoof and mouth disease, and department stores closed due to pollutants are just a few examples often experienced in Taiwan.

The current research proposal explores the relationship between these potentially catastrophic health concerns, shopping behavior, and emotions. Environmental catastrophes obviously impact concerned people and do not pause when consumers need or want to make a purchase. The affect of advertising messages on consumer attitudes toward shopping has been well studied, as has the affect disasters have on emotions, yet little work has been done to combine these two strands of research in the marketing context. This research proposes to track consumers and media messages during a one year interval in order to develop a model of how consumers are influenced in their marketing exchange behavior. In the case a crisis should arise, the researchers will be well placed to track developments and then generate a description of consumer characteristics that play a role in reactions to disaster news. Such information can then be used by marketers during times of crisis, by sending marketing messages to the groups of consumers most likely to first return to normal shopping behavior and/or by knowing the marketing messages that have the highest positive effect on worried consumers in general.

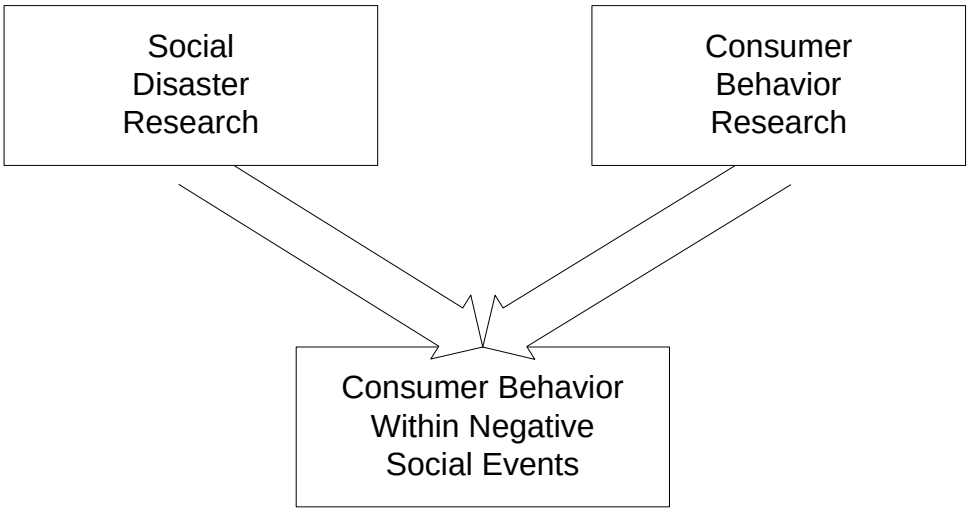

Figure 1. Research goal to combine two existing research threads

Rationale of the Study

This proposed research attempts to capture the relationship between environmental stress, the individual's emotional state and, ultimately, shopping behavior. Specific attention is paid to the environmental stressors that occur in the media, such as contagious diseases, environmental events (earthquakes, Typhoons, etc.), and social/political strife. The contagious disease of SARS may or may not return, but the events that unfolded during the SARS outbreak are representative and typical of disaster issues of society in general. Specifically, the reaction of governmental bodies, business leaders, and citizens to the SARS event had little to do with the specifics of SARS and much to do with societal coping mechanisms. Thus, if consumers can be tracked during a future event, results can have a wide range of valid applications, including terrorists threats, so often faced in the U.S. today.

Background Research

In this section, the researcher begins with a brief introduction to disasters and how low intensity tribulations may be relevant to consumers both in and out of the shopping environment. This is followed by a review of the role epidemics have historically played in human society and concludes with an explanation of the specific case of SARS in Taiwan (epidemics being a prime candidate for envirionmental issues in Taiwan due to numerous virus related issues, such as bird flu, monkey virus, hoof and mouth, etc.). Given the many possible events that can be labeled disasters, definitions are numerous as are gaps in the research (Chemtob, Nakashima, & Hamada,

2002). Reviewing 160 disaster data sets, Norris, Friedman, and Watson (2002) described symptoms accompanying a disaster as including posttraumatic stress disorder (PTSD), nonspecific distress, such as anxiety or depression, and medical conditions and sleep issues. Psychological effects may linger for years, as in the Tokyo underground Sarin gas attack of 1995 where effects were observed four years afterwards (Watts, 1999). Disasters are themselves characterized as being acute, collectively experienced, and with a sudden onset, yet there is a shortage of studies on invisible biological or chemical agents (Norris et al., 2002). Not a traumatic single incident, such as 9-11, yet not a chronic condition lasting years, as a toxic waste dump, the SARS virus did, nonetheless, paralyze numerous countries, threaten to cut off whole cities and incurred enormous economic costs. Within that context, SARS seeped into every aspect of life, including consumption behavior.

It is generally assumed that disaster related stress does have an influence on a person's psychological state—making people generally more dissatisfied with their environment and things happening therein (Byron & Peterson, 2002). Quantification of such influences can contribute to understanding the consumers within the context of being a whole person, not only after recognition of a need has arisen. Consumers need not actually be threatened, but only perceive that a threat exists, as in the SARS event, the actual number of deaths was relatively low. Many of the social/economic difficulties were man-made, such as the WHO travel warnings that strangled commerce, as well as strict quarantines. Rather than center on descriptions of environmental events, a more productive path is to understand the integration of disaster messages within the consumer's psychology and how it then interacts with and influences other behaviors.

Disasters need not be natural, but are often created and amplified through man-made interpretations and technology (Weisaeth, 1994). Simply raising the possibility of death or injury affects perceptions of physical risk and resulting behavior (Ursano & McCarrol, 1994). Epidemics, natural disasters, terrorism threats, and even environmental pollution can all act as psychological pressures upon employees with resulting increases in stress lower levels of buying or at least an alteration in buying behavior. The essential component of disaster stress is that issues simply surpass coping mechanisms or resources of the community (Weisaeth, 1994). Thus, the actual source of the disaster, as well as real versus imagined consequences, is irrelevant

to the firm, since customers will be stressed: negatively affecting purchasing behavior (Gelade & Ivery, 2003).

Social Patterns to Environmental Events

Social crises tend to follow well established patterns of human behavior. For example, reaction to SARS followed a pattern from millennia of human interaction with epidemics. In developed countries, many have thought medical technology closed the door on killer epidemics, yet collective anxiety over SARS, and other viruses, occasional soar. Never far from peoples' thoughts, Krieg (1992) asserts these stories of epidemics typically describe three stages, starting with panic and isolation, followed by denial of pestilence existence, and finally, a search for the source of infection and its treatment. Influenza in 1918 was referred to as Spanish influenza or the Spanish lady, but appears to have originated in the United States (Barry, 2004).

Human history is bound up with epidemics (Oldstone, 1998); a primordial fear of disease has never left human society. Social reaction to SARS was not a historical exception. During a four-month period in spring 2003 SARS rapidly infected 8,425 people and caused 813 deaths (Pirisi, 2003). SARS cases were reported in 29 countries, with fatalities in Singapore (33), Taiwan (37), Hong Kong (299), China (349), and Canada (43) (World Health Organization, 2003). In China, public-health authorities' reacted to SARS in the same way they had treated sexually transmitted diseases in the early 1990s: denial and condemnation (Hershatter, 1997, p. 348). Taiwan officials were also in denial, classifying SARS as a foreign problem. The history of humans on Earth is tightly bound up with epidemics (Oldstone, 1998) and is likely to continue to be so for the foreseeable future.

In the case of SARS, demand for sterile surgical masks and numerous quack cures skyrocketed, very reminiscent of the account of changing consumer demands during the plague outbreak of 1664 in London (Defoe, 1999). Like news related to terrorist bombings (Ledoux & Gorman, 2001) television reports can trigger fear in viewers that drives down or up demand for products and services. An association between television viewing of terrorist attacks and posttraumatic stress has been documented (Ahern et al., 2002), while data from 9-11 found that television viewing brought events to those outside of the geographic areas, increasing stress even for individuals not directly affected by the disaster (Schlenger et al., 2002), while during the

week after the attacks, shopping levels in malls dropped off to nearly nothing. In Taiwan, the constant barrage of SARS related news combined with governmental measures unceasingly reminding citizens that a disastrous epidemic was on their doorstep, brought everyone, collectively, close to the crisis (see Figure 2).

Governmental effectiveness in ending the SARS epidemic has been debated (Taiwan CDC, 2003). With only 0.1% of all those quarantined being diagnosed as suspect or probable SARS cases it now appears that the strict policies were disproportionate to the actual risk. The context of SARS in Taiwan fits well with the technology man-made disasters faced today. Like Yellow alerts, advisories to prepare plastic sheets and duck tape, and biological warfare drills, in the U.S., the SARS social crisis in Taiwan was driven by government warnings and advisories. These are not disasters that strike quickly and then depart, like an earthquake, nor are they unknown threats looming on the horizon, like toxic waste or global warming. SARS is representative of a threat that may never be actualized but is made imminent through government pre-emptive measures supported by societal calls for action.

Figure 2. Public building where body temp. was measured and SARS cases reported

Psychological Measures

The researcher now turns to specific mechanisms through which a disaster, such as an epidemic, may impinge on consumers' environments. It is proposed, by the researcher, that two frames of reference (event and social) can be used in studying the proposed phenomenon. The event frame includes event specific variables (dealing directly with an even in society, such as SARS and its associated risk) and event diffuse variables (not directly related to the negative

event itself). The social frame includes public (at the social level, such as at day markets, department stores, and restaurants) and private (the personal level).

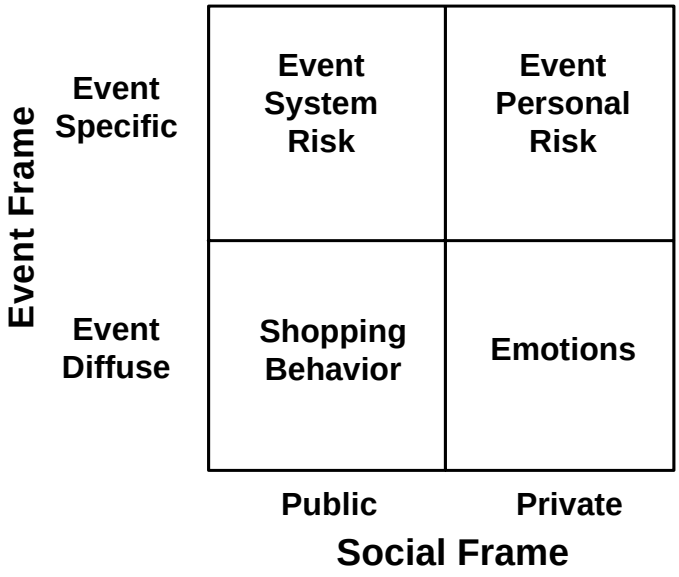

Figure 3. Research framework includes the event and the social frame

Event Diffuse: Shopping Behavior

Struggling to retain control is an important human theme and the source of stress (Theorell, 2003). Lengthy or intense struggles can make involvement difficult, and lower self-esteem (Bhagat, 1983). The impact of such emotions on shopping behavior has not been well studied. Generally labeled approach-avoidance motivational conflicts, consumers are simultaneously positively and negatively motivated (Solomon, 2004). Government involvement in disasters is often limited to primary support: emergency loans, temporary housing, and food relief (Ledoux & Gorman, 2001; Sanchez, Korbin, & Viscarra, 1995). Yet modern media hyped events can have wide-ranging effects on consumers while government departments send mixed messages (Norris & Uhl, 1993).. The 9-11 terror attacks in the U.S. is an example, where some consumers have been found to avoid purchasing, due to media and government signals (orange alerts for example), while other consumers react by splurging and buying luxury goods (Cosgrove & Prasso, 2001; Frink, Rose, & Canty, 2004). Most of these issues are potential in nature and do destroy homes; work locations and shopping areas stay open, and food is abundant. Regulations and warnings embedded in the media raise anxiety (Norris & Uhl, 1993) that requires extended and in depth observation. Thus, the first variable of interest within the event frame is shopping behavior: the public side of the diffuse event (see Figure 3).

Event Diffuse: Emotions

Moving from public exchange to home, public to private, stress intrudes into family life (Mossholder, Settoon, Armenakis, & Harris, 2000), irrelevant of gender (Eagle, Miles, & Icenogle, 1997). Role conflict research has shown that emotional issues can spill over into different life roles (Frone, 2003) and even negatively affect one's health (Frone, Russell, & Barnes, 1996). Insecurity can also lead to anxiety and depression (Dekker & Schaufeli, 1995), poor sleep quality (Mattiasson, Lindgarde, Nilsson, & Theorell, 1990), and work issues (Vahtera, Kivimaki, & Pentti, 1997). How such emotions, linked to environmental events, impact consumption behavior has not been studied yet is important in understanding the consumer as a whole person within his/her societal context. This second variable of interest is emotions: the private side of the diffuse event (see Figure 3).

Event Specific: System Risk

Public policy models center on the prevention of socially disruptive events, such as diseases, with the goal of eliminating or reducing actual risk, but this perspective ignores the exchange context (Tetrick & Quick, 2003), where people must interact with others both at work and in shopping environments. Psychological influences of a societal event can first be examined at the societal level, where risks are perceived to exist all around: inherent in the system. Labeled the *risk society* by Beck (1992), modern media spreads a fear that risks are lurking everywhere (Mol & Spaargaren, 1993). In attempting to create a safe society, levels of perceived security can diminish as increasingly minute issues are given evermore attention. Freedgood (2000) points out this contradiction grew with the middle class and industrialized market economies, such as in the case of the Victorians, who produced large quantities of facts, showing the security of England, but paradoxically increased questions and distress. Similarly, technology's uncertain role in disasters raises levels of chronic stress even in the absence of any actual physical events (Norris & Uhl, 1993). This third variable, then, is directly related to the relevant negative event, what the researcher has labeled event system risk (see Figure 3). From this perspective, the researcher proposes to monitor news media in order to track input to consumers and potential perceptions of societal risk.

Event Specific: Personal Risk

When a risk inundates society, humans adopt cognitive measures to protect their individuality. This is especially true when the risk cannot be seen, making it easy to deny (Weisaeth, 1994). A majority of people have been found to express an optimistic bias in relation to health and safety risks (Weinstein & Klein, 1996). This bias is expressed through a belief that one's own risk is lower than one's peers (Myers & Brewin, 1996), cognitively protecting oneself by attributing risk to the other, separate and distinct from the self (Joffe, 1999). This insistence of lower risk for oneself is present even when respondents point out similarity with peers (Weinstein, Lyon, Rothman, & Cuite, 2000). Foreigners, for example, often receive blame as the source of risk for an event (such as crime, disease, lower educational standards, etc.). At some point, however, the risk can no longer be dismissed individuals attempt to protect their individuality through an optimistic bias in relation to one's own health and safety risks (Myers & Brewin, 1996; Weinstein & Klein, 1996).

When the optimistic bias is directly exposed to disasters, as in 9-11, stress levels rise (Byron & Peterson, 2002) as the optimistic bias is overwhelmed (Weinstein et al., 2000). This is especially true for extended or repeated exposures. For example, the second BSE (mad cow) scare, in 1996, witnessed substantially lower levels beef consumption than the first scare in the late 1980s (Caplan, 2000), implying that temporal as well as proximate variables can defeat the optimistic bias of consumers. Coping ability is also decreased when personal actions are perceived has having little to no influence on expected outcomes. This shifts one's locus of control from internal (in control) to the external (out of control), leading to higher feelings of threat (Lefcourt & Davidson-Katz, 1991), and increasing perceptions of risk to the self. The result is commonly seen in Taiwan, as in drastic drops in pork consumption (hoof and mouth disease) or chicken consumption (bird flu), as consumers take in the news and no longer can believe in their own immunity from the associated risks. The fourth, and last, variable is labeled event personal risk, being the private side of the event specific dimension (see Figure 3).

Insight through the servicescape

All four of the previous variables are mainly psychological constructs proposed to be tracked within a sample of consumers. Media messages act as input, bringing "news" of the

events (also to be tracked in this project), yet another important factor to consider is the marketing message presented by marketers themselves within the servicescape. Bitner (1992) has labeled *servicescape*. "Similar to a tangible product's package, the servicescape and other elements of physical evidence essentially 'wrap' the service and convey an external image of what is 'inside' . . . . the servicescape aids in the socialization of both employees and customers in the sense that it helps to convey expected roles, behaviors, and relationships (Zeithaml & Bitner, 1996, p. 524-5)." Based on stimulus-organism-response (SOR) theory, servicescapes help ease consumers into the consumption experience. This easing can be especially instrumental when attempting to overcome uncertainties brought on by media messages concerning an environmental event. Adopting Paco Underhill's (1999) use of observation in real shopping contexts can supply an understanding from an anthropological perspective in order to understand meaning derived by consumers (Kozinets, 2001) and how that meaning may play a role in overcoming consumers' anxiety related to a negative environmental event.

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（三）研究方法、進行步驟及執行進度

Method

Research Framework and Hypotheses

Combining the two dimensions discussed, the researcher obtained the research framework that this study centers on (see Figure 4). The social frame of public and private are existing research strands and are not themselves inherently related to social negative events, but rather reflect the role boundaries that characterize modern life, which are increasing integrated and thus influence each other (Ashforth, Kreiner, & Fugate, 2000). This division of boundaries is often referred to as public and private or group and individual. In this study, the context is the shopping environment, thus the dichotomy is drawn between the person's mental state during exchange activity (public) and at home (private). Adding interaction with the event diffuse variable is also an existing research thread, most often referred to as disaster or catastrophe research. Lacking in previous work is the specific impact of negative societal events on consumption behavior. Unique to the current study is the addition of the event specific variable, which can interact with the social frame variables.

This framework serves as the basis for exploring how a negative event can impact and interacted with the more traditional variables, leading to the specific research questions:

Guiding research questions:

RQ1: What is the nature of the relationship between social risk and personal risk within the consumption frame?

RQ2: What is the nature of the relationship between shopping behavior and emotions during a negative societal event?

RQ3: What is the nature of the relationship between event specific and event diffuse issues within the consumption frame?

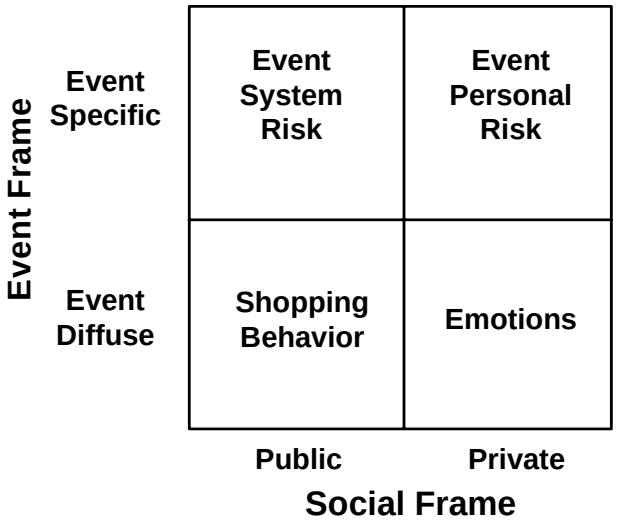

Figure 4. Research framework

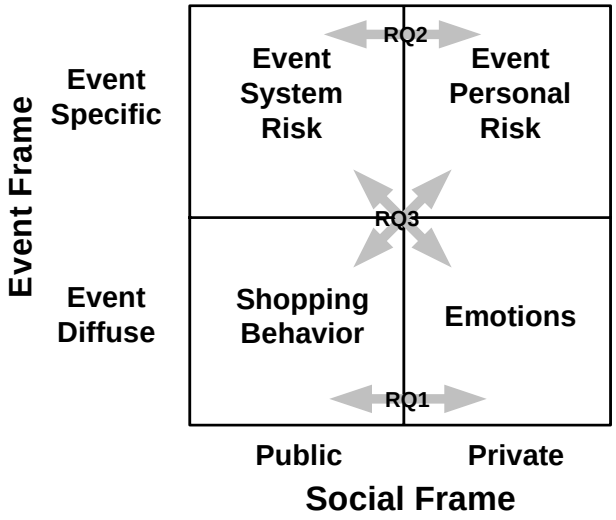

Figure 5. Research questions

Design of the Study

Disaster research specifically, and stress research in general, often suffers from lack of control measures. Although stress can be measured through descriptive analysis at the time of the stress, causation linkage to stressors requires similar measures collected at non stress periods, preferably before the event. The current research proposes a two-study approach that can be drawn from two periods within a one year continuous observation in order to implement a quasi-

experimental design employing a test-control group methodology. The advantage of such an approach is that attitudes prevalent in the general public during an event can be compared with attitudes when no such stressor is present. Direct comparisons between these two temporal periods (using the same sample) will allow a matched comparison during a normal period and a period of high stress Figure 6. These two groups will actually be the same sample but ad differing times (a negative event time and a normal time).

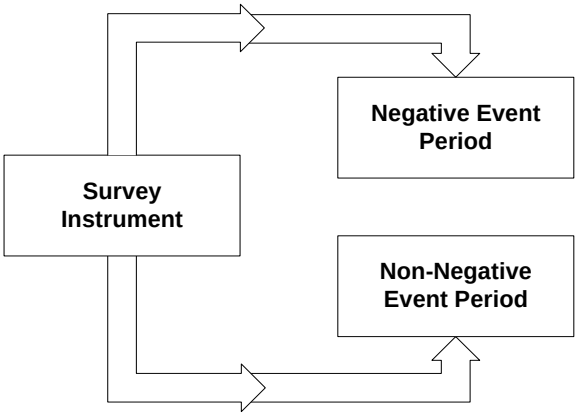

Figure 6. Test control group quasi-experimental design

Given the unique nature of social events, especially the denial associated with the early stages, it is unrealistic to expect any useful data could be generated from hypothetical questions or scenarios presented to subjects. By tracking consumers over a year's period, the proposed research will be well positioned to capture a negative event as it happens--nearly impossible to implement without prior arrangements (see Figure 7).

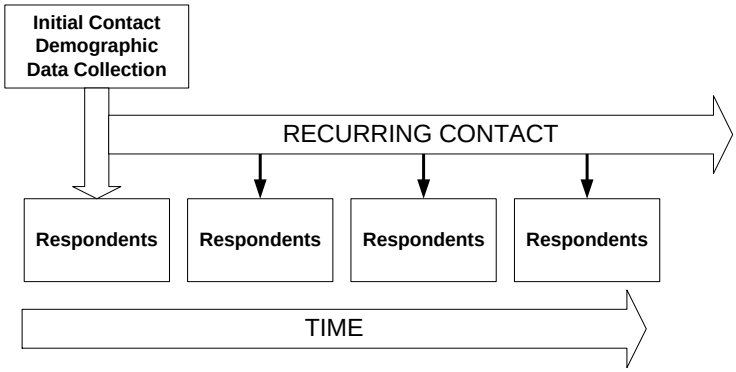

Figure 7. Longitudinal contact with respondents to capture environmental events

Taking full advantage of the longitudinal nature of this study, survey questions can be modified at any time to match current events. Thus, if news of an epidemic were to build in the media, the monitoring of news (through continual content analysis) would result in relevant issues. The same is true of the shopping environment, which will be monitored by observers, and also result in content analysis data. Thus, as the epidemic seriousness increases, survey re-contact time could be shorted to weekly and even daily, with questions specifically relevant to the current issue (see Figure 8).

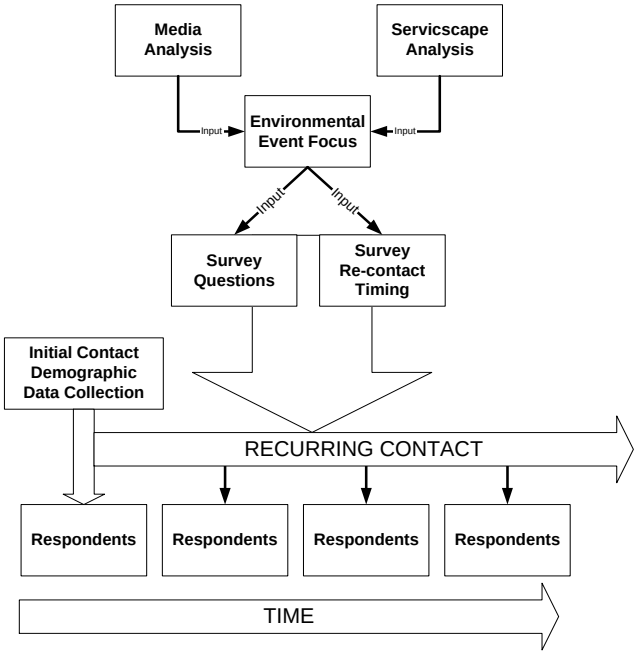

Figure 8. Ongoing survey modification to match environmental events

Research Flow

Delay in studying a disaster usually makes emotions difficult to measure because stress levels drop off quickly (Jeney-Gammon, Daugherty, Finch, Belter, & Foster, 1993), yet collecting data related to disasters is difficult due to unpredictability. For this reason, the first three stages of this proposed project are concerned with establishing variable definitions through contact with a group of respondents. From the start of the project, deep interview techniques will be employed to developed meaningful measures as well as establishing contact/re-contact procedures.

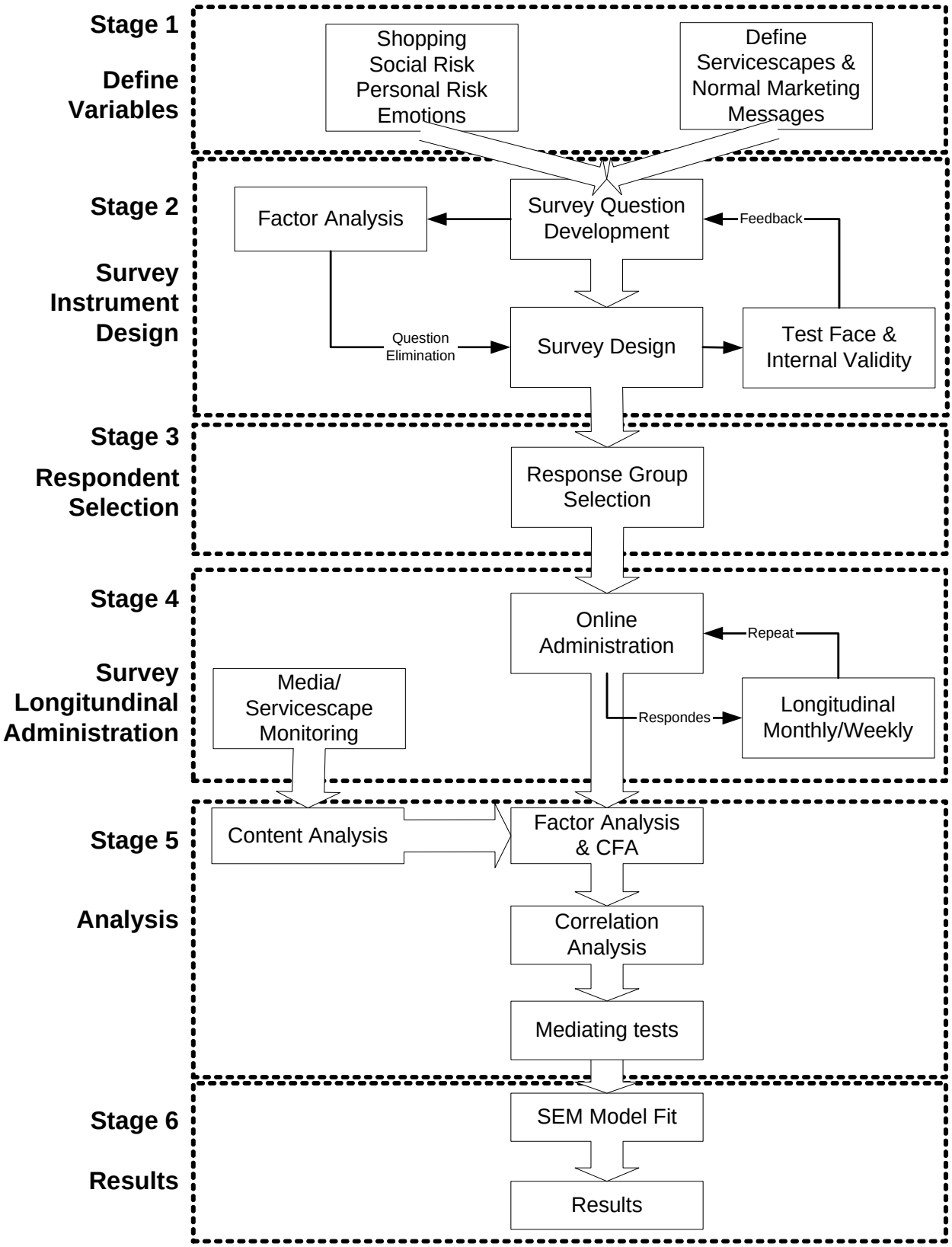

Figure 9. Study complete research flow

Sampling Design

Participants will be able to access the survey instrument at regular intervals over the Web, using a self administered approach. This will reduce any delay experienced by normal mail and help to capture actual feelings simultaneously experienced during any social event. Computer-assisted self-administered survey instruments (CASI) exhibit higher accuracy when dealing with personal or sensitive issues (Tourangeau & Smith, 1996), which could be of concern in this case. In general, online Web-based surveys display similar psychometric properties to their paper-based counterparts (Stanton, 1998; Tourangeau & Smith, 1996), while having the added advantage of being able to draw respondents from a wide geographic area in a short time, thus with the advantage of increased potential for accuracy in personal matters, an online survey was designed.

Traditional survey and experiment techniques do not allow mixing, i.e., a mail survey cannot suddenly change its questions based on a respondent's previous answers. Thus experimentation and surveys have been clearly separated. However, computer software does allow this mixing, where a survey can actually change while in the middle of completion in order to adapt to the respondent's answers (Figure 10). Computer user sophistication has reached a level where the abstractness of objects appearing on the screen is not a barrier for user cognitive understanding. With good interface programming and intelligent software (Cox & Walker, 1993; Fischler & Firschein, 1987), nearly any object or concept from the real world can be represented on the computer screen.

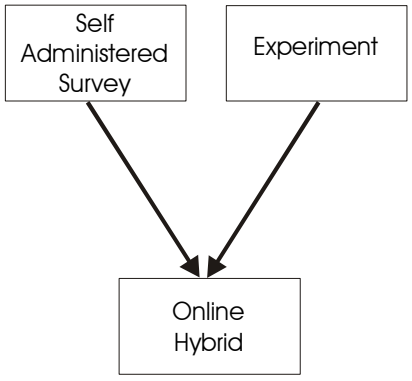

Figure 10. Online sampling approach merges approaches

Survey Instrument

Survey questions will be developed in the early stages of the project, but may follow the following general guidelines. Measures of stress will be based on the person-environment fit model, where a lack of fit leads to negative psychological outcomes (Spielberger, Vagg, & Wasala, 2003). This direction often defines stress within the context of resulting behaviors, such as tension. House and Rizzo's (1972) tension scale can also be adopted. Emotions can be examined through the dimensions of emotions scale (Mehrabian & Russell, 1974), which containing 18 semantic differential questions concerning levels of pleasure, arousal, and dominance (PAD).

Risk questions can be developed to be relevant to media message of the time and will reflect the basic split between personal and social risk in Joffe's (1999) book. Social risk questions will be within the context of Taiwan and touched on the most relevant issues being covered in the media at the time as an increasing risk to domestic populations. Because the optimistic bias appears when respondents indicate their risk is below average (Buchanan & Smith, 1999; Weinstein et al., 2000), personal risk questions will be asked relevant to *myself* and *people I know*.

Initial invitations for participants will draw respondents from over the Web through an ad placed in a popular local portal. This approach will assure a wide geographic spread of respondents. Monthly re-contacts will be initiated and can be increased to weekly and even daily if an environmental event should take place (see Figure 11).

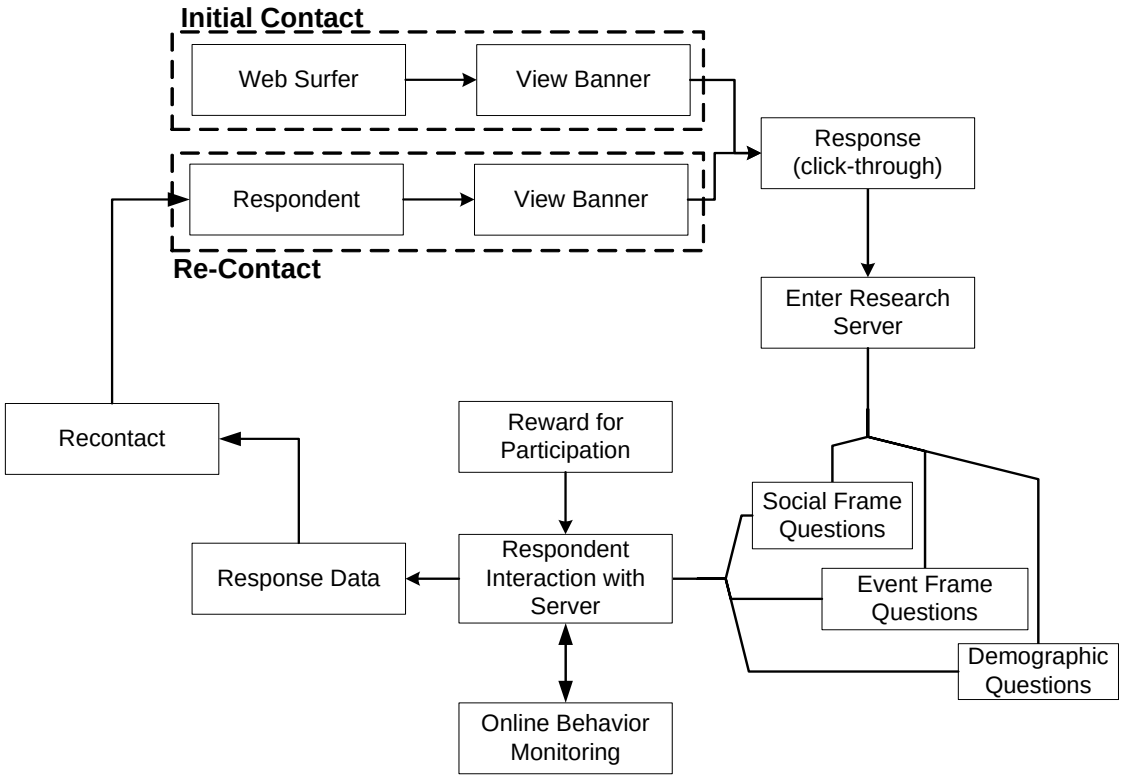

Figure 11. Survey respondent online flow

Portal space will be rented from local ISP (Internet Service Provider) firms. Banners advertising the experiment will be placed on the portal's main Web page. Viewers will be able to click-through which opens a browser window to the experiment's Web site (Figure 12).

Figure 12. Web portal with placed ad to draw initial respondents

Survey respondents will be asked to first complete an informed consent for participation based on the American Psychological Association's (APA) guidelines on informed consent (Fischman, 2000). Questions will the be presented one at a time in a randomized order in a fashion similar to that in Figure 13 and Figure 14.

Figure 13. Preliminary example of online questions

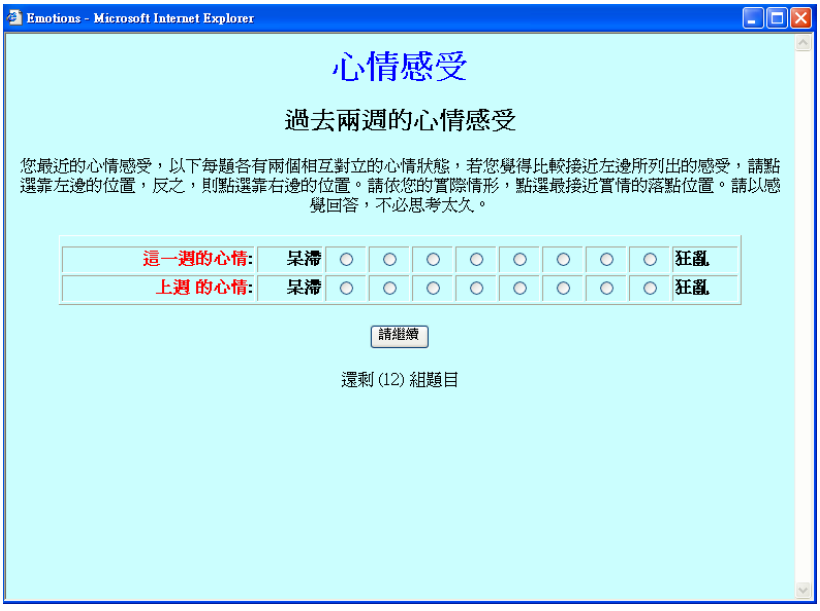

Figure 14. Preliminary example of online questions

Data Analysis

Factor analysis will be employed to test for the survey question loading on predicted question groups. Once question validity is established, correlation, partial correlation and mediation testing can be undertaken. Structural equation modeling will finally be undertaken to confirm the relationships and direction of influence as well as placing clear values on the proportionality of the influences. Results from this stage will then be used to describe the exact impact of a negative social event on both personal and public psychological states, as well as how shopping behavior was influenced by the event and how that then fed into personal feelings of wellbeing.

Content analysis

Content analysis is next applied to the core grounded theory concepts drawn out during the ethnographic work. Photographic blueprint analysis (this includes photographs, videos, recordings, and transcribed interview data) is included in this stage to bring a deductive approach to bear. Results from the content analysis allow narrowing of and increased quantification of the servicescapes' relationship content characteristics. The results should be able to fit into marketing metaphors which can then be used generally in many shopping contexts, while also used to form specific parts of servicescapes in any of the four servicescape locations.

（四）預期完成之工作項目及成果

Expected Results

Each stage of the proposed research will result in useful applications within the threads of consumer behavior and disaster research. Media and servicescape analysis will provide another group of results that in itself should prove useful. For local marketers, numerous findings involving temporal developments of consumer attitudes and emotions can find application in marketing efforts. Cultural comparison of media, risk attitudes, servicescapes, and the resulting consumption patterns will prove useful. Most important is the opportunity to developed theory based on the combination of these topics (see Table 1).

Both exploratory and grounded theory results offer an opportunity to build an inductive foundation of consumer behavior observation specific to Chinese shopping behavior that has not been well covered in the existing marketing literature. The confirmatory deductive results from the content analysis supply specific descriptions of what is commonly included in Chinese servicescapes.

Table 1. Research results and applications

Result	Local Marketing Application	Global Marketing Application	Theory Construction
Consumer Behavior	✓	✓	
Disaster Sociology	✓	✓	
Media Messages		✓	
Servicescape	✓	✓	
Combined	✓	✓	✓

These results supply an opportunity to combine a number of well studied consumer behavior variables in a way not yet undertaken. Structural equation modeling will be applied at the completion of this project in order to find relationships within the context of a negative environmental event, such as a SARS event (see Figure 15). These results will then lay the groundwork for future research into this topic by directing effort, rather than numerous efforts not including the specific consumer orientation presented here.

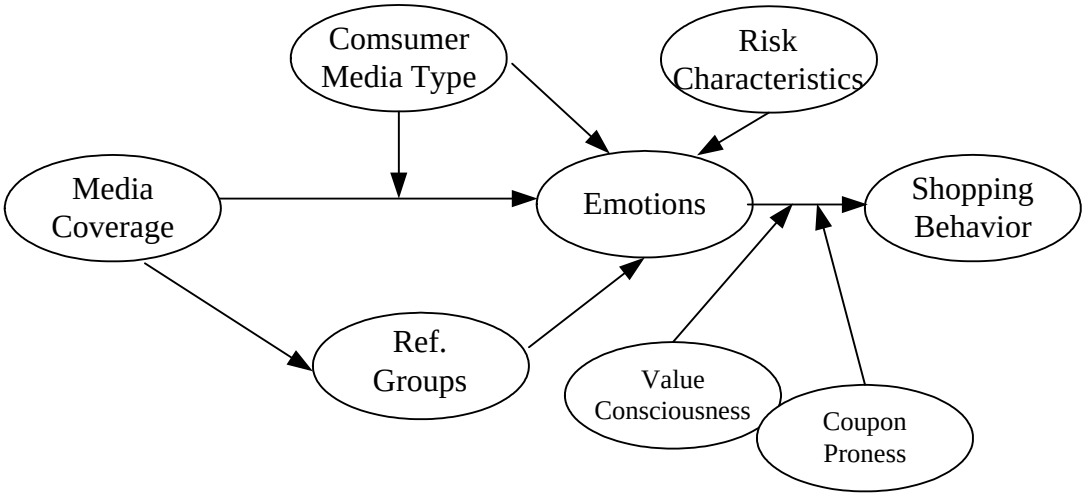

Figure 15. A possible resulting model