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**ONLINE POSTING ANXIETY AND ITS INFLUENCE ON BLOGGING:
COMPARING THE U.S. AND CHINA**

By

Xun Liu

A DISSERTATION

Submitted to

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ABSTRACT

ONLINE POSTING ANXIETY AND ITS INFLUENCE ON BLOGGING: COMPARING THE U.S. AND CHINA

By

Xun Liu

Through a social cognitive theoretical orientation, this study aims to identify and illustrate processes and elements central to blog maintenance intentions. A structural model has been proposed to explain American and Chinese bloggers' blog maintenance intentions. The structural model is based on the assumptions that cognitive factors (blogging self-efficacy, positive outcome expectations for blogging, and negative outcome expectations for blogging), online posting anxiety, and general anxiety tendencies (writing anxiety and social anxiety) affect one another and therefore help in predicting blog maintenance intentions. The original contribution of this dissertation research is in the application of social cognitive explanations of anxiety to the realm of computer-mediated communication.

A combination of qualitative and quantitative research methodology was employed to test the structural model. Three studies were conducted. In study 1, in-depth interviews were used to examine the nature of blogging among American and Chinese bloggers. In particular, four new concepts are introduced - a) blogging self-efficacy, b) positive outcome expectations for blogging, c) negative outcome expectations for blogging and d) online posting anxiety. Ten American bloggers and 16 Chinese bloggers were interviewed online about their beliefs pertaining to these four concepts.

Study 2 applied a pre-test and post-test survey design to investigate the reliabilities and validities of the newly developed measures. A snowball sampling method was used to recruit bloggers in America and China. Eighty-seven American bloggers and 70 Chinese bloggers participated in the pre-test online survey. Among these, 58 American and 53 Chinese bloggers completed the post-test online survey after two weeks. A psychometric analysis was also conducted. Two reliability measures namely the Cronbach's coefficient α and test-retest reliability were calculated. The content validity, criterion-related validity, and construct validity were examined. The results showed that these new scales demonstrated acceptable reliability and validity measures.

The purpose of the main study was to test the proposed 16 hypotheses. One hundred and forty-five American and 178 Chinese bloggers were recruited through a purposive sampling method. Structural equation modeling technique was employed to test the proposed model and four alternative models. The model with blog maintenance intentions as the dependent variable showed the best fit.

In summary, the structural model demonstrated the process through which various social cognitive variables contribute to online posting anxiety and blog maintenance intentions in two cultures.

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CHAPTER 1

INTRODUCTION

1.1 The Focus of the Study

Blogs are arguably one of the most significant media revolutions since the arrival of television (Sullivan, 2002). More than 80,000 blogs are created each day, with a new blog being created about every second (Perlmutter & McDaniel, 2005). In the field of communication, much of the scholarly research about blogs has focused on online journalism (Gillmor, 2003; Johnson & Kaye, 2004; Lasica, 2002, 2003; Matheson, 2004; Singer, 2005; Susan, 2006; Ziomek, 2005), political communication (Kavanaugh *et al.*, 2006; Keren, 2004; Lawson-Borders & Kirk, 2005; Park, 2003a; Poor, 2005; Schafer, 2006; Singer, 2005), and blogging motivations (Brady, 2006; Kaye, 2005, 2007; Li, 2005; Nardi *et al.*, 2004a; Nardi *et al.*, 2004b; Trevino, 2005). Qualitative and quantitative research methods have been used to examine blogging including content analysis (Herring *et al.*, 2006; Herring *et al.*, 2004b; Papacharissi, 2007; Trammell & Keshelashvili, 2005), rhetorical analysis (Herring *et al.*, 2004a; Miller & Shepherd, 2004), network analysis (Herring *et al.*, 2005; Marlow, 2006b), interviews (Milne, 2004; Nardi *et al.*, 2004b), and surveys (Marlow, 2006a; Viegas, 2005).

This dissertation focuses on American and Chinese bloggers' blog-maintenance intentions. Perseus's report found that two-thirds of blogs have not been updated in more

than two months. The report concluded that blogs, much like icebergs, are composed of a vast bulk of unseen material, in this case abandoned blogs (Perseus, 2003). Chinese blogs also have iceberg characteristics. According to the most recent CCNIC (China Internet Network Information Center) report, there were 17.49 million bloggers and 33 million blogs in China. More than 70% of blogs were “sleeping blogs”—blogs that had not been updated for more than one month (CNNIC, 2006). These statistics may imply that two-thirds of American and Chinese bloggers had low blog-maintenance intentions.

This dissertation investigates what influences the blog-maintenance intentions of American and Chinese bloggers. Specifically, the objects of this research are four-fold. First, evidence is established for the existence of online posting anxiety in bloggers. Second, measures of variables such as blogging self-efficacy, positive outcome expectations for blogging, negative outcome expectations for blogging, and online posting anxiety are developed and tested. Third, structural models are built to examine the factors that contribute to blog-maintenance intentions. Fourth, cross-cultural comparisons are made between American bloggers and Chinese bloggers. The original contribution of this dissertation is that it extends the social cognitive theoretical interpretation of communication anxieties to the computer-mediated communication realm.

1.2 Research Approaches

This current study proposes a structural model, based on social cognitive theory, the literature of anxiety, and blogs, to explain American and Chinese bloggers’ blog-maintenance intentions. The structural model is based on the assumptions that cognitive factors (blogging self-efficacy, positive outcome expectations for blogging, and negative

outcome expectations for blogging), blogging anxiety (online posting anxiety), and general anxiety tendencies (writing anxiety and social anxiety) will affect one another and, in turn, will predict blog-maintenance intentions. A combination of qualitative and quantitative research methodology was employed to test the structural models. Three studies were conducted.

Study 1 used in-depth interviews to examine the nature of blogging and American and Chinese bloggers' beliefs about blogging self-efficacy, positive outcome expectations for blogging, negative outcome expectations for blogging, and online posting anxiety. The goal of Study 1 was to generate measures for the four new concepts for later studies. Ten American bloggers and 16 Chinese bloggers were interviewed online.

Study 2 applied a pretest and posttest survey design to investigate the reliabilities and validities of the newly developed measures. A snowball sampling method was used to recruit bloggers in America and in China. Eighty-seven American bloggers and 70 Chinese bloggers participated in the pretest online survey. Fifty-eight American bloggers and 53 Chinese bloggers completed the posttest online survey after two weeks. A psychometric analysis was conducted, and the new measures demonstrated acceptable reliability and validity.

The purpose of Main Study was to test the proposed structural model described above. One hundred forty-five American bloggers and 178 Chinese bloggers were recruited with a purposive sampling method. The structural equation modeling technique was employed to test the proposed model and four alternative models. The original proposed model with blog-maintenance intentions as the dependent variable showed the best fit.

1.3 Research Outline

This dissertation is structured as follows. Chapter 2 introduces social cognitive theory, the theoretical framework for this research, including a review of Bandura's social cognitive theory. The theory's two key concepts are explored: self-efficacy and outcome expectations. Also, social cognitive perspectives of anxiety are discussed. Chapter 3 reviews significant prior research that is relevant to this study. Theories and studies about blogging, general anxiety, five types of specific anxiety (social anxiety, communication apprehension, writing apprehension, computer anxiety, and computer-mediated communication apprehension), and individualism-collectivism are reviewed. This literature serves as the bedrock of this dissertation. Chapter 4 presents the hypotheses and the structural model. Seven variables (writing anxiety, social anxiety, blogging self-efficacy, positive outcome expectations for blogging, negative outcome expectations for blogging, online posting anxiety, blog-maintenance intentions), one research question, and 16 hypotheses are presented. Chapter 5 briefly describes the methods of Study 1, Study 2, and the Main Study. Chapter 6 presents the results of the structural equation modeling testing. Chapter 7 provides a summary discussion, report of practical and theoretical implications, research limitations, and areas for future studies.

CHAPTER 2

SOCIAL COGNITIVE THEORY

2.1 Bandura's Social Cognitive Theory Overview

Social cognitive theory provides a comprehensive theoretical framework for understanding human behavior, environment, and social interaction (Bandura, 1986, 1989). Through symbolizing, vicarious experience, forethought, self-regulatory, and self-reflective capabilities, people can give meaning to their experiences, think through the consequences of a behavior without actually performing the behavior, learn from observation of others, anticipate outcomes of behaviors, and evaluate the anticipated outcomes (Bandura, 1986, 1989).

2.2 Main Constructs: Self-Efficacy and Outcome Expectations

Self-efficacy and outcome expectations are the two most important variables in social cognitive theory. People's judgments of personal efficacy are the most central and pervasive self-reference thoughts that influence human motivation, affect, and action (Bandura, 1997). Self-efficacy belief is "a person's judgment of his/her capability to organize and execute the actions required to attain designated types of performances" (Bandura, 1986, p. 391). It is a multidimensional construct that varies in strength, generality, and level (or difficulty) (Bandura, 1986). Perceptions of efficacy are influenced by four sources of information: performance accomplishments, vicarious

experiences, verbal persuasive messages, and physiological signals (Bandura, 1986, 1997).

Outcome expectations regulate behavior and influence self-perception. People can have both positive and negative expectations of the perceived consequences of a behavior (Bandura, 1997). Positive outcome expectations help to build self-esteem, self-satisfaction, and pride, while negative outcomes produce self-devaluation (Bandura, 1997). Courses of action that are likely to produce positive outcomes are generally adopted and used, while those that bring unrewarding or punishing outcomes are generally discarded (Bandura, 1999). Nevertheless, knowing what outcome will result from a given course of action is unlikely to spur an action if people doubt they can actually accomplish the action. Self-efficacy has an impact on outcome expectations. People's thoughts about their self-efficacy influence how well they perform and thus the outcomes they are likely to experience. Together, self-efficacy beliefs and outcome expectations influence people's thoughts, emotions, motivations, and actions, leading to specific behavioral choices and diverse outcomes.

Social cognitive theory has been proven to be a very efficient theory to examine effects and usage of computers and the Internet (Agarwal & Karahanna, 2000; Bandura, 2001; Bassam, 2006; Brown *et al.*, 2004; Compeau & Higgins, 1995; Compeau *et al.*, 1999; Durndell & Haag, 2002; Eastin, 2005; Fagan *et al.*, 2003; Hasan, 2003; Igbaria & Iivari, 1995; Johnson, 2005; LaRose & Eastin, 2004; LaRose *et al.*, 2001; LaRose *et al.*, 2005; LaRose *et al.*, 2003; Sam *et al.*, 2005; Thatcher & Perrewé, 2002). General and specific computer and Internet self-efficacy and outcome expectations measures have

been developed. Although Chen et al. promoted a general computer self-efficacy scale (Chen *et al.*, 2001), the work of Bandura and most other studies supported the notion that a specific self-efficacy measure would have better predictive value in a particular context (Agarwal *et al.*, 2000; Bandura, 1986; Marakas *et al.*, 1998).

2.3 A Social Cognitive View of Anxiety

The relationship between cognition and emotion has long been the subject of a scholarly debate. At one extreme it is claimed that emotion influences cognition (Izard, 1993); at the other, that cognitive appraisals are invariably necessary for the production of emotion (Bandura, 1986; Lazarous, 1991, 1995). Mathews and MacLeod supported the view that cognition influences emotion after they reviewed previous research (Mathews & MacLeod, 1994). The idea that emotion is embedded in and influenced by social contexts is also held by researchers (Averill, 1980; Bandura, 1986; Jakobs *et al.*, 1997; Lazarous, 1991, 1995; Manstead, 1991).

Social cognitive theory suggests that cognition and social environments influence emotion (Bandura, 1986). Bandura's early experiments provided evidence of this argument. The emotional reactions of two groups of people, those who were told that the associated painful outcomes had ceased and those who were not told that the threat no longer existed, were compared. The study found that induced awareness promptly eliminated fear arousal and avoidance behavior in the informed participants, while the uninformed lost their fear only gradually (Bandura, 1969). Bandura further showed that environmental cues can induce emotional reactions, while the impact of these cues on emotion depends on cognitive processing (Bandura, 1986). The judgment of the likelihood of aversive outcomes does not rely solely on reading external signs of danger

or safety. Rather, it involves a transaction between personal capabilities and potentially hurtful aspects of the environment.

Bandura defined anxiety as “a joint effect of two separate factors, visceral arousal and cognitive self-labeling of the internal state as anxiety” (Bandura, 1986, p. 191). This definition indicates that cognition plays a very important role in anxiety. Bandura further specified that self-efficacy and outcome expectation beliefs predict how well people cope with threats and how much anxiety they experience (Bandura, 1986; Bandura *et al.*, 1982). People experience high anxiety associated with tasks in which they perceive themselves to be inefficacious and with tasks that they envision as having negative outcomes (Bandura, 1986).

CHAPTER 3

LITERATURE REVIEW

This chapter reviews prior studies that are relevant to this dissertation. Literature exploring blogs and different types of anxiety is summarized. In the following section, the definition and typologies of blogs will be presented, followed by a discussion of the specific characteristics of blogs.

3.1 Blogging

3.1.1 Blog Definition and Typologies

A blog is a kind of frequently modified web page in which dated entries are listed in reverse chronological sequence (Herring et al., 2004a). Typologies have been developed to capture the differences of blogs. Krishnamurthy divided blogs into four quadrants with two axes: personal versus topical and individual versus community (Krishnamurthy, 2002). Blood proposed two types of blogs: filter-style blogs and journal-style blogs. Filter-style blogs are usually thematic blogs that link to and comment on online resources pertaining to a particular interest. Journal-style blogs, on the other hand, are made up of a blogger's thoughts or anecdotes from daily life (Blood, 2000). In a later article, Blood added another type of blogs—notebooks, which may contain either external or internal contents and are distinguished by longer, focused essays (Blood, 2002). Herring et al. applied Blood's typology to analyze 203 randomly sampled blogs. The study found that 70.4% of the sampled blogs were of the personal journal type, while the filter blogs only accounted for 12.6%. Knowledge blogs, the notebook type,

accounted for even fewer, at 3% of the sample (Herring et al., 2004a). Kawaura, Kawakami, and Yamashita (1998) differentiated four types of blogs: a record of fact type, an expression of sentiment type, a self-oriented type, and a relationship-oriented type. The study found that the bloggers who wrote reader-oriented blogs made more effort to have the existence of their diaries widely known than those who wrote self-oriented blogs. The bloggers predominantly expressing sentiment were more inclined to believe that readers were interested in people (the author) compared with bloggers predominantly expressing facts (Kawaura *et al.*, 1998).

3.1.2 Blogging Motivations

Kavanaugh et al. suggested that blogs represent self-organizing social systems that can help many persons to: (1) interact collaboratively, (2) learn from each other by exchanging ideas and information, and (3) solve collective problems. Blogs are tools for greater social interaction, informal discussion, and conversation (Kavanaugh et al., 2006).

Nardi et al. investigated the motivations behind blogging through ethnographic interviews with bloggers. The study found five principal motivations of blogging: documenting one's life, providing commentary and opinions, expressing deeply felt emotions, articulating ideas through writing, and forming and maintaining community forums (Nardi et al., 2004b). Trevino identified three blogging motivations by interviewing college students: the power over the website; the pull medium through which their audience actively accesses content; and the generally positive feedback from unknown readers, particularly on personal subjects (Trevino, 2005). Under the uses and gratifications approach, Li identified seven blogging motivations: self-documentation, improving writing, self-expression, medium appeal, information, passing time, and

socialization (Li, 2005). Two types of bloggers emerged from Marlow's survey of random bloggers: professional and social, with differing behavior and motivations. Professional bloggers, in the minority, tended to have larger audiences and weaker social relations with their audience. Social bloggers, on the other hand, had smaller audiences but more multiplex relationships (Marlow, 2006b). Efimova differentiated two types of blogging motivations: motivations to start a blog and motivations to maintain a blog. Getting hands-on experience with blogs, exploring opportunities for their use in a specific context (e.g., business, teaching, and knowledge management), a channel to communicate, and a need for expressing and publishing ideas are the motivations for starting a blog. For blog-maintenance motivations, improving knowledge and skills; sharing, evaluating and developing their ideas; and the social effects of blogging were most frequently identified. Comparing these motivations to those of starting a blog, blog-maintenance motivations highlighted the social effects of blogging, such as amplified networking, relation-building, and community-forming (Efimova, 2004).

The motivations identified in previous studies can be seen as the outcomes bloggers expect (LaRose & Eastin, 2004). Following this argument, the studies reviewed in this section showed that bloggers' outcome expectations vary with blog types. For personal diary bloggers, their blog outcome expectations are centered on communication, socialization, self-expression, and self-documentation.

3.1.3 Personal Media with Public Attention

Blogs are personal media with public attention. Blogging is an externalizing of the private mind in a public way. This new computer mediated communication (CMC) genre presents an interesting paradoxical combination of private and public sphere, which

allows the private domain to become public and privatizes a portion of the public sphere (MacDougall, 2005; Papacharissi, 2007; Rak, 2005; Rosen, 2004).

Blogs are personal media. Papacharissi's content analysis of a random sample of 260 blogs hosted by Blogger.com suggested that a blog is a self-reflective account that serves the purpose of personal expression and provides the perceived gratifications of self-fulfillment (Papacharissi, 2004). On the other hand, blogs "invite the audience's gaze" (Scheidt, 2006). Bloggers address their potential audiences in a very direct manner (Papacharissi, 2007).

Audiences can be a source of tension and threats. First of all, blogs' selectivity is low. Selectivity is the way communication can be exclusively targeted at one person or a group of people (Wijnia, 2004). Bloggers do not have the option of revealing posts to various subsets of individuals in their personal network (Park, 2003a). Second, blogs' audiences are heterogeneous. Li (2005) identified three types of audiences: targeted, expected, and actual readers. The author suggested that a blogger intends to write for some specific readers. However, due to the openness of the Internet, the blogger should expect some untargeted readers to be reached. In addition, the finally reached audiences can be another group of people (Li, 2005). Trevino indicated that misjudged or unknown audiences (parents, employers, future children, future political constituency) can lead to serious interpersonal and perhaps professional repercussions (Trevino, 2005).

Utilizing blogs, the personal media, bloggers have to maintain two delicate balances: the balance between satisfying different types of audiences and the balance between satisfying themselves and their audiences (Gumbrecht, 2004; Lenhart, 2005; Li,

2005). Sometimes, the equilibria might be disturbed (Bortree, 2005). Through ethnographic interviews, Lenhart found that (Lenhart, 2005):

Most bloggers feel a significant tension over their audiences. While on one hand a blog is a personal space, it is also a public space that is created with an expectation of an audience. Bloggers must come to grips with how much they want a readership, how much they want it to increase and how that desire impacts how they will express themselves online. And frequently, they find themselves conflicted, uncertain and uncomfortable, and yet simultaneously supported and affirmed by the thought of or the actions of virtual (actual or envisioned) visitors. Bloggers must continually navigate the line between being authentically themselves (or a version thereof), protecting their privacy and entertaining their readers (Lenhart, 2005, page 102).

Lack of privacy is the largest drawback of blogs. Wilnia argued that privacy is hard to maintain on blogs because of high stimuli richness and information complexity. (Wijnia, 2004). It is one of the reasons that people choose not to blog (Efimova, 2004). Viegas (2005) conducted an online survey to examine bloggers' subjective sense of privacy. The study found that bloggers worry about a number of privacy issues, ranging from minor embarrassments with family and friends to termination of their employment (Viegas, 2005).

Thus, blogs are personal media with public attention. Audiences are an important component of blogging. Audiences can be a reason for people to start blogging, to keep blogging, and to drop out. Audience is a source of positive outcomes (i.e., interactions and communications), negative outcomes (i.e., conflicts, frustrations, uncertainties, tensions, and privacy invasion), and anxiety. Therefore, blogs, as personal media with public attention, bring positive and negative outcome expectations and anxiety.

3.1.4 Blogging in Other Cultures

Studies have examined blogging practices in other cultures. Scheidt argued that blogs are socially and culturally constructed, which reflects ideas about how we interact within a culture and how that a culture influences us (Scheidt, 2006). Lento et al. (2006) used longitudinal data taken from Wallop, a blog system designed by Microsoft Research, to compare Chinese bloggers and non-Chinese bloggers' use patterns. The study found that Chinese bloggers contributed more content and remained active in the system longer than non-Chinese bloggers. The study argued that the reasons for the differences are the strength of social ties and preexisting social networks. Chinese bloggers had stronger social ties than non-Chinese bloggers. There were also more overlapping ties among their blog worlds and their real lives (Lento *et al.*, 2006). Su et al. investigated the influence of a regional culture on a blogging community. A multilingual worldwide blogging survey was conducted with 1,232 participants. The results suggested that overall, bloggers around the world share quite a bit in common in terms of how they experience community through their blogs. However, some differences do exist between Eastern and Western cultures. For example, Japanese bloggers' score was highly skewed toward not revealing identities, even with the use of aliases (Su *et al.*, 2005).

To summarize, previous studies discussed the definition and typologies of blogs. Blogs have been seen as personal media with public attention. The roles of audiences are highlighted in recent studies. Privacy is a concern bloggers have about blogging. Culture influences blogging practices. Synthesizing this research, the starting point of the present study are the characteristics of blogs. Blogs are a new Internet application that has unique formats and features, producing both positive and negative expectations and anxiety

concerns. In the following section, the focus will switch from the medium to the user. Walther (1997) posited that computer mediated communication research should not focus mainly on the features of the medium, but on the personal factors of the users. Specifically, what needed to be explored in whether certain types of individuals are inclined, or not inclined, to blog. In the following section, literature of anxiety will be reviewed because bloggers' trait and state anxieties are important determinants of their blog-maintenance intentions.

3.2 Anxiety—an Introduction

In this section, reviews of general anxiety theories and measures will be introduced. Five types of anxiety that are related to this study—social anxiety, communication apprehension, writing apprehension, computer anxiety, and computer-mediated communication apprehension—will then be presented.

We will see that from the social cognitive perspective developed here, anxiety and blogging are related in that anxiety is a personal factor that predicts blogging, a comparatively new online practice. To confront the present problem of blog-maintenance intentions, state and trait anxieties might act together in the following ways: generally anxious individuals may avoid blogging in the first place, and for those who decide to set up a blog because of curiosity or positive outcome expectations, their situational congruent anxieties will generate more negative outcome expectations and decrease their blog-maintenance intentions.

3.2.1 Anxiety Definitions

Although the topic of anxiety has prompted voluminous research, differing methodological formulations, and some attempts at comprehensive theories, there has

been little consensus as to exactly what anxiety is and how it can be reliably measured. After summarizing the literature about anxiety, Spielberger and Sarason concluded that anxiety has been conceptualized as a stimulus for behavior, as a learned drive, as a personality variable, and as a complex response (Spielberger & Sarason, 1991). Anxiety has been conceptualized as an independent variable (stimulus), an intervening variable (drive, personality trait), and a dependent variable (response). Consistent with the social cognitive perspective, anxiety is defined as a joint effect of two separate factors, visceral arousal and cognitive self-labeling of the internal state as anxiety (Bandura, 1986, p. 191). Bandura's definition of anxiety suggested that anxiety is a process through which individuals cognitively label an arousal as anxiety after experiencing visceral arousal. This definition does not indicate that anxiety should be measured as a two-factor concept. In fact, Bandura has never produced a two-factor anxiety measure.

3.2.2 Anxiety Typologies

A trait-state typology has been applied to examine anxiety (Spielberger *et al.*, 1983). Anxiety as an emotional state (A-State) is characterized by subjective, consciously perceived feelings of tension, apprehension, and nervousness accompanied by or associated with activation of the autonomic nervous system (Spielberger, 1972, 1985; Spielberger & Sarason, 1991). Trait anxiety (A-Trait) refers to relatively stable individual differences in anxiety proneness and in the disposition or tendency to perceive a wide range of situations as threatening and to respond to these situations with differential elevations in state anxiety (Spielberger, 1972, 1985; Spielberger & Sarason, 1991). The trait approach minimizes the role of situational and environmental factors to maximize the role of individual internal differences and structures on behavior. On the other hand,

the state approach underlines the influence of situational factors. The state paradigm suggested that relatively stable and consistent individual attributes exert little influence on behavior.

Studies have framed the trait-state distinction as the relative importance of distal and proximal influences in explaining behavior (Brown et al., 2004). This perspective argued that there is a continuum from distal individual differences that are thought to be trait-like to more proximal individual differences that are thought to be state-like. Proximal constructs serve as mediators for distal constructs because proximal constructs are more temporally proximal to behavior (Chen *et al.*, 2000; Kanfer, 1990). Rosenberg examined the interaction between trait self-esteem and state self-esteem. The researcher made a distinction between baseline global self-esteem and barometric self-esteem that represents short-term fluctuations over situations and time. This model suggested that the barometric state is a function of the baseline trait (Rosenberg, 1986). This model was supported by Cole et al.'s trait and state linear model. Cole and colleagues conceived a state as a latent variable that can be represented by one or more manifest variables at time *t*. A state can be decomposed into trait (*T*) and occasion (*Ot*) factors. A trait is a completely stable person factor. The occasion factor (*Ot*) represents the situational circumstances impinging on the person at the time of testing plus the person-situation interaction (Cole *et al.*, 2005).

In addition to the trait and state typology, researchers defined a new type of anxiety: situation specific trait anxiety (Horwitz, 2002; Martens *et al.*, 1990; Spielberger, 1972). Spielberger suggested that "in general, situation-specific trait anxiety measures are

better predictors of elevation in A-state for a particular class of stress situations than are general A-trait measures” (Spielberger, 1972, p. 490).

Studying communication apprehension, McCroskey proposed a new typology. Based on his typology, there are four types of communication apprehension: trait-like, generalized-context, audience-based, and situational communication apprehension. McCroskey defined communication apprehension as “an individual level of fear or anxiety associated with either real or anticipated communication with another person or persons” (McCroskey, 1982, p. 148). Trait-like communication apprehension is a relatively enduring, personality- type orientation toward a given mode of communication across a wide range of contexts. Generalized-context communication apprehension is a relatively enduring, personality-type orientation toward communication in a given type of context. McCroskey and Richmond (1980) further identified four general communication contexts: public speaking, meetings, small groups, and dyadic situations (McCroskey, 1984). Audience-based communication apprehension is a relatively enduring orientation toward communication with a given person or group of people. Situational communication apprehension is a relatively transitory orientation toward communication with a given person or group (McCroskey, 1982; Richmond & McCroskey, 1998).

The perspective of the present research is an integration of the trait and state perspectives and social cognitive theory. Specially, this research suggests that occasion factors have influence on both trait and state variables. Situational trait-like variables and situational state-like variables are more accurate terms to describe these variables than traits and states. Moreover, following the arguments of Cole et al. (2005), Chen et al. (2000), and Kanfer (1990), this research posits that situational trait-like variables

determine situational state-like variables. For example, social anxiety, a situational trait-like variable which will be introduced in the following section, will predict online posting anxiety, a state-like variable for blogging.

3. 3 Cognitive Perspectives of Anxiety

The cognitive perspective of anxiety is the perspective applied in this dissertation. Cognitive models of anxiety suggested that anxiety is a result of cognitive processes (Arnold, 1960; Bandura, 1986; Lazarous, 1991, 1995; Lazarus, 1991, 1995; Lazarus *et al.*, 1970; Lazarus & Folkman, 1984; Mandler, 1984; Reisenzein, 2001; Roseman *et al.*, 1996; Scherer *et al.*, 2001; Spielberger, 1972; Spielberger & Sarason, 1991). Lazarus and associates have developed what is perhaps the most systematic and extensive formulation of the cognitive perspective of anxiety. They employed the concepts of primary appraisal, secondary appraisal, and reappraisal while arguing that anxiety is a function of these appraisals. Their model emphasized the relationship between a person and his/her environment, which took into account characteristics of the person on the one hand, and the nature of the environmental events on the other. For this person-environment relationship, cognitive appraisal is a critical element (Lazarus & Folkman, 1984).

Other cognitive models also underscored cognitive influences of anxiety. Mandler's interruption theory posited that anxiety is generated in a process when ongoing cognitive activities are interrupted. This interruption produces a diffuse autonomic discharge. The autonomic discharge further results in detailed appraisal of the source of the interruption, which is then evaluated either positively or negatively, depending on the results of the appraisal. A negative evaluation and high arousal will generate anxiety (Mandler, 1984). Similarly, Spielberger argued that the appraisal is the most critical point

in the process of anxiety generation (Spielberger, 1985). Beck suggested that “cognitive schemata,” the automatic thoughts and images which are generated from distorted information processing, trigger inappropriate motor, physiological, and affective components of anxiety responses (Beck, 1993; Beck *et al.*, 1985). To summarize, cognitive perspectives of anxiety suggest that: (1) environmental stimuli lead to cognitions; (2) cognitions generate anxiety; (3) anxiety brings forth behavior (e.g., avoidance) (Brown et al., 2004).

Thus, we can integrate this perspective with social cognitive theory as follows: environmental cues, together with cognitive appraisal (i.e., assessments about personal skills, capabilities, and possible outcomes), will induce anxiety, which in turn will generate avoidant behavior. In the particular case of blogging, these theories might explain the anxiety bloggers may experience. For example, the novelty and uncertainty of blogs and the heterogeneity of the audience, together with low self-efficacy and negative outcome expectations, will induce anxiety about blogging and will create low blog-maintenance intentions.

3. 4 Integrationist Perspectives of Anxiety

Before further discussing the integrationist perspectives of anxiety, it is important to differentiate between two approaches: anxiety as a theoretical framework and anxiety as a pure phenomenon. Anxiety as a phenomenon should be a pure affective arousal index. Many anxiety indices, however, consist of cognitive, affect, and behavior components. This approach is problematic because “asking whether anxiety influences behavior would be to ask whether behavior influences itself” (Bandura, 1986, p. 190). However, anxiety theoretical frameworks can embrace behavior, cognition, and other

factors to explain the anxiety phenomenon. The following introductions will focus on theoretical frameworks that explain the anxiety phenomenon.

Anxiety theorists now see the necessity for an integrationist perspective that encompasses neurobiological, behavioral, and cognitive subsystems (Barlow, 2002). The process of anxiety is extremely complex and involves a number of different measurable components (Spielberger & Sarason, 1991). Asmundson and colleagues suggested that four components tend to be involved in anxiety: information processing biases, physiological reactions, safety-seeking behaviors, and affective changes (Asmundson *et al.*, 2002). Horwitz suggested that anxiety has three components: cognitive, physiological, and behavioral.. The cognitive component is a persistent, chronic sense of uneasiness or dread from negative perceptions about a present or future event or interchange with a person. The concurrent physiological process of alarm and activation is marked by changes in neural chemistry, among other responses. The behavioral response is often manifested in an emergency fight-or-flight reaction (Horwitz, 2002).

To explain blog-maintenance intentions, the mechanism could work as follows: cognitive factors and bloggers' general tendencies to be uneasy can generate online posting anxiety. This online posting anxiety, together with the cognitive factors, will influence blog-maintenance intentions.

3. 5 Anxiety in Different Cultures

Cultural differences are heuristic in the present context because they can influence anxiety both directly and indirectly through cognitive components. Examining the similarities and differences of anxiety across cultures can advance anxiety theories, since

the salience and importance of various factors (cognitive, affective, and behavioral factors) in influencing anxiety can be discovered.

Anxiety is shaped by culture (Adamopoulos & Kashima, 1999; Barlow, 2002; Markus & Kitayama, 1991; Wierzbicka, 1999). Individuals in all cultures are apprehensive, worried, fearful, and aroused. But the objects of apprehension, the sources of fear, and the specific attributions these individuals make are culture-specific (Barlow, 2002). Anxiety should be studied as a subjective feeling as well as a social product that is influenced by social environment (Adamopoulos & Kashima, 1999). Wierzbicka elaborated that “feelings are subjective... they are based on certain recurrent thoughts—cognitive scenarios shaped by the particular culture...” (Wierzbicka, 1999, p. 306). Culture offers a set of “cultural scripts” that tell people how to feel, how to express their feelings, and how to think about their own and other people’s feelings (Wierzbicka, 1999). Markus and Kitayama (1991) suggested that anxiety experiences may differ fundamentally between cultures. The ways of thinking and talking about anxiety in different cultures and societies exhibit considerable diversity (Markus & Kitayama, 1991). Individuals’ representations of a threat and their selection and evaluation of coping procedures reflect the attitudes and beliefs embedded in their social and cultural environment. This environment includes families, friends, mass media, socially defined roles, and the linguistic terms used to label and describe anxiety (Marks *et al.*, 2005). For instance, a given degree of arousal under conditions of potential failure, requiring another’s assistance, might be diagnostic of “performance anxiety” in an individualist culture while of a “feeling of indebtedness” in a collectivist culture (Adamopoulos & Kashima, 1999).

In summary, in these sections, the theoretical frameworks that have been applied to examine anxiety have been reviewed. In the following sections, five specific types of anxiety will be reviewed. The various types are important because they are pertinent to the topic of the current research—blog-maintenance intentions. Specifically, in the context of blogging, each is important because blogging encompasses social, communication, writing, and computer practices. Social anxiety will be introduced first. By integrating these perspectives, our understanding of blog-maintenance intentions can be advanced.

3. 6 Social Anxiety

Holt et al. identified four social situations that may generate anxiety. These situations are formal speaking/interaction, informal speaking/interaction, assertive interaction, and observation by others (Holt *et al.*, 1992). What is common about each of these situations is that an individual is required to do something while knowing that others will be watching and, to some extent, evaluating his/her actions (Barlow, 2002). Beck et al. suggested that social anxieties are concerned with one's exaggerated fear of being the focus of attention and devaluation by another person or persons (Beck et al., 1985).

Social anxiety has obvious relevance to blogging because bloggers are observed and evaluated by others on their blogs. It is especially relevant to one particular type of blogging discussed earlier, the personal journal type, because the bloggers, instead of some media links or facts, are the focus of the audience's attention.

Patterson and Ritts conducted a meta-analysis to investigate the relationship between social and communicative anxiety and specific physiological, behavioral, and

cognitive reactions. The study found that social and communicative anxiety was more strongly related to the cognitive measures than to the behavioral and physiological measures. The effect sizes of self-efficacy and negative thoughts were 1.56 and 1.18, which can be identified as large effect sizes based on Cohen's criteria (Cohen, 1977). The results supported a cognitive view of social anxiety. A variety of negative self-focused cognitions may be at the core of social and communicative anxiety. Schneier and Welkowitz's study supported this conclusion. Their study found that socially fearful people have been found to think differently from others. They have more negative thoughts about their performance, compared to subjects with general anxiety and those without anxiety, and consistently underestimate the quality of their performance (Schneier & Welkowitz, 1996). Other studies confirmed the negative relationship between social anxiety and self-efficacy beliefs (Leary & Kowalski, 1995). People with social anxiety think of themselves as less skilled or efficacious (High, 2006).

Thus, social anxiety is relevant to blog-maintenance intentions because of exaggerated fear of being the focus of attention. In the social cognitive view, social anxiety may be interpreted as visceral arousal caused by negative self-focused cognition, i.e., low self-efficacy and negative outcome expectations, in social situations. It should be noted that self-efficacy and outcome expectation vary in the dimension of generality. The social self-efficacy and outcome expectations that determine social anxiety are more general than blogging self-efficacy and outcome expectations and more specific than general self-efficacy and outcome expectations. Self-efficacy and outcome expectations directly precede anxiety at the same level of generality.

3.7 Communication Anxiety

McCroskey defined communication apprehension as “an individual level of fear or anxiety associated with either real or anticipated communication with another person or persons” (McCroskey, 1982, p. 148). Self-efficacy and outcome expectations are related to communication anxiety (Ayres & Hopf, 1985; Ayres & Schliesman, 2002; Lucchetti *et al.*, 2003; McCullough *et al.*, 2006; Miller, 1987). Phillips viewed a reticent communicator as an unskilled or incompetent communicator (Phillips, 1980). Burgoon and Hale (1983) showed that people who are “unwilling to communicate” perceive communication as unprofitable (Burgoon & Hale, 1983). Greene and Sparks (1982) described three characteristics of apprehensive individuals: (1) perceptions of low personal competency, (2) an inability to identify appropriate social behavior, and (3) anticipation of negative outcomes of communication (Greene & Sparks, 1982). These researchers developed a cognitive process model of communication apprehension one year later. The model suggested that communication apprehension arises when an individual is unable to identify the behavior that is expected to lead to the accomplishment of interaction goals (Greene & Sparks, 1983). Ayres (1997) proposed a component theory of communication apprehension. He suggested that communication apprehension in a given situation is a product of the interaction between self-perception of communication competence, negative evaluation, and motivation (Ayres, 1997).

Thus, communication apprehension might be relevant to the study of blog-maintenance intentions because communication is an important component of blogging. Communication apprehension can be an obstacle that bloggers must overcome in order to keep blogging.

3.8 Writing Anxiety

Writing anxiety is potentially relevant to the problem of blog-maintenance intentions because blogging is a form of text communication. Bloggers may experience writing anxiety when they start to write a post, work on a post, or finish a post. They may quit blogging altogether because they worry about the evaluations of their blog writings.

The most studied writing-related anxiety is writing apprehension (Daly, 1978). Daly (1978) defined writing apprehension as an individual difference characterized by a general avoidance of writing and of situations perceived by the individual to potentially require some amount of writing, accompanied by the potential for the evaluation of that writing. It is obvious that Daly defined writing apprehension as a behavioral tendency (approach or avoidance). He further explained that a person high in writing apprehension will perceive writing as unrewarding and will consequently seek to avoid it. If such an individual cannot avoid such situations, he or she will experience abnormal amounts of anxiety.

Contexts are highlighted by many writing anxiety researchers. Five situational characteristics were identified to affect situational state writing apprehension: evaluation, novelty, ambiguity, conspicuousness, and previous experience (Daly & Hailey, 1984).

Self-efficacy and outcome expectations are pertinent to writing apprehension. Mabrito argued that a history of perceived negative evaluations and the prospect of having one's writing evaluated in a public forum form the basis of writing apprehension (Mabrito, 1989). Crumbo's study confirmed the negative relationship between writing self-efficacy and writing apprehension (Crumbo, 1999). Corbett-Whittier argued that the most common causes of writing apprehension are self-efficacy beliefs and past

educational experience (Corbett-Whittier, 2004). A review by Boice found that writing anxiety is induced by the presence of internal censors that act to immobilize the writer, who has accepted and exaggerated negative comments from teachers and other authority figures. These censors cause the writer to reject what he/she might write before and during the writing process (Boice, 1993). Within social cognitive theory, the internal censors Boice described can be referred to as efficacy beliefs or outcome beliefs. Pajares and Johnson grounded their theory of writing anxiety in Bandura's social cognitive theory. They found that writing self-efficacy and writing outcome expectations, together with writing anxiety, influence students' writing performance (Pajares & Johnson, 1994).

Through the socio-cognitive lens, writing anxiety can be seen as a visceral arousal in writing situations. People who experience this arousal label it anxiety because of their low writing self-efficacy, low positive outcome expectations for writing, and high negative outcome expectations for writing. Again, the level of generality is important here. Writing anxiety is directly determined by writing self-efficacy and outcome expectations.

3.9 Computer Anxiety

Social anxiety, communication apprehension, and writing anxiety are task-oriented anxieties. In this section, the review will be focused on computer anxiety, a media-related anxiety.

Computer anxiety is defined as fear of computers or the tendency of a person to be uneasy, apprehensive, and phobic towards current or future use of computers in general (Al-Khaldi & Al-Jabri, 1998; Cambre & Cook, 1985; Igbaria, 1993; Loyd &

Loyd, 1985). Rosen, Sears, and Weil (1993) defined three types of computer-anxious individuals: (1) anxious computerphobics who exhibit signs of anxiety reactions (e.g., sweaty palms, heart palpitations, headaches, and so forth) when dealing with computers; (2) cognitive computerphobics who, despite a calm exterior look, are internally fearful of computers and continually think negatively about dealing with computers; and (3) uncomfortable users who are slightly anxious merely because of lack of information about computers.

Beckers and Schmidt (2001) proposed a social cognitive model of computer anxiety. Their model was comprised of six factors: (1) computer literacy, (2) self-efficacy, (3) physical arousal in the presence of computers, (4) affective feelings towards computers, (5) positive beliefs about the benefits for society of using computers, and (6) negative beliefs about the dehumanizing impact of computers.

Computer anxiety research has two limitations: (1) most of the research was conducted in the late 1980s and early 1990s, with the majority of the research following this period seeking to replicate or extend the original findings (Hemby, 1998); and (2) most of the scales used to measure computer anxiety have no explicit psychological or psycho-sociological theory basis.

The relevance of computer anxiety to blog-maintenance intentions is not immediately apparent, however. Computers are the exact tool for blogging. Computer anxiety may make people avoid computers in general and blogging specifically. Through social cognitive theory, it is possible to clarify some of the confusion of the computer anxiety construct by interpreting its varied dimensions in terms of social cognitive theoretical variables. For example, in the work of Rosen et al. (1993), three types of

computer-anxious individuals were summarized: (1) those who experience a visceral arousal when dealing with computers; (2) those who perceive negative outcomes; (3) those who have low computer self-efficacy.

3.10 A Social Cognitive Critique of Communication Apprehension, Writing Apprehension, and Computer Anxiety

Communication apprehension, writing apprehension, and computer anxiety studies have made significant contributions. Based on the theoretical principles of social cognitive theory, however, these studies have limitations.

McCroskey's communication apprehension studies omit an important concept that is particularly relevant to communication—self-efficacy. Communication, no matter whether in public speaking, meetings, small groups, or dyadic situations, requires skills to exchange information, encode/decode verbal and nonverbal cues, and interact with people with different communication goals.

The trait-state conceptual definitions of communication apprehension, writing apprehension, and computer anxiety are ambiguous as well. McCroskey's view of communication apprehension changed from a state view to a trait view. However, McCroskey's PRCA-24 measurement approach betrays the researcher's trait view. PRCA-24 looks at public speaking, meetings, small groups, and dyadic situation anxieties to form a communication apprehension trait measure. This approach was criticized by Bandura. Using aggression as an example, Bandura suggested that lumping different kinds of physical aggression, verbal aggression, and oppositional behavior into an indefinite conglomerate can boost correlations but yields indeterminate or empty predictions. "To be able to predict through aggregation that individuals will sometime,

somewhere, do something within a wide assortment of acts is of no great interest.”
(Bandura, 1986, p. 10)

The same argument can be applied to the PRCA-24. Mixing four different communication situations obscures the understanding of psychological functioning and reduces the predictability.

Daly originally posited writing apprehension to be a trait. In later studies, Daly recognized the important role of individual writing occasions. Daly abandoned the trait view of writing apprehension, and defined it as a behavioral tendency. This is problematic, too. As Bandura suggested, using the behavioral tendency to explain behavior is the problem of circularity.

Research involving computer anxiety did not specify whether computer anxiety is a trait or a state. However, the most used definition of computer anxiety is very similar to McCroskey's communication apprehension definition. It is reasonable to argue that these researchers perceive computer anxiety as a trait. Interestingly, many computer anxiety measures comprise different areas of computer use [see aforementioned computer and Internet anxiety scales (Chou, 2003; McInerney *et al.*, 1999; Mcinerney *et al.*, 1994; Presno, 1998; Rosen & Weil, 1995)]. Although this approach is in line with social cognitive theory, it is problematic. First, the measures are not mutually exclusive. Additionally, rapid changes in computers and the technological environment may make these scales not relevant for future computer and Internet use studies. In fact, the majority of computer and Internet measurement instruments were developed in the 1980s and early 1990s. Marcoulides and colleagues (2004) argued that people may be experiencing lower levels of computer anxiety, or at least different forms of computer anxiety, than

they were in the past. It is obvious that certain forms of computer and Internet use (e.g., email and Word) probably do not induce intensive anxiety in users anymore. However, newer forms of computer use (e.g., podcasting and blogging) may generate anxious experiences.

3.11 Social Anxiety, Communication Anxiety, Writing Anxiety, and New Media

Social anxiety, communication apprehension, and writing apprehension have been explored in the new media environment (Bline, Lowe, Meixner, Nouri, & Pearce, 2001; Campbell & Neer, 2001; Carlson & Wright, 1993; Chelley & Larry, 2002; Clarke, 1991; Fishman, 1997; Hartman et al., 1991; Karahanna, Ahuja, Srite, & Galvin, 2002; Leen & Ramayah, 2006; Mabrito, 1989; Mabrito, 2000; Mazur, Burns, & Emmers-Sommer, 2000; McCarson, 2005; McDowell, 1998; Reed, 1990; Reinsch, 1985; Scott & Rockwell, 1997; Scott & Timmerman, 2005; Shaver, 1990; Sugiyama, 2003; Wright, 2000b). Some researchers have suggested that there is a negative relationship between anxiety and new media usage (**Campbell & Neer, 2001; Kivela, 1996; Madell & Muncer, 2006; Mazur et al., 2000; Reinsch, 1985; Wright, 2000**); other researchers have found no relationship between them (Davis, 2003; Patterson & Gojdycz, 2000; Phinney, 1991; Sugiyama, 2003), and some have even argued for a positive one (Fuller et al., 2006; Hartman et al., 1991; McDowell, 1998; Patterson & Gojdycz, 2000; Reinsch, 1985; Wright, 2000). Researchers have also examined various directions of the relationship between anxiety and new media usage. Anxiety has been applied both as an independent variable (i.e., the effects of anxiety on new media usage) and a dependent variable (i.e., the effects of new media on anxiety).

Not all these studies are directly relevant to blog-maintenance intentions; here only relevant ones are reviewed. Starting with the studies that argue that writing apprehension and communication apprehension will decrease CMC tools usage, this section will then introduce the studies suggesting that new media practices can be employed as a method to research social anxiety, communication apprehension, and writing apprehension. These conflicting views are then integrated to propose the existence of online communication anxiety.

Harris and Grandgenett surveyed 189 randomly selected teachers with accounts on Tenet (Texas Education Network) and examined the relationship between writing apprehension, communication apprehension, computer anxiety, and network use. Network use was measured by one year of logins and online time on Tenet. These researchers found that subjects with high writing apprehension tended to use Tenet less than those with lower writing apprehension. Communication apprehension and computer anxiety did not correlate with Tenet use. Therefore, the researchers concluded that writing apprehension was the main anxiety factor that affected Tenet use (Harris & Grandgenett, 1996).

Fishman's study of high school students confirmed this argument (Fishman, 1997). The researcher explored the relationship between communication apprehension, writing apprehension, and CMC tool use. The CMC tools examined in the study were email, Usenet news groups, collaborative groupware, and videoconferencing. The study found a significant negative correlation between writing apprehension and the use of Usenet news, and a marginally significant negative correlation between writing apprehension and collaborative groupware and overall CMC tool use. Writing

apprehension was not significantly correlated with email use and videoconferencing use. Fishman argued that the nature of the tools decided the strength of the relationships. Videoconferencing uses video, instead of text, to communicate. It is not relevant to writing apprehension. For the rest of the CMC tools, email is the most private of the CMC tools, followed by semiprivate collaborative groupware and then by Usenet news, the least private tool. Hence, the author suggested that the private levels of the CMC tools were related to writing apprehension. The students who exhibited a high degree of writing apprehension were less likely to use more public CMC tools (Fishman, 1997). Brown and colleagues found that communication apprehensives have negative attitudes toward using email and avoid using it (Brown et al., 2004).

Studies also have argued that new media can provide a low-anxiety environment for writing, interaction, and communication (High, 2006; Lea & Spears, 1995; Loch *et al.*, 2003; Parks & Floyd, 1996; Wright, 2000). Scott and Rockwell interpreted their nonsignificant relationship between writing apprehension and text-based technologies use to indicate that writing-apprehensive students may not experience many difficulties in using new text-based technologies, such as email, online discussion groups, and word processing, because these devices are less personal and less public than other types of written communications (Scott & Rockwell, 1997). Campbell et al. compared online chat users with nonusers on social anxiety and found that, after controlling for time online, chat users displayed significantly less social fearfulness than nonusers of chat. The researchers suggested that socially anxious individuals may use online chat as a low-risk social approach and an opportunity to rehearse social behavior and communication skills (Campbell *et al.*, 2006). Hiltz and Turoff contended that CMC is better organized than

natural conversations because users have more time to think about what they are writing (Hiltz & Turoff, 1993). Walther argued that socially anxious people can have more control over the interactions and present themselves better online. The controllability and anonymity of computer-mediated communication can help socially anxious people plan ahead and feel less anxious (Walther, 1996). Many of the situational factors that can foster feelings of anxiety in social situations (e.g., having to respond on the spot, feeling under visual scrutiny) are absent in online interactions. People tend to feel more comfortable online (Amichai-Hamburger & McKenna, 2006).

Empirical studies confirmed these arguments. Cooper and Sportolari noted that shy people carefully plan out their communication in computer-mediated communication contexts, thus gaining more confidence in their online interactions (Cooper & Sportolari, 1997). Kivela found that as many as 72% of the participants felt more confident about expressing their ideas in the electronic environment because they had more time to think and organize their ideas before sharing them with their peers (Kivela, 1996). Mabrito found that high-apprehensive writers contributed to and initiated more topics of discussion and felt more comfortable participating in electronic discussions with unknown audiences than they did when communicating with familiar audiences (Mabrito, 1989; Mabrito, 2000). Karahanna et al. suggested that communication apprehensives embrace the Internet as a way to avoid face-to-face communication (Karahanna et al., 2002). Peter and Valkenburg surveyed 687 adolescents to investigate how social anxiety influences adolescents' perceptions of Internet communication. The results suggested that socially anxious adolescents valued the controllability of Internet communication more than adolescents who are not socially anxious. Compared with adolescents with low

social anxiety, adolescents high in social anxiety perceived Internet communication to be more reciprocal, broader and deeper than face-to-face communication (Peter & Valkenburg, 2006). Moreover, socially anxious people do manage their impressions better online. McKenna et al. compared the ratings that socially anxious people received from their interaction partners after face-to-face and Internet communication. Socially anxious participants were viewed as more likeable and extroverted when they interacted online than in face-to-face communication situations (cited in Amichai-Hamburger & McKenna, 2006). High's (2006) study reported similar findings: highly anxious individuals were perceived to be significantly less anxious after computer-mediated conversations than following face-to-face interactions (High, 2006).

The literature presented conflicting results. One reason for the discrepancies are the differing foci of the studies. Some studies attended to general Internet characteristics (Hiltz & Turoff, 1993; Walther, 1996), while others looked at a specific type of CMC tools, such as email (Fishman, 1997; Scott & Rockwell, 1997; Brown et al. 2004), online chatting (Campbell et al, 2006; High, 2006), online groups (Fishman, 1997; Mabrito, 2000; Amichai-Hamburger & McKenna, 2006), or video conferencing (Fishman, 1997). The characteristics of the tasks, e.g., synchronicity, modality of the media, publicity, controllability, and anonymity, are important factors that influence the relationship between communication apprehension, writing apprehension, social anxiety, and CMC use. Additionally, these studies employed various measures of CMC use. For example, Fishman used the number of messages posted as the measure for email use and online group use. Scott and Rockwell used a single question for each tool to measure the

likelihood of using email and online groups. The different tasks and measures might be a reason for the conflicting findings.

More important, however, the majority of the studies failed to present a sound theoretical framework that can explain the causal relationships between anxiety and CMC use. In these studies, the theoretical base was the literature of communication apprehension, writing apprehension, and computer anxiety, which has theoretical shortcomings as mentioned above.

How might the conflicting results reviewed above be reconciled? Social cognitive theory provides a provisional answer that forms the basis of the present research. CMC use, a type of online behavior, is jointly determined by personal factors (cognitive factors and anxiety) and environmental cues. Two types of personal factors need to be distinguished: offline personal factors (offline self-efficacy, offline outcome expectations, and offline anxiety) and online personal factors (online self-efficacy, online outcome expectations, and online anxiety).

Offline personal factors will precede online personal factors because the online context is a relatively novel context. Bandura posited that people construct outcome expectations from observed conditional relations between environmental events in the world around them and past related outcomes. Moreover, two sources of self-efficacy are mastery experiences and emotional states. It is proposed that when people face relatively novel online situations, their previous offline experiences, beliefs, and anxiety, including offline anxiety in social, communication, and writing situations, will influence their perceptions and beliefs related to online situations. Offline social-, communication-, and

writing-anxious individuals may anticipate similar anxious experiences when they are in online correspondent situations.

Environmental factors are the other important determinant of behavior. The characteristics of the Internet, such as anonymity, interactivity, and asynchronicity, will help to shape online personal factors and behavior. Individuals may form new systems of online beliefs and anxiety that are different from their offline systems. For example, those who are social apprehensive offline may develop high online social self-efficacy and positive outcome expectations because they have better control on the Internet. These high online social efficacy and positive outcome expectations will decrease their online social anxiety. Online environment cues can help offline anxious individuals to recognize the specific advantages of online socialization, communication, and writing, and further form positive online experience, perceptions, and beliefs. These new beliefs decrease their anxiety online. The Internet becomes a channel to decrease social, communication, and writing anxiety.

In summary, human functioning should be analyzed as socially interdependent, richly contextualized, and conditionally orchestrated within the dynamics of various societal subsystems and their complex interplay (Bandura, 2001). Previous studies examining CMC use and anxiety represented only part of the picture. They concentrated either on environmental cues or on personality characteristics. These studies failed to capture the triadic causations among environmental cues, personal factors, and behavior. None of the studies pointed out the importance of self-efficacy and outcome expectations on behavior, nor did they explain the mechanism of the interactions among offline and online environmental, behavioral, and personal factors.

Another line of research that reflects social cognitive views is new online anxiety construct development. Bandura suggested that a situational-congruent concept is a more salient predictor of behavior in a given situation (Bandura, 1986). In line with this principle, scholars have developed new constructs that target apprehension when communicating and writing online.

In his dissertation, Clarke developed a concept he called computer-mediated communication apprehension (CMCA). It is defined as an individual's level of fear, apprehension, or anxiety associated with using or the anticipation of using computers as a medium to interact with another person or persons (Clarke, 1991). This definition is very similar to McCroskey's definition of Communication Apprehension--"an individual level of fear or anxiety associated with either real or anticipated communication with another person or persons" (McCroskey, 1982, p. 148)". Although Clarke defined CMCA as a trait apprehension, it is a situational apprehension because it is a computer-mediated communication situational apprehension. Flaherty and colleagues suggested that CMCA is more state-like because it is computer specific (Flaherty *et al.*, 1998). Another limitation of Clarke's study was that it mainly focused on email use apprehension. The only correlation reported in the study was the significant negative correlation between CMCA and email use, which served as the evidence of the concurrent validity of CMCA.

Additionally, Clarke's CMCA measure was confounded with self-efficacy and outcome expectations. The factor analysis results show that the CMCA scale was not a pure measure of apprehension. The three dimensions of the CMCA scale were: (1) confidence in one's abilities to use a computer to communicate (i.e., self-efficacy); (2) interest in using a computer to communicate (i.e., outcome expectations), and (3) privacy

concerns (i.e., negative outcome expectations) (Clarke, 1991). These three dimensions are possible sources/causes of CMCA.

Wright examined online communication apprehension (OCA) and its impact on online support group use. The study failed to find a significant correlation between OCA and time spent on online communication. Moreover, the study did not provide a definition of OCA. OCA was measured using PRCA-24 items, while asking respondents to think about online relationships when responding (Wright, 2000).

Brown and colleagues developed a concept called computer-mediated communication anxiety (CMC anxiety), which is defined as an individual's level of fear or apprehension associated with the actual or anticipated use of information technology to communicate with others (Brown et al., 2004). Again, CMC anxiety mainly focused on email anxiety. Brown's CMC anxiety measure consisted of five items, four of which concerned email. Only one item measured listserv anxiety [I look forward to using email; I would like to take courses in which email use is required; I am afraid of sending an email message to a large group of people; I would be comfortable sending email messages that I know a lot of people will read; I would be comfortable sending messages to a listserv (where a large number of people will read them)] (Brown et al., 2004).

Scott and Timmerman (2005) introduced another version of CMC apprehension to examine the use of new communication technologies in the workplace. They did not give a specific definition of this concept. They generally described CMC apprehension as anxiety about communicating through new communication technology (Scott & Timmerman, 2005). They employed a broad definition of CMC. Nineteen technologies, including landline telephone, cellular telephone, fax, and voice mail, were covered in

CMC. Thus, new technology apprehension, not CMC apprehension, is a more accurate term to reflect Scott and Timmerman's new concept.

Their CMC apprehension measure was modified from McCroskey 1970's version of PRCA (McCroskey, 1970), which was widely criticized. McCroskey abandoned this scale. In particular, Scott and Timmerman's 10-item CMC apprehension scale measured behavior avoidance ("I always avoid communicating via a computer if possible"; "I look forward to expressing myself during online meetings"), behavioral intention ("I look forward to the opportunity to interact with others on the computer"), attitude ("I like to get involved in computer-based group discussion"; "I dislike having to limit my communication to what is possible on a computer"), and self-efficacy ("I feel that I am more skilled than most others when interacting with people online"). It may not be a valid measure of apprehension in that it did not match the conceptual definition of the construct.

Fuller and colleagues examined the factors influencing the e-learning experience of college students and developed a concept called email anxiety, which is defined as fear or apprehension associated with the real or anticipated use of a computer to communicate via email (Fuller et al., 2006). Like Brown et al.'s study, the study of Fuller and colleagues adopted a trait definition. But it is obvious that email anxiety is an application-specific CMC anxiety (Fuller et al., 2006).

Fuller et al.'s measure of email anxiety consisted of six items¹ (Fuller et al., 2006). Four items measure anxiety emotion. However, two items concern intention.

¹ Using electronic email makes me nervous; I got a sinking feeling when I use electronic email; I avoid taking courses in which electronic mail is used; Using computer-based communication tools like electronic mail scares me; I look forward to using electronic mail; and I would like to take courses in which electronic mail use is required.

It may seem at first glance that CMCA and the other constructs may fully explain the problem of blog-maintenance intentions. However, on a theoretical level they fail to do so, as we will now proceed to demonstrate. Fuller et al. (2006), Brown et al. (2004), and Clarke (1991) examined email. All failed to capture the public attention dimension of the blogging experience. Blogs are personal media with public attention. Blogs' selectivity is low. Bloggers do not have the option of revealing posts to various subsets of individuals. Email users, however, can select the people their email messages intend to reach. This is an important distinction theoretically because public attention is an important source of anxiety.

Wright (2000) focused on online forums, reflecting the dimension of public attention. Online forums, however, cannot capture the personal media feature of blogs. Papacharissi suggested that blogs present a turn to personalized, self-referential, and self-serving uses of the Internet (Papacharissi, 2007). Schuster compared blogs and earlier online communication technologies, including bulletin boards, Usenet, and email listservs, and concluded that the main difference between blogs and other technologies is that other technologies are focused on specific topics or organizations. By contrast, blogs are generally focused on specific individuals (Schuster, 2006).

Bloggers believe that blogs are their personal media. The blogger is the main focus of the blog. Bloggers control the layout, the content, and the frequency of posting. Few online forum users would perceive the forum as their personal medium. Forums usually do not focus on users, but on certain topics or interests. Online forum anxiety is distinguished from blogging anxiety. The same argument can be applied to examine Scott

and Timmerman's (2005) workplace-related CMC apprehension. Users would not perceive the workplace technology as their personal media.

A new variable for blogging, a situation-specific measure of anxiety, is needed because blogging is a unique type of online communication behavior that is different from email, online discussion groups, and other workplace technology practices. In line with social cognitive theory, a situational interdependent behavior can only be explained by a type of situational congruent anxiety.

Moreover, CMCA and the other theories have important shortcomings in their operational definitions compared to the conceptual definitions of computer-mediated communication apprehension/anxiety as types of situational anxiety. All the studies adapted McCroskey's trait anxiety measure. This can explain their sometimes paradoxical findings because the operational definitions failed to take situational influences into account. An operational measure that truly reflects the nature of the concept in a given situation can resolve the seemingly irreconcilable findings in the following way: online communication anxiety concepts should integrate both the nature of the behavior and the nature of the situation. For example, the operational definition of blogging anxiety should reflect: (1) the nature of blogging behavior, i.e., a personal medium with public attention, and (2) the nature of the environment: text-based communication, accumulative format of blogs, heterogeneity of audiences, and low selectivity.

To match the conceptual definitions of anxiety, the operational definitions should reflect the nature of the concept, i.e., the visceral arousal experience. In asking a question worded: "I feel that I am more skilled than most others when interacting with people

online,” Scott and Timmerman failed to match their conceptual definition with their operational one. Therefore a more suitable measure would be: “A constant awareness in the back of my mind of my audience causes me to feel tense,” because it better reflects the nature of the concept, the behavior, and the situation.

3.12 Online Posting Anxiety

In this dissertation, a new concept, online posting anxiety, is developed. Online posting anxiety is defined as a joint effect of two separate factors, visceral arousal and cognitive self-labeling of the internal state as anxiety in blogging. This definition is adapted from Bandura’s anxiety definition (Bandura, 1986). Here, blogging is defined as posting to a blog. Other blog related behaviors, such as read a blog or comment on a blog post, are excluded from our definition of blogging.

It should be noted that blogging shares similarities with writing, social activities, and computer-mediated communication activities. Blogs, however, are a unique communication genre (Herring et al., 2004a). Blogs are personal media with public attention. Blogging is a type of online communication that differs from oral communication types such as public speaking, meetings, small groups, and dyadic situations. Written texts and other multimedia content are the communication messages of blogging, while speech is the way of communication for public speaking, meetings, small groups, and dyadic situations. Blogging is also distinctive from the writing tasks that most writing anxiety researchers have studied. Although writing is required for the majority of blogging posts, for many personal diary bloggers blogging is not a task that users have to finish in a certain amount of time like many writing tasks. Blogging is a voluntary activity. Moreover, the format of blog posts is different from previous writing

types. There are no fixed rules, standards, or requirements for blog posts. A single word or a sentence can be a blog post.

Blogging is also different than other CMC applications. Compared to emails, chat rooms and MUDs, blogs are a comparatively new format of Internet communication tool. Blogs are the only online genre that combines personal media with public attention.

Thus, blogging differs from the situations in which communication apprehension arises in that the most common sources of communication apprehension—speeches and face-to-face evaluations—are not present. It differs from situations in which writing anxiety is found in that the strict standards or requirements for various writing tasks are not applied to blog posts. Finally it differs from other forms of CMC as examined by CMCA because blogs are personal media with public attention.

Blogs are personal media. A blogger performs various roles on his/her blog—writer, editor, publisher, graphic designer, discussion monitor, and web administrator. For other CMC applications, it is very rare that a person will take so many responsibilities. Moreover, the major focus of blogging is the blogger—his/her life stories and perspectives—while the message is the center of other CMC applications.

This personal medium gains public attention. In many applications of CMC, information senders communicate with certain receivers. To put it in other words, they have their target audience; they only deliver their information to the people they want to reach. For example, individuals only put email addresses of the people they want to reach in the address bar when they compose emails. Individuals chat with a specific person or persons in chat rooms or through instant messengers. In CMC, the audience has a boundary. In blogging, however, there are usually no fixed boundaries of audience,

unless a blogger only distributes the URL of his or her blog to people he or she knows. Theoretically, information published on blogs can reach an infinite number of people. Bloggers cannot selectively target their information to a specific audience. It is true that some blogging software allows more control over audience. For example, blogs can be password protected. However, most bloggers have little control over their audience. This argument is supported by previous literature (Bortree, 2005; Gumbrecht, 2004; Lenhart, 2005; Li, 2005; Nardi et al., 2004a; Park, 2003a; Takhteyev & Hall, 2005; Viegas, 2005; Wijnia, 2004). This is the reason that scholars suggested that blogging is a “radio show” (Scheidt, 2006; Sundar *et al.*, 2007), a personal medium with public attention.

The integration of personal media with public attention generates anxiety, which is named as online posting anxiety. Again, online posting anxiety is the joint effect of two separate factors, visceral arousal and cognitive self-labeling of the internal state as anxiety in blogging. It is a situational, state-like variable.

Aside from understanding blog-maintenance intentions, an examination of online posting anxiety will make an important original scientific contribution to social cognitive theory. That one, single most important contribution is applying the social cognitive explanation of anxiety to CMC situations.

Bandura started to examine the Internet and human agency (Bandura, 2002). His research is a general description of the importance of self-efficacy and self-regulation on individual educational and occupational self-development, organizational productivity, societal digital gaps and health implications, and social changes in the digital age when new media are ubiquitous. These descriptions could not answer the questions: What are

some unique characteristics of the Internet? How do agentic factors function in online environments?

Internet researchers have advanced our knowledge about how social cognitive variables function on the Internet. Internet-related self-efficacy scales were developed (Compeau & Higgins, 1995; Eastin & LaRose, 2000; Torkzadeh & van Dyke, 2001). Self-efficacy and outcome expectations were proposed as predictors of various Internet application usages and effects (Bani Ali, 2005; Chou, 2001; Eastin & LaRose, 2005; Hsu & Chiu, 2003; LaRose & Eastin, 2004; LaRose et al., 2001; LaRose et al., 2005; LaRose et al., 2003; Song *et al.*, 2004). Computer/Internet anxiety was connected with computer/Internet self-efficacy, but only at a correlation analysis level (Chua *et al.*, 1999; Durndell & Haag, 2002; Maurer, 1994; Sam et al., 2005). In short, no previous study has examined the process and dynamics of how various cognitive variables can generate anxiety in online situations.

3.13 Culture

Hofstede organized cultural differences into overarching patterns. He identified five primary dimensions of culture differences: power distance, individualism, masculinity, uncertainty avoidance, and long-term versus short-term orientation (Hofstede & Hofstede, 2005). The individualism/collectivism dimension is the most widely applied framework to investigate culture issues. Hofstede defined individualism and collectivism on a societal level. He suggested that individualism “pertains to societies in which the ties between individuals are loose: everyone is expected to look after himself or herself and his or her immediate family.” Collectivism, on the other hand (p. 51), “pertains to societies in which people from birth onwards are integrated into strong,

cohesive in-groups, which throughout people's lifetime continue to protect them in exchange for unquestioning loyalty" (Hofstede, 1991). Later research modified these two constructs to encompass both characteristics of culture and personality attributes. Other terms have been used to investigate the distinctions between cultures at individual levels. For example, independence and interdependence (Markus & Kitayama, 1991), idiocentrism and allocentrism (Triandis, 1995), and the private self and collective self (Trafimow *et al.*, 1991). Oyserman, Coon, and Kemmelmeier (2002) concluded that the core elements of individualism/independence/idiocentrism/private self are personal uniqueness and independence, whereas duty to the in-group and maintaining harmony are the main constituents of collectivism/interdependence/allocentrism/collective self (Oyserman *et al.*, 2002). Usually, researchers use the individualism/collectivism framework to contrast Western and Eastern cultures.

The individualism/collectivism dimension influences individuals' cognition and emotion. Triandis found that individuals' self-presentation strategies are influenced by culture. He made a distinction between the private self (the assessment of self by the self), the public self (the assessment of self by a generalized other), and the collective self (the assessment of self by a particular reference group). He argued that culture will influence self-selection and sampling. In individualistic cultures, the private self tends to be more complex and more salient than the collective self. In collectivistic cultures, the collective self tends to be more salient than the private self. The self-selection and sampling determine self-presentation. In individualist cultures, people tend to have more individualist (or interdependent) self-representations; in collectivist cultures, they have more collectivist (or interdependent) self-representations (Triandis, 1989). Markus and Kitayama (1991)

showed that different types of self-representations are likely to lead to different types of cognitive, emotional, and motivational consequences (Markus & Kitayama, 1991). Adamopoulos and Kashima concluded that culture is an antecedent of psychological processes, in which self-representations act as a mediator of cultural influences on cognitive, affective, and motivational processes (Adamopoulos & Kashima, 1999).

Attribution is also a function of culture. Fiske et al. indicated that Western individuals perceive behavior primarily as a function of personal attributes and dispositions, such as emotions. However, East Asian individuals see situational factors, such as norms, roles, and obligations, as the major determinants of behavior (Fiske *et al.*, 1998).

The Chinese culture is an interdependent-based culture, which is characterized by collectivistic social patterns whereby people are linked closely in groups and act in accordance with each other to a great extent (Bagozzi & Lee, 2002). The Chinese culture stresses “we” consciousness, collective identity, emotional interdependence, group decision making, reciprocity, and the maintenance of social harmony (Watson & Ebrey, 1991). In the Western world, an individual is an independent entity with free will, emotions, and a personality. In the Chinese culture, the self represents a tendency for a person to act in accordance with external expectations or social norms, rather than with internal wishes or personal integrity (Yang, 1981; Sun, 1991). In the Confucian paradigm, the traditional Chinese self is defined by relations with others. A person in this relational network tends to be sensitive to his or her position above, below, or equal to others (Gao, 1998). In this Confucian social environment, social norms will have great influence on people’s behavior, which of course includes media behavior.

A number of studies have shown that cultural perceptions about different computer-related technologies are key factors related to both the initial acceptance of these technologies as well as future behavior regarding their usage (Albirini, 2005; Collis, 1999; Doostdar, 2004; Karen *et al.*, 2003; Li *et al.*, 2001; Loch *et al.*, 2003; Makrakis, 1992; McCoy, 2002; McCoy *et al.*, 2005; Parboteeah *et al.*, 2005). In fact, the impact of cultural, social, and environmental factors on technology use and adoption has long been emphasized in diverse theoretical perspectives, such as social cognitive theory (Bandura, 1986), diffusion of innovation (Rogers, 2003), critical mass (Markus, 1990), and social influence (Fulk *et al.*, 1987). In social cognitive theory, normative influences are covered by outcome expectancies that focus on the perceived social consequences of behavior (Norman & Conner, 1996). In his theory of diffusion of innovation, Rogers identified the *social system*, the social context in which the innovation diffuses, and *norms of the social system*, the established patterns of behavior that tell members of the system what behavior is expected, as two important parameters in the process of innovation adoption, which influences individuals' awareness, interest, evaluation, trial, and adoption of innovations (Rogers, 2003). Thomas believed that *cultural suitability*, which defined as how well the proposed innovation fits the existing culture, would influence how acceptable a new technology will be in a society (Thomas, 1987). In his theory of planned behavior, Ajzen raised the concept of the *subjective norm*, which is defined as perceived social pressure to perform or not to perform the behavior, as an important determinant of intention and/or behavior (Ajzen, 1991).

These differences might be expected to evince themselves in blog-maintenance intentions in the following way. Individualism/collectivism as a dimension of culture will

affect individuals' blogging self-efficacy, outcome expectations, and online posting anxiety. Specifically, vicarious experience and social persuasion are two sources of self-efficacy, while individualism/collectivism dimension of culture is reflected in vicarious experience and strategies and content of persuasion in a given culture. People's outcome expectations are decided by self-efficacy and past experience, which is also tightly connected with the culture dimension. As to online posting anxiety, literature reviewed in the previous section has provided abundant evidence for the influence of culture on anxiety.

Social cognitive theory underemphasized the individualism/collectivism categorization of cultures—"People's efforts to manage their everyday lives cannot be reduced to polarities that arbitrarily partition human agency into individual and collective forms"(Bandura, 2002, p.270). This does not indicate that the theory ignores cultural differences. Social cognitive theory indeed recognizes culture differences. Bandura believed that basic agentic capacities and mechanisms of operations are common across nature, but how they are used varies between cultures. Using efficacy beliefs as an example, he suggested that "although efficacy beliefs have generalized functional value, how they are developed and structured, the ways in which they are exercised, and the purposes to which they are put, vary cross-culturally" (Bandura, 2002, p. 273).

Integrating the social cognitive view of culture, this research proposes that blogging self-efficacy, blogging outcome expectations, and online posting anxiety will have impacts on blog-maintenance intentions for both American bloggers and Chinese bloggers. However, their differing cultures will produce two types of influence on blog-maintenance intentions. First, the content of beliefs about blogging self-efficacy, outcome

expectations, and online posting anxiety will vary between cultures. Social related blogging self-efficacy, outcome expectations and online posting anxiety may be more salient among Chinese bloggers than American bloggers. Second, the amount of impact these factors will have on blog-maintenance intentions will be different between cultures. Negative outcome expectations and online posting anxiety may have a greater impact on Chinese bloggers than on American bloggers.

To summarize, in this chapter, literature about blogging, anxiety, and culture was reviewed. The literature review serves as the bedrock for the development of the hypotheses and a model that I will present in the following chapter. But it is one thing to summarize literature and another to synthesize literature into a researchable problem. The specific null findings and inconsistencies and paradoxes that might be explained through the social cognitive theoretical perspective are as follows: (1) Anxiety can be defined in social cognitive terms. For example, communication apprehension can be explained as a combination of low communication self-efficacy and negative outcome expectations for communication. Similarly, a social cognitive view of online posting anxiety suggests that online posting anxiety is predicted by blogging self-efficacy and outcome expectations. (2) Blogging is jointly decided by the nature of blogs and the bloggers' personal factors. The personal factors that are important for blogging are social anxiety, writing anxiety, blogging self-efficacy, blogging outcome expectations, and online posting anxiety. Blogs are a unique online communication genre (Herring et al., 2004a). Blogs form a context that is different from traditional social, communication, and writing situations and also from other CMC applications. The unique nature of blogging indicates that online posting anxiety, blogging self-efficacy, and blogging outcome expectations are unique concepts.

(3) Situational factors can be incorporated into trait views to improve the predictability of trait variables. (4) Depending on the breadth and stability of the environment, variables can function as a general trait-like variable, a generalized-context one, a specific-context one, and a situational state-like variable. The nature of the situation decides the characteristics of the variables. In this research, social anxiety and writing anxiety function as generalized-context variables, and online posting anxiety as a situational state-like variable. (5) Cognition determines anxiety. The direct causal relationship, however, only presents at the same level of generality. For example, it is writing self-efficacy and outcome expectations, not general self-efficacy and outcome expectations or more specific blogging self-efficacy and outcome expectations, that directly predict writing anxiety. (5) Culture influences cognition and anxiety. The triadic causal relationship between environment, behavioral, and personal factors is a universalized model across individualistic and collective cultures, but how it is used varies in different cultural milieus.

CHAPTER 4

HYPOTHESES AND RESEARCH QUESTIONS

Based on social cognitive theory and the literature of anxiety, blogs, and culture, the current research proposes a structural model to explain the determinants of blog-maintenance intentions. This structural model suggests that cognitive factors (blogging self-efficacy, positive outcome expectations for blogging, negative outcome expectations for blogging) and anxiety (social anxiety, writing anxiety, and online posting anxiety) influence blog-maintenance intentions. The model integrates three different theoretical perspectives—social cognitive theory and the two conflicting views of the causation between anxiety and cognition. The contribution of this model is that it uses social cognitive terms to explain anxiety and provides a unique perspective to integrate these discrepant theories to explain blog-maintenance intentions.

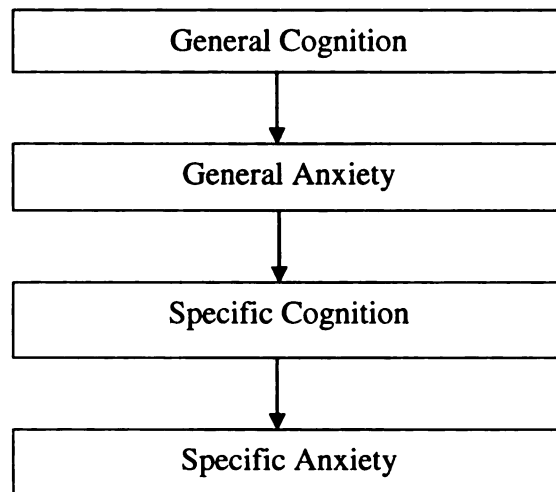
There are paradoxical arguments in the social cognitive view of the relationship between cognition and anxiety. On one hand, Bandura firmly posited that cognition determines anxiety (Bandura, 1986). On the other hand, Bandura mentioned that one source of self-efficacy is affective arousal (Bandura, 1997). When discussing sources of self-efficacy, Bandura argued that people rely partly on their somatic and emotional states in judging their capabilities. A way of modifying self-beliefs of efficacy is to reduce people's stress reactions and alter their negative emotional proclivities and

interpretations of their physical states (Bandura, 1997). Social cognitive theory failed to provide an explanation of these conflicting arguments.

This research proposes a model that may untangle the paradoxical views. In line with Bandura's basic argument, this study suggests that cognition predicts anxiety. The relationship between cognition and anxiety, however, is not a single equation. It is, as demonstrated in Figure 4.1, a linear process in which cognition and anxiety interact at different levels of generality. Generality is defined as the scope of the contexts a variable can cover. The broader the scope of the coverage, the higher level the generality has. For example, writing anxiety and writing self-efficacy cover all the writing contexts, while online posting anxiety and blogging self-efficacy contain only blogging contexts. The level of generality of writing anxiety and writing self-efficacy is higher than that of online posting anxiety and blogging self-efficacy.

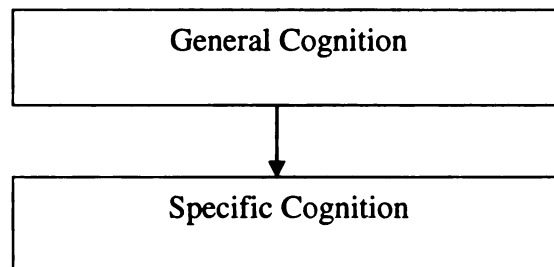
The causal relationship between cognition and anxiety is decided by the generality of the cognitive and anxiety variables. In the same level of generality, cognition influences anxiety. On different levels, higher-level anxiety directly influences lower-level cognition.

Figure 4.1. The Causal Relationship between Cognition and Anxiety.



Previous studies provided partial support for this model of cognition and anxiety. Chen et al.'s (2001) empirical study confirmed Bandura's argument that general self-efficacy influences specific self-efficacy. Their model can be presented as Figure 4.2. This model is not in conflict with the model proposed in this study. In the current study, general cognition indirectly predicts specific cognition through general emotion. Omitting general emotion in Figure 4.2 does not threaten the validity of our model. It only decreases the explanatory power of Chen et al.'s model.

Figure 4.2. The Causal Relationship between General Cognition and Specific Cognition.



Studies also examined the relationship between general anxiety and specific anxiety (Figure 4.3). For example, Brown et al. (2004) suggested that computer anxiety and communication apprehension indirectly determine computer-mediated

communication anxiety. Similarly, previous studies examined the relationship between general anxiety and specific cognition (See Figure 4.4). For example, Thatcher and Perrewe (2002) found that trait anxiety influenced computer self-efficacy. Again, these models did not falsify the model proposed in this study. Instead, discarding important cognition/anxiety variables is a limitation of these models.

Figure 4.3. The Causal Relationship between General Anxiety and Specific Anxiety.

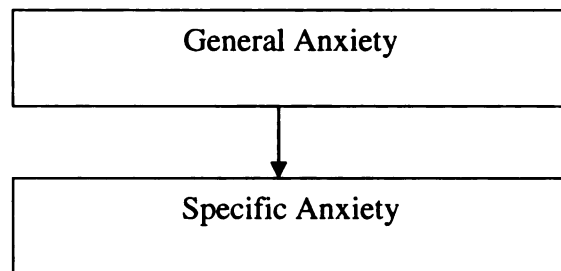
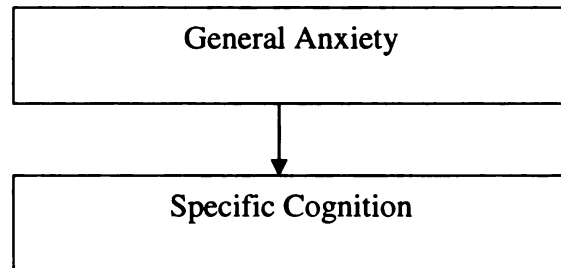


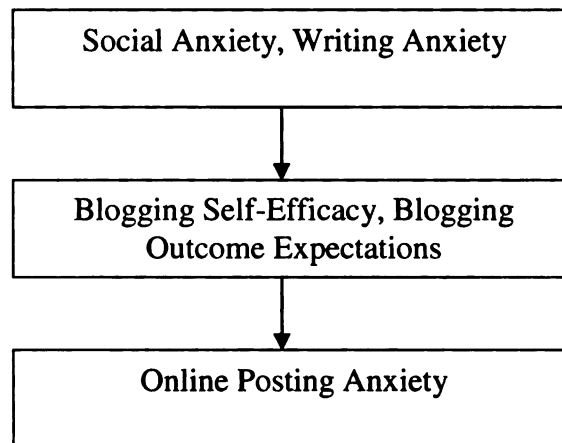
Figure 4.4. The Causal Relationship between General Anxiety and Specific Cognition.



Thus, previous studies presented part of the picture of the reciprocal process of cognition and anxiety. The model proposed in this study shows a more comprehensive picture. It is not a complete picture because the model starts with general anxiety (Figure 4.5). The general proposition of this model is that general anxiety variables will first influence specific cognitive variables, which in turn will influence specific anxiety

variables. These three kinds of variables (general anxiety variables, specific cognitive variables, and specific anxiety variables) will determine intention.

Figure 4.5. The Causal Relationship Examined in This Study



This is a unique contribution because, unlike all the research that preceded it, it specifies the process of how cognition and anxiety interact at different levels of generality. Social cognitive theory keeps emphasizing the role of situations. But it does not provide a general solution in terms of how to incorporate situations in the variables. In this study, the role of situations is reflected in the concept of generalit. Specifically, this model suggests that within the same level of generality, cognition influences anxiety. Nevertheless, before individuals enter a new level, their anxiety at the higher level serves as a reference point or anchor for their cognitive beliefs in this level. The model hopes to resolve the following theoretical issues: (1) how cognition and anxiety with different levels of generality interact for blogging, a unique online communication behavior; (2) how high-level anxiety influences specific cognitions and anxiety; and (3) how culture demonstrates its influence on blogging.

4.1 The Role of Culture

While a great deal of work has been done in terms of studying blogging in the U.S., few studies have examined other countries' blogging practices. Even fewer studies have conducted cross-cultural research that compares the blogging practices of two countries. Bandura clearly stated that agentic capabilities are common across cultures (Bandura, 2002). This research proposes that:

H1: blogging self-efficacy, positive outcome expectations for blogging, negative outcome expectations for blogging, and online posting anxiety will predict blog-maintenance intentions for both American and Chinese bloggers.

The social environments for blogging are different when looking at American bloggers and Chinese bloggers. Blogs are arguably one of the most individualized media, while Chinese culture is considered one of the cultures that value collectiveness most. China is also has some of the strictest Internet censorship among countries in the world. The differences between blogging contexts will elicit influence on blogging cognition and anxiety. However, the directions and variances of the influence are still in doubt. A research question is proposed

R1: What are significant differences between the Chinese model and the American one?

Previous media use studies used intention as their dependent variable (Agarwal & Karahanna, 2000; Dabholkar & Bagozzi, 2002; Davis *et al.*, 1989). Intention can be defined as one's motivation in the sense of his or her conscious plan to exert effort to carry out behavior by himself or herself (Eagly & Chaiken, 1993). In this study, blog-maintenance intention is used as the dependent variable.

4.2 The Impact of General Anxiety Variables

Writing anxiety is an important anxiety variable that will influence blogging-specific cognitive factors because bloggers use texts as communication syntax. Social anxiety should be salient, too. The interactions between bloggers and their audience imply that blogs can be seen as social stages.

Two sources of self-efficacy are the somatic and emotional states (Bandura, 1986). People can gauge their degree of self-efficacy by the emotional state they experience as they contemplate an action (Bandura, 1997). Thus, anxiety, as an affective response, might have a direct influence on self-efficacy beliefs (Barbeite & Weiss, 2004). Strong emotional reactions to a task also provide cues about the anticipated success or failure of the outcome (Bandura, 1997). Anxiety can influence outcome expectations.

Computer anxiety may not be important here. Leso and Peck (1992) found that computer anxiety was more related to computer programming than it was to general Internet tools and applications. Scott and Timmerman (2005) further suggested that computer anxiety could not capture the use of new communication technologies. When bloggers think of blogging, two of the most familiar and relevant anxiety types—writing anxiety and social anxiety—will be salient because blogging is text-based and the interaction between bloggers and audience is an important component of blogging. Communication apprehension was not included in the model based on the results of Study 1 (see Chapter 5 for detailed discussion).

Writing and social cues are present in blogging behaviors. These two sources of anxiety will serve as the cues for bloggers to judge their blogging self-efficacy, positive outcome expectations for blogging, and negative outcome expectations for blogging.

H2a: Writing anxiety will decrease blogging self-efficacy.

H2b: Writing anxiety will decrease positive outcome expectations for blogging.

H2c: Writing anxiety will increase negative outcome expectations for blogging.

H3a: Social anxiety will decrease blogging self-efficacy.

H3b: Social anxiety will decrease positive outcome expectations for blogging.

H3c: Social anxiety will increase negative outcome expectations for blogging.

4.3 The Impact of Self-Efficacy and Outcome Expectations

Self-efficacy is important for Internet usage (Barbeite & Weiss, 2004; Compeau & Higgins, 1995; Eastin & LaRose, 2000; Huang & Liaw, 2005; Igbaria & Iivari, 1995; McFarland & Hamilton, 2006; Wang *et al.*, 2003). Social cognitive theory proposed that self-efficacy will influence outcome expectations since outcomes are driven largely by judgments of how well one can perform the behavior (Bandura, 1986). Studies found that computer/Internet self-efficacy will increase computer/Internet outcome expectations (Compeau & Higgins, 1995; Compeau *et al.*, 1999; LaRose & Eastin, 2004). Self-efficacy was also found to make significant contributions to intention (Manstead & Van-Eekelen, 1998).

Bandura defined anxiety as a joint effect of two separate factors, visceral arousal and cognitive self-labeling of the internal state as anxiety. From its definition, we can see how cognition determines anxiety. Empirical studies have indeed found negative correlations between self-efficacy and anxiety (Chua *et al.*, 1999; Durndell & Haag, 2002; Dwyer & Fus, 2002; Hopf & Colby, 1992; Maurer, 1994; Prickel, 1994; Sam *et al.*, 2005). Evidence was also found that self-efficacy decreased anxiety (Crumbo, 1999; Dwyer &

Fus, 2002; Greene & Sparks, 1983; Hopf & Colby, 1992; Lucchetti et al., 2003; Prickel, 1994).

For blogging, bloggers who are confident in their blogging skills and capabilities will experience more positive outcome expectations while anticipating fewer negative outcome ones. They will be less anxious when blogging. Their blog-maintenance intentions will be higher than those of bloggers who are not confident in their blogging skills.

H4a: Blogging self-efficacy will increase positive outcome expectations for blogging.

H4b: Blogging self-efficacy will decrease negative outcome expectations for blogging.

H4c: Blogging self-efficacy will decrease online posting anxiety.

H4d: Blogging self-efficacy will increase blog-maintenance intentions.

Outcome expectations influence intention and anxiety (Bandura, 1986; Compeau et al., 1999; Crable *et al.*, 1994; Greene & Sparks, 1983; LaRose & Eastin, 2004; LaRose et al., 2001; Littlejohn, 1994). People's intention to use information technology is influenced by their beliefs about the relative advantages and disadvantages of the technologies (Al-Khaldi & Al-Jabri, 1998; Culpan, 1995; Hebert & Benbasat, 1994). Mikkelsen et al. argued that whether the introduction of a new technology is perceived as a challenge or triggers anxiety will depend on the individual expectancies of the outcomes of available strategies in any given situation (Mikkelsen *et al.*, 2002). If bloggers perceive that blogging will bring positive outcomes, they will increase their intention to blog and decrease their anxiety. On the other hand, if they believe that blogging will bring negative outcomes, their intention will be decreased and their anxiety will be increased.

H5a: Positive outcome expectations for blogging will decrease online posting anxiety.

H5b: Positive outcome expectations for blogging will increase blog-maintenance intentions.

H6a: Negative outcome expectations for blogging will increase online posting anxiety.

H6b: Negative outcome expectations for blogging will decrease blog-maintenance intentions.

4.4 The Impact of Online Posting Anxiety

The impact of anxiety on intention is well supported (Allen & Bourhis, 1992, 1996; Barbeite & Weiss, 2004; Beatty, 1987; Burroughs *et al.*, 2003; Campbell & Neer, 2001; Chelley & Larry, 2002; Chua *et al.*, 1999; Daly & Miller, 1975b; Richmond & McCroskey, 1998; Scott & Rockwell, 1997; Smith & Caputi, 2001; Vician & Davis, 2002; Weil & Rosen, 1995; Wheelless *et al.*, 2005). Researchers found that computer anxiety usually causes computer use avoidance (Chua *et al.*, 1999; Weil & Rosen, 1995). For blogging, it is assumed that the more anxious people feel about blogging, the more they will try to avoid blogging.

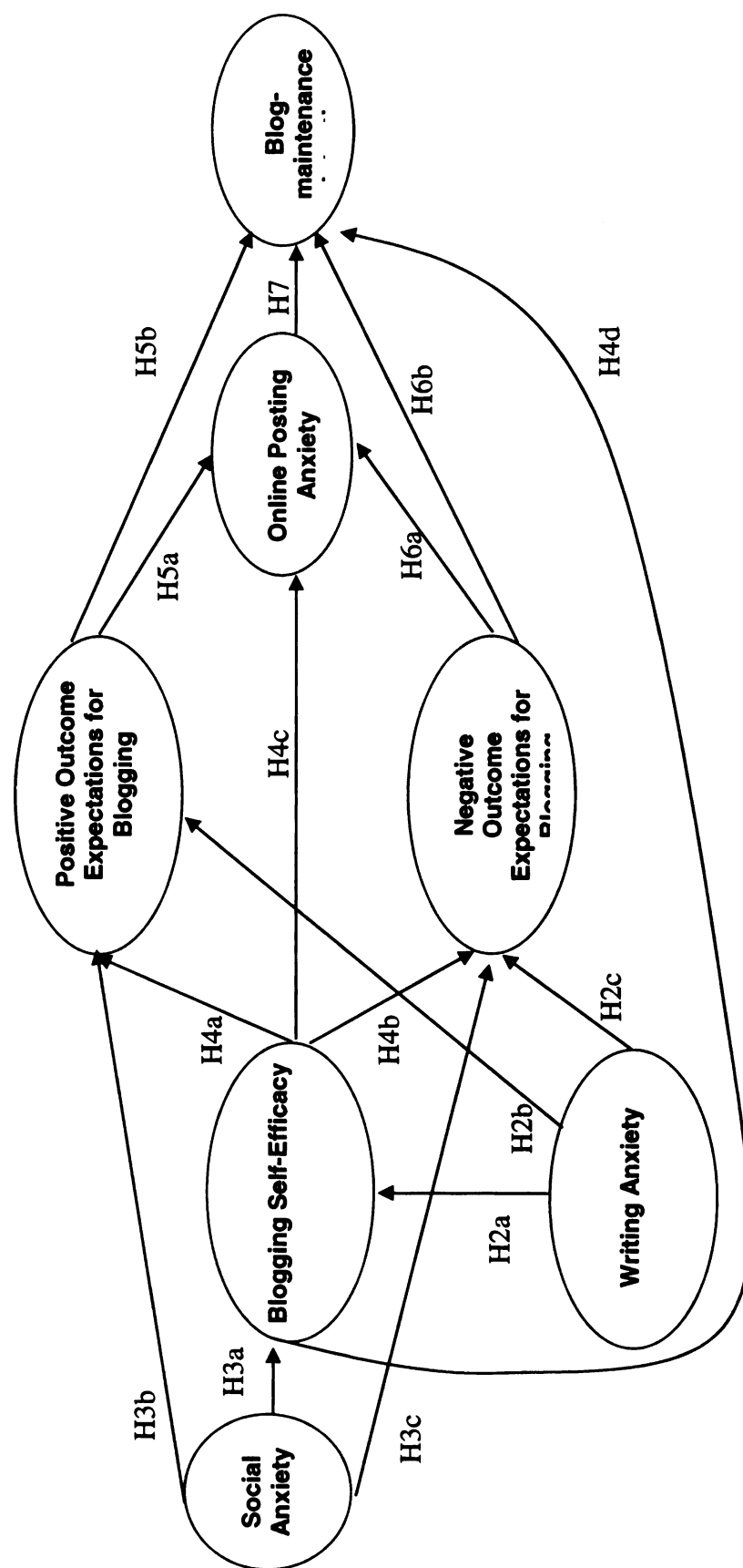
H7: Online posting anxiety will decrease blog-maintenance intentions

In summary, seven variables, one research question, and 16 hypotheses are proposed to examine the factors that contribute to blog-maintenance intentions. To demonstrate the direct and indirect theoretical causal structure as hypothesized, the following path model is proposed (Figure 4.6).

While most of these hypotheses have been investigated before, they are included here to provide a comprehensive model of blog-maintenance intentions. The unique, original contribution of the present research is located in Hypotheses H1, R1, H2a-c,

H3a-c, and H4a-d. Specifically, the contribution is that the present research provides a social cognitive explanation of online posting anxiety in the CMC realm.

Figure 4.6. Theoretical Model of Direct and Indirect Effects on Blog-maintenance Intentions



CHAPTER 5

METHODS

5.1 Study 1

5.1.1 Method

In this dissertation, three studies were conducted to test the proposed model. Study 1 involved qualitative in-depth interviews. Interviewing provides a way for researchers to understand the experience of other people and the meaning they make of an experience. The in-depth interview approach uses open-ended questions to build upon and explore participants' responses to those questions (Seidman, 1998). The goal of Study 1 is to examine the nature of blogging and to generate measures for the four new constructs in the model: blogging self-efficacy, positive outcome expectations for blogging, negative outcome expectations for blogging, and online posting anxiety.

Participants were recruited by messages posted on the author's and her friends' blogs. The interviewees were selected by nonrandom (nonprobability) sampling. To recruit bloggers who might experience online posting anxiety, nonactive bloggers were the desired sample. In Herring et al.'s study (2004), all blogs whose latest update was older than 14 days were eliminated, to examine only active blogs. Perseus's blog survey (2003) also discovered that the average updating cycle of active blogs is 14 days. In this dissertation, the length of the nonactive period was expanded. The recruitment messages

specified that only bloggers who had not updated their blogs for more than three months were qualified to participate.

Ten American bloggers and 16 Chinese bloggers were interviewed online using instant message tools (MSN Messenger, Google Talk, and AOL Messenger). Of the 10 American bloggers, five were female and five were male. Of the 16 Chinese bloggers, nine were female and seven were male. The interviews lasted between 55 to 180 minutes.

Mason suggested that asking personalized questions can generate situated knowledge with all the interviewees (Mason, 2002). Before each interview, the interviewee's blog was examined to design specific questions related to his/her blogging experience. The open-ended interviews were conducted under the guidance of an interview protocol. The sequence of the questions, however, was not fixed. American participants were given \$20 Amazon gift cards for participation. Chinese participants were paid by mailing RMB40 checks. The interview scripts were analyzed using a modified constant comparative technique (Strauss & Corbin, 1998). The data analysis took place during and after data collection to assist in designing follow-up interviews. The entire corpus of data was examined using a grounded research approach thoroughly after the interviews were completed.

5.1.2 Brief Results

Table 5.1 summarizes American and Chinese bloggers' blogging self-efficacy, blogging outcome expectations, and online posting anxiety beliefs. It should be noted that American and Chinese bloggers shared similar beliefs. However, there were salient cultural differences. Compared to American bloggers, Chinese bloggers believe that blogging is a more difficult task that requires more skills. They are more afraid of the

negative health outcomes and audience-related outcomes, while they value their blogging status and audience more. Audiences and social concerns are their biggest sources of online posting anxiety.

Another finding worth mentioning is that communication-related anxiety was not identified by either American or Chinese bloggers. It was hypothesized that communication-related anxiety exists because blogging is a form of communication. However, the data indicated that bloggers do not worry about communication anxiety. This might be explained by the special nature of blogs. Text is the medium of communication for blogging. Instead of worrying about speeches, bloggers are anxious about writing. This might be the reason that writing-related anxiety, not communication-related anxiety, is salient for blogging.

Table 5.1. American and Chinese Bloggers’ Blogging Beliefs

	American Bloggers	Chinese Bloggers
Blogging self-efficacy beliefs	<ul style="list-style-type: none"> ○ Computer and Internet ○ Writing ○ Observation 	<ul style="list-style-type: none"> ○ Computer and Internet ○ Writing ○ Observation ○ Moral, communication, English, persistence
Outcome expectation for blogging beliefs	<ul style="list-style-type: none"> ○ Enjoyable activity ○ Social ○ Status ○ Self-reactive 	<ul style="list-style-type: none"> ○ Enjoyable activity ○ Social ○ Status ○ Self-reactive ○ Economic ○ Health ○ Government censorship
Online Posting Anxiety beliefs	<ul style="list-style-type: none"> ○ Social ○ Writing ○ Computer and Internet ○ Safety 	<ul style="list-style-type: none"> ○ Social ○ Writing ○ Computer and Internet ○ Safety ○ Time and environment

5.2 Study 2

5.2.1 Method

Based on the results of the qualitative in-depth interview study, a pretest-posttest online survey was conducted to develop scales to measure blogging self-efficacy, positive outcome expectations for blogging, negative outcome expectations for blogging, and online posting anxiety. A snowball sampling method was used to recruit participants. A recruitment message was posted on the author's, her friends', and some of the interview participants' blogs. In the recruitment message, the author invited bloggers to spread the information and post this message on their own blogs.

For the American sample, there were 87 pretest respondents. The mean time since their last update of their blogs was 1.59 months ($SD = 3.59$). They were paid \$3 for the pretest survey and \$5 for the posttest survey. The sample was 69% female and 31% male and the participants' mean age was 32.16 ($SD = 10.84$) years old. The majority of respondents were Caucasian (55.2%). Other ethnic groups represented include African American (9.2%), Asian (29.9%), and Other (10.3%). The majority of respondents had four-year college degrees (31%), followed by some college (27.6%), master's degree (16.1%), two-year college degree (9.2%), high school diploma (8.0%), doctoral degree (4.6%), and unidentified (3.4%). Fifty-eight of the 87 pretest respondents participated in the posttest, a 66.7% response rate.

For the Chinese sample, there were 70 pretest respondents. The mean time since their last update of their blogs was 1.42 months ($SD = 3.13$). They were paid RMB10 for the pretest survey and RMB20 for the posttest survey. The sample was 49% female and 43% male and 8% unidentified. Participants' mean age was 32.36 ($SD = 13.07$) years old.

Of the Chinese participants, 1.4% had finished middle school, 14.3% had finished high school, 51.4% had a college degree, 24.3% had a master's degree, and 1.4% had a doctoral degree. Fifty-three of 70 pretest subjects participated in the posttest survey two weeks later, a 75.7% response rate.

5.2.2 Brief Results

The purpose of this longitudinal study was to test the reliability and validity of the measures. Based on item evaluation criteria, a six-item blogging self-efficacy scale, a five-item positive outcome expectations for blogging scale, a five-item negative outcome expectations for blogging scale, and a three-item online posting anxiety scale were developed and tested.

The internal consistency reliability was estimated using Cronbach's coefficient alpha. The coefficient alpha is a commonly quoted statistic that provides support that a scale is acceptable. Table 5.2 presents the Cronbach's coefficient alpha for the new measures. The values of Cronbach's coefficient alpha ranged from .610 to .757. The new measures demonstrate acceptable reliability. The test-retest reliability was calculated. Table 5.3 demonstrates the values of test-retest reliability. The test-retest reliability values were from .684 to .828, indicating that the measures are stable over time.

Table 5.2. Cronbach's Coefficient Alpha of the New Measures

	American Sample	Chinese Sample
Blogging self-efficacy	.757	.754
Positive outcome expectations for blogging	.663	.704
Negative outcome expectations for blogging	.745	.610
Online posting anxiety	.749	.629

Table 5.3. Test-Retest Reliability of the New Measures

	American Sample	Chinese Sample
Blogging self-efficacy	.743	.684
Positive outcome expectations for blogging	.828	.818
Negative outcome expectations for blogging	.688	.783
Online posting anxiety	.789	.771

Thus, the Cronbach's coefficient alpha and test-retest reliability were calculated to assess reliability. The content validity, criterion-related validity, and construct validity were examined as well. The majority of the results suggested that these new scales demonstrated accepted reliabilities and validities.

5.3 Main Study

5.3.1 Sampling Method

Participants were recruited by messages posted on blogging online groups. Previous blogging studies also employed online postings of the survey URL and announcements to recruit participants (Johnson & Kaye, 2004; Kaye, 2004, 2007). Nonprobability sampling is an acceptable method when random sampling is not possible (Babbie, 2001).

American respondents consisted of 145 bloggers. They were given \$5 for their participation. The sample was 71.3% female and 28.7% male, and the mean age was 34.14 (SD = 9.57) years old. The majority of respondents were Caucasian (64.8%). Other ethnic groups represented included African American (6.2%), Asian (16.6%), and Other (4.8%). When asked about who reads their blogs, 33.1% believed that their audience was mostly people they personally know; 28.7% thought that their audience was mostly people they have never met; 29.4% answered both equally, and 8.8% didn't know who

reads their blogs. Regarding to the question “whom they blog for,” 38.2% answered that their blogs were mostly for themselves, 14% indicated that their blogs were mostly for their audience, 44.1% believed that their blogs were both for themselves and their audience, and 2.9% answered that their blogs were not for themselves or their audience.

Chinese respondents consisted of 178 bloggers recruited by messages posted on blogging online groups. They were given RBM20 for their participation. The sample was 51.2% female and 48.8% male and the mean age was 26.96 ($SD = 6.34$) years old. Among these bloggers, 44.9% believed that mostly people they personally knew read their blogs, followed by 16.9% of the participants stated that they didn’t know who read their blogs. 15.2% indicated a readership of both equally (people they personally know and people they have never met), and 10.7% who believed the blogs were read mostly by people they have never met. When asked about “overall, would you say you blog...” 55.6% answered “mostly for yourself,” followed by 16.3% “mostly for your audience,” 2.8% “both equally,” and 8.4% “others.”

5.3.2 Evaluations of the Reliability and Validity of the New Scales

Criterion validity and reliability were investigated again to evaluate the new scales. Individual items for the blogging self-efficacy scale, the positive outcome expectations for blogging scale, the negative outcome expectations for blogging scale, and the online posting anxiety scale were correlated with the dependent variable of this study: blog-maintenance intentions. Based on social cognitive theory, blogging self-efficacy items and positive outcome expectations for blogging items should be positively correlated with blog-maintenance intentions, while negative outcome expectations for blogging and online posting anxiety items should be negatively correlated with blog-

maintenance intentions. Based on the criterion validity evaluation, a few items were deleted from the four scales. The remaining scales demonstrated criterion validity and reliability. See Table 6.1 and Table 6.2 in the next chapter.

To further investigate the reliability of the new scales and the equivalence of the scales across cultures, two principle factor analyses were conducted. Tables 5.4-5.7 present the results of the factor analyses for the American sample and Chinese sample. The blogging self-efficacy, positive outcome expectations for blogging, negative outcome expectations for blogging, and online posting anxiety scales demonstrated similar factor structures for the American and the Chinese samples. The equivalence of these four scales across culture was supported.

Table 5.4. Blogging Self-Efficacy Factor Loadings

Items	American Sample Factor Loading	Chinese Sample Factor Loading
Write a well-organized post with good introduction, body, and conclusion.	.858	.706
Using multimedia to decorate my blog.	.807	.749
Using a blog to present my unique personality.	.803	.667
Collect information that attracts my audience' interests and attention.	.793	.745
Make friends with people I don't know at all on my blog successfully.	.779	.786
Be persistent and write at least one post every week.	.636	.544

Table 5.5. Positive Outcome Expectations for Blogging Item Loadings

Items	American Sample Factor Loading	Chinese Sample Factor Loading
Examine, interpret, and remember the world and my life.	.890	.636
Feel good about myself.	.851	.815
Satisfy my desire to showcase my writings, music, pictures, or other works.	.772	.716
Tighten connections with offline and online friends.	.762	.713
Get attention.	.665	.506

Table 5.6. Negative Outcome Expectations for Blogging Item Loadings

Items	American Sample Factor Loading	Chinese Sample Factor Loading
Bring negative employment consequences like dismissals and reprimands.	.878	.842
Jeopardize my relationships.	.876	.748
Feel shame because my weakness or my private life might be exposed.	.809	.735
Harm my health.	.740	.650
Have physical danger if people know where I live and work.	.681	.690

Table 5.7. Factor Loadings for Online Posting Anxiety Items

Items	American Sample Factor Loading	Chinese Sample Factor Loading
I feel uncomfortable when I think my blog is going out to the world and on a permanent record.	.860	.840
I am afraid the emotions shown on my blog are too temporary.	.847	.723
A constant awareness in the back of my mind of my audience causes me to feel tense.	.812	.744

5.4 Structural Equation Modeling Test

5.4.1 Operational Measures

Writing apprehension Daly and Miller's writing apprehension test (WAT) is the most widely used scale to measure writing-related anxiety (Daly & Miller, 1975a). However, scholars have questioned the construct validity of the WAT. After reviewing the literature, Poff concluded that most instruments used to measure writing apprehension actually measure hypothesized causes of these constructs, not the constructs themselves (Poff, 2004). Studies argued that the WAT may measure variables other than writing apprehension. For example, it may be influenced by self-confidence in the ability to write (Richmond & Dickson-Markman, 1985), attitudes toward writing (Reed & Keeley, 1986), transitory/situation-specific anxiety (Fowler & Knoll, 1980), self-efficacy and outcome expectations (McKain, 1991), positive emotions (McKain, 1991), and writing enjoyment (Davida *et al.*, 1995). In the current study, the WAT items were examined, and the items lacking construct validity were eliminated. Studies found that the WAT measure other variables other than writing apprehension (Poff, 2004). For example, self-confidence in the ability to write (Richmond & Dickson-Markman, 1985), attitudes toward writing (Reed & Keeley, 1986), transitory/situation-specific anxiety (Fowler & Knoll, 1980), self-efficacy and outcome expectations (McKain, 1991), positive emotion (McKain, 1991), and writing enjoyment (Davida *et al.*, 1995). In this study, five valid items were used to measure writing apprehension.²

² We would like to ask about your experience in your real life when you write. Please indicate the degree to which each statement applies to you by marking whether you: I have no fear of my writing's being evaluated; I'm nervous about writing; I look forward to writing down my ideas (N); Taking a composition course is a very frightening experience.

Social anxiety Four out of 24 items from Liebowitz's social anxiety scale (Liebowitz, 1987) were used to measure social anxiety. Items are scored on a seven-point Likert scale ranging from "strongly disagree" (1) to "strongly agree" (7).³

Blogging self-efficacy Six items were used to assess blogging self-efficacy. Items were scored on a seven-point Likert scale ranging from "no confidence at all" (1) to "complete confidence" (7). Total scores were obtained by summing over all the items and taking the mean; higher scores indicated greater perceived blogging self-efficacy.

Positive outcome expectations for blogging. Positive outcome expectations for blogging were measured by a seven-point Likert scale consisting of five items, ranging from "strongly disagree" (1) to "strongly agree" (7).

Negative outcome expectations for blogging. Negative outcome expectations for blogging were also measured by a seven-point Likert scale consisting of five items, ranging from "strongly disagree" (1) to "strongly agree" (7).

Online posting anxiety Three items were used to measure online posting anxiety. Items were scored on a seven-point Likert scale ranging from "strongly disagree" (1) to "strongly agree" (7). Total scores were obtained by summing over all the items and taking the mean; higher scores indicated greater online posting anxiety.

Blog-maintenance intentions. Blog-maintenance intentions was assessed using three items adapted from Armitage and Conner (1999). Each item was measured on a seven-point Likert scale (1 = strongly disagree to 7 = strongly agree).⁴

³ I feel anxious when... Writing while being observed; Talking with people you don't know very well; Meeting strangers; Expressing a disagreement or disapproval to people you don't know very well.

⁴ I will try to update my blog in the future; I want to update my blog in the future; I intend to update my blog in the future.

5. 4. 2 Analysis

The Statistical Package for the Social Sciences (SPSS) version 14.0 was used to analyze the data. Pearson product-moment correlations were computed to test the hypotheses at the .05 level of significance. Experiment-wise error rate (EER) might be present. It is worth noting that one or more of the significant test results may be significant just by chance. However, EER is not necessarily a problem. O’Keefe (2003) proposed that the practice of adjusting the alpha level to control for experiment-wise error should be abandoned because it has no principled basis, commits one to absurd beliefs and practices, and reduces statistical power. Tutzauer (2003) argued that alpha adjustment should be applied only in the narrowly circumscribed instance when the researcher wants to make a strong claim that there is no Type I error in a specific collection of tests. Yuan-Bentler’s model was applied for dealing with missing data in the EQS procedure. For examining the causal relationships among variables under the proposed model, the EQS program (Bentler, 1995) was employed. Each study variable was a latent variable with one indicator formed by the relevant items. The error terms for each of the indicators was computed according to the formula $e = \text{variance} * (1 - \alpha)$.

CHAPTER 6

RESULTS

The Pearson product-moment correlation coefficients between variables are presented in Table 6.1 and Table 6.2. The figures in the diagonal are the reliability alpha coefficients. The means and standard deviations for each variable are shown in the columns to the right of the table. It should be noted that in the US group, the correlations between positive outcome expectations for blogging and social anxiety and blogging self-efficacy were very high ($r = -.597$, $r = .641$). Multicollinearity might present. VIF (Variance Inflation Factor) and Tolerance values were calculated in regression analysis using SPSS 14.0 to check for multicollinearity⁵. The effect of multicollinearity was excluded in the current study.

To examine causal relationships between blog-maintenance intentions and other variables, a structural model was constructed. Following Raykov, Tomer, and Nesselroade's (1991) recommendation on reporting goodness of fit indices, normed fit index (NFI), nonnormed fit index (NNFI), and comparative fit index (CFI), as well as the misfit measure known as root-mean-square error of approximation (RMSEA) suggested by Hu & Bentler (1999), indications for acceptable fit were provided by fit indices that exceed 0.90 and misfit RMSEA index under or equal to 0.07.

⁵ The criteria that any VIF of 10 or more and/or tolerance values of .10 or less (Cohen et al. 2003, p. 422) was applied to examine multicollinearity.

Model 6.1, the model with blog-maintenance intention as the dependant variable constituted a good fit to the data. χ^2 (df = 25, N = 323) = 55.18, p=.000, NFI = .909, NNFI = .910, CFI = .946, RMSEA = .061. Yuan-Bentler correction model indicated that: χ^2 (df = 25, N = 323) = 48.404, p=.003, NFI = .914, NNFI = .924, CFI = .955, RMSEA = .054. Parameter estimates are shown in Figure 6.1.

As depicted in Figure 6.1, 13 out of 16 hypotheses were supported in both the American and Chinese samples. Specifically, writing anxiety has significant direct impact on blogging self-efficacy (the American sample: $\beta = -.527$; the Chinese sample: $\beta = -.522$), positive outcome expectations for blogging (the American sample: $\beta = -.426$; the Chinese sample: $\beta = -.416$), and negative outcome expectations for blogging (the American sample: $\beta = -.241$; the Chinese sample: $\beta = -.244$). Social anxiety has significant direct impact on positive outcome expectations for blogging (the American sample: $\beta = -.215$; the Chinese sample: $\beta = -.178$), negative outcome expectations for blogging (the American sample: $\beta = .253$; the Chinese sample: $\beta = .217$). Blogging self-efficacy had significant direct impact on positive outcome expectations for blogging (the American sample: $\beta = .566$; the Chinese sample: $\beta = .558$), negative outcome expectations for blogging (the American sample: $\beta = -.253$; the Chinese sample: $\beta = -.259$), and online posting anxiety (the American sample: $\beta = -.546$; the Chinese sample: $\beta = -.587$). Positive outcome expectations for blogging had significant direct impact on online publishing anxiety (the American sample: $\beta = .323$; the Chinese sample: $\beta = .352$), and blog-maintenance intentions (the American sample: $\beta = .817$; the Chinese sample: $\beta = .804$). Negative outcome expectations for blogging had significant direct impact on online posting anxiety (the American sample: $\beta = .562$; the Chinese sample: $\beta = .591$). Online posting anxiety had significant

direct impact on blog-maintenance intentions (the American sample: $\beta = -.269$; the Chinese sample: $\beta = -.242$).

Additionally, writing anxiety had significant indirect impact on blog-maintenance intentions through positive outcome expectations for blogging (the American sample: $\beta = -.426$, $\beta = .817$; the Chinese sample: $\beta = -.416$, $\beta = .804$), blogging self-efficacy and online posting anxiety (the American sample: $\beta = -.527$, $\beta = -.546$, $\beta = -.269$; the Chinese sample: $\beta = -.522$, $\beta = -.587$, $\beta = -.242$), and negative outcome expectations for blogging and online posting anxiety (the American sample: $\beta = .241$, $\beta = .562$, $\beta = -.269$; the Chinese sample: $\beta = .244$, $\beta = .591$, $\beta = -.242$). Social anxiety had significant indirect impact on blog-maintenance intentions through positive outcome expectations for blogging (the American sample: $\beta = -.215$, $\beta = .817$; the Chinese sample: $\beta = -.178$, $\beta = .804$), and negative outcome expectations for blogging and online posting anxiety (the American sample: $\beta = .253$, $\beta = .562$, $\beta = -.269$; the Chinese sample: $\beta = .217$, $\beta = .591$, $\beta = -.242$). Blogging self-efficacy (the American sample: $\beta = -.546$; the Chinese sample: $\beta = -.587$), positive outcome expectations for blogging (the American sample: $\beta = .323$; the Chinese sample: $\beta = .352$), and negative outcome expectations for blogging (the American sample: $\beta = .562$; the Chinese sample: $\beta = .591$) had significant indirect impact on blog-maintenance intentions through online posting anxiety (the American sample: $\beta = -.269$; the Chinese sample: $\beta = -.242$).

However, three paths were not significant for both samples. Specifically, the path from social anxiety to blogging self-efficacy (H3a) was not significant. The path from blogging self-efficacy to blogging-maintenance intentions (H4d) and the path from

negative outcome expectations for blogging to blogging-maintenance intentions (H6b) were not significant.

The results of the group comparison showed that there were significant differences between the betas of the paths for H3b (social anxiety to positive outcome expectations for blogging, $p=.030$), H4c (blogging self-efficacy to online publishing anxiety, $p=.070$), H4d (blogging self-efficacy to blog-maintenance intentions, $p=.000$), and H5a (positive outcome expectations for blogging to online publishing anxiety, $p=.073$).

To examine the possibility that demographic differences between the Chinese and American samples could explain differences in blog-maintenance intentions, correlational analyses were performed, shown in Table 6.3. Gender was treated as a dummy variable and further correlated with other variables. The results suggested that gender correlated with social anxiety in the American sample.

Table 6.3. Gender's Correlations with Other Variables in both Samples

	American sample	Chinese sample
Social anxiety	-.204(*)	.098
Writing anxiety	-.075	.051
Blogging self-efficacy	.023	.021
Positive outcome expectations for blogging	.039	-.053
Negative outcome expectations for blogging	.073	.000
Online posting anxiety	-.110	.049
Blog-maintenance intentions	-.066	-.069

To further examine the effects of gender, a structural equation model was developed which incorporated gender as a control variable. The results suggested that

gender did not show a significant influence. After controlling for gender, the path coefficients, fix indexes only had very tiny changes. Thus, gender differences between the two samples were unlikely to explain the differing results.

In addition to the model showed above, rival theories suggest alternate models. For example, theories of social anxiety and writing anxiety have no role for outcome expectations and self-efficacy. This is depicted in Model 6.2 (Figure 6.2). In this model, writing anxiety and social anxiety predict online posting anxiety directly. The model showed that χ^2 (df = 14, N = 323) = 67.207, $p=.000$, NFI = .890, NNFI = .720, CFI = .907, RMSEA = .109. Yuan-Bentler correction model indicated that: χ^2 (df = 14, N = 323) = 54.588, $p=.000$, NFI = .909, NNFI = .781, CFI = .927, RMSEA = .095. This was not a good fitting model.

Social Cognitive Theory suggests an alternate causal ordering among anxiety and self-efficacy in which anxiety precedes self-efficacy and outcome expectations and has no direct relationship to intention. This was tested through Model 6.3, shown in Figure 6.3. In this model, writing anxiety and social anxiety influenced online posting anxiety directly. Online posting anxiety then predicted blogging self-efficacy and outcome expectations. The model did not fit. χ^2 (df = 20, N = 323) = 145.727, $p=.000$, NFI = .762, NNFI = .537, CFI = .779, RMSEA = .140. Yuan-Bentler correction model indicated that: χ^2 (df = 20, N = 323) = 131.113, $p=.000$, NFI = .780, NNFI = .580, CFI = .800, RMSEA = .132.

Another possibility is that anxiety precedes outcome expectations. That is because efficacy beliefs will influence anxiety. Self-efficacy and anxiety will then predict outcome expectations. This was tested through Model 6.4 in Figure 6.4. The model

showed χ^2 (df = 18, N = 323) = 94.736, $p=.000$, NFI = .845, NNFI = .686, CFI =.865, RMSEA =. 115. Yuan-Bentler correction model indicated that: χ^2 (df = 18, N = 323) = 76.825, $p=.000$, NFI = .871, NNFI =.753, CFI =.894, RMSEA =.101. This was a worse fit comparing to the model with blogging self-efficacy and blogging outcome expectations beliefs preceding online posting anxiety.

Finally, in the interest of parsimony, we must consider whether online posting anxiety is a necessary construct. In figure 6.5 we present a model (Model 6.5) in which outcome expectations and self-efficacy are directly connected to blog-maintenance intentions in which other anxiety measures directly cause intentions as well. χ^2 (df = 2, N = 323) = 4.476, $p=.128$, NFI = .999, NNFI = 1.050, CFI =1.000, RMSEA =. 000. Yuan-Bentler correction model indicated that: χ^2 (df = 2, N = 323) = 4.383, $p=.139$, NFI = .999, NNFI =1.056, CFI =1.000, RMSEA =.000.

Kline suggested two ways to compare fit indexes of models: values and significances of χ^2 index and values of χ^2/df . Low and nonsignificant values of the χ^2 are desired. And the value of χ^2/df should be smaller than 3 (Kline, 1998). Based on these criteria, Model 6.5 was a worse fitting model comparing with the model containing online posting anxiety (Model 6.1) because it had fewer degree of freedom and higher χ^2/df values.

Akaike Information Criterion (AIC) is another goodness-of-fit measure which can be used to compare models with differing numbers of latent variables. AIC adjusts model chi-square to penalize for models lacking of parsimony and overparameterization. The lower AIC reflects the better-fitting model (Burnham & Anderson, 1998).

Thus, five models were tested. The original proposed model with blog-maintenance intentions as the dependent variable was still the best fit model. Table 6.4 present the fit indexes of these models.

***Table 6.4.** Fit Indexes of Structural Models.*

	χ^2	df	χ^2/df	p	AIC
Model 6.1	48.404	25	1.936	.003	-1.596
Model 6.2	54.588	14	3.899	.000	26.588
Model 6.3	131.113	20	6.556	.000	91.113
Model 6.4	76.825	18	4.268	.000	40.825
Model 6.5	4.383	2	2.191	.139	-3.617

Table 6.1. Means, Standard Deviations, Reliability Estimates, and Intercorrelations for Study Variables for the American Sample

	Social anxiety	Writing anxiety	Blogging self-efficacy	Positive outcome expectations for blogging	Negative outcome expectations for blogging	Online posting anxiety	Blog-maintenance intentions	Mean	SD
Social anxiety	.829							3.995	1.573
Writing anxiety	.448(**)	.880						2.896	1.118
Blogging self-efficacy	-.320(**)	.514(**)	.869					4.823	1.303
Positive outcome expectations for blogging	-.225(**)	.597(**)	.641(**)	.851				4.986	1.154
Negative outcome expectations for blogging	.207(*)	.202(*)	-.066	-.052	.853			2.440	1.333
Online posting anxiety	.432(**)	.263(**)	-.240(**)	-.020	.396(**)	.791		2.902	1.360
Blog-maintenance intentions	-.193(*)	.485(**)	.293(**)	.532(**)	-.231(**)	-.166(*)	.906	5.399	1.209

Table 6.2. Means, Standard Deviations, Reliability Estimates, and Intercorrelations for Study Variables for the Chinese Sample

	Social anxiety	Writing anxiety	Blogging self-efficacy	Positive outcome expectations	Negative outcome expectations	Online posting anxiety	Blog-maintenance intentions	Mean	SD
Social anxiety	.694							3.562	1.311
Writing anxiety	.132	.823						2.906	1.069
Blogging self-efficacy	-.105	-.417(**)	.791					4.222	1.220
Positive outcome expectations	.011	-.453(**)	.515(**)	.704				5.013	1.049
Negative outcome expectations	.142	.086	.136	.056	.786			2.975	1.240
Online posting anxiety	.261(**)	.200(**)	-.169(*)	-.085	.431(**)	.656		3.137	1.313
Blog-maintenance intentions	-.009	-.492(**)	.490(**)	.561(**)	-.075	.269(**)	.891	5.148	1.339

US: .000

CN: .000

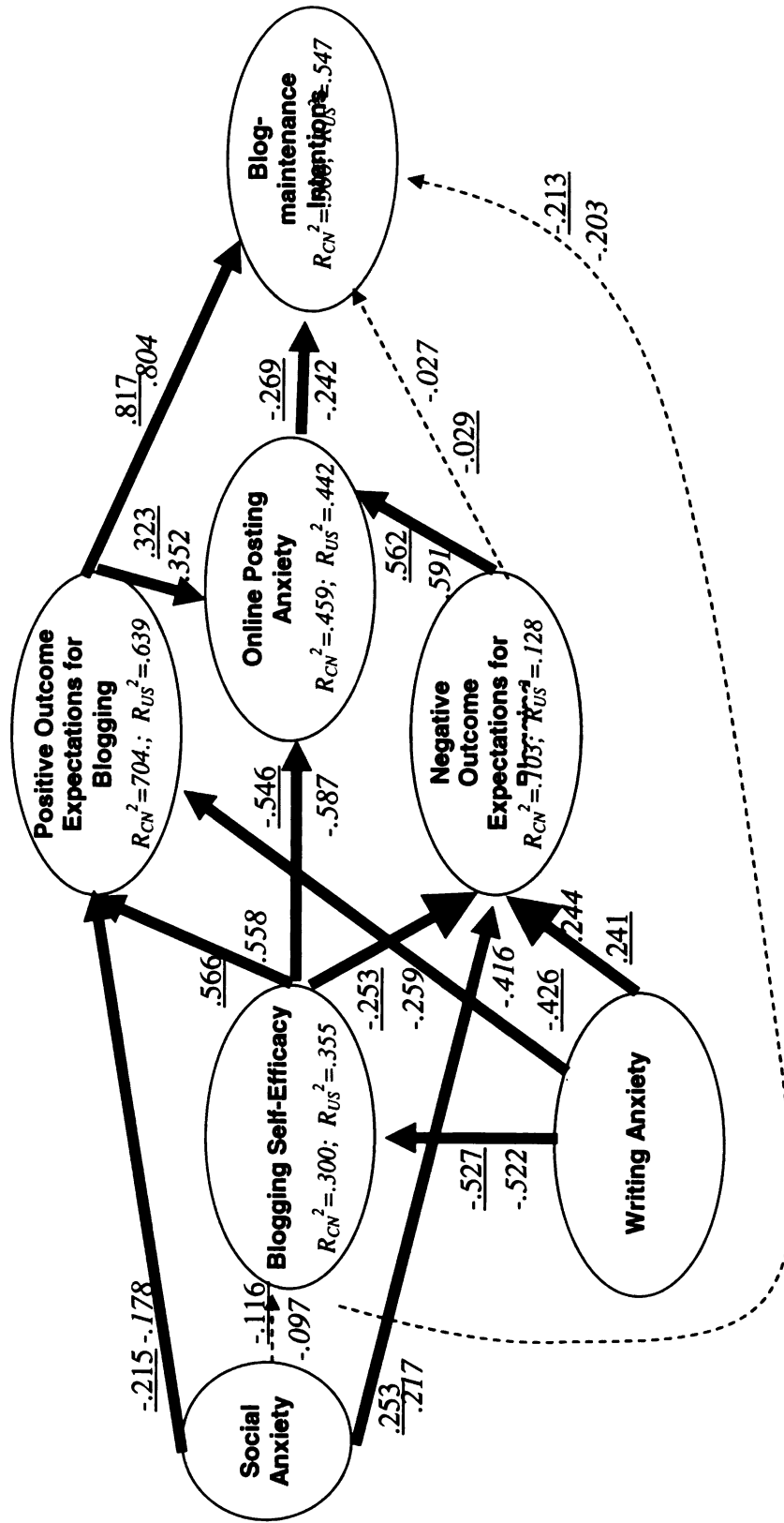
Significant in the U.S. Group:

Significant in the C.N. Group:

Significant in both groups:



Figure 6.1. Model 6.1 Blog-maintenance Intentions as the Dependent Variable



US: .000

CN: .000

Significant in the U.S. Group:

Significant in the C.N. Group:

Significant in both groups:

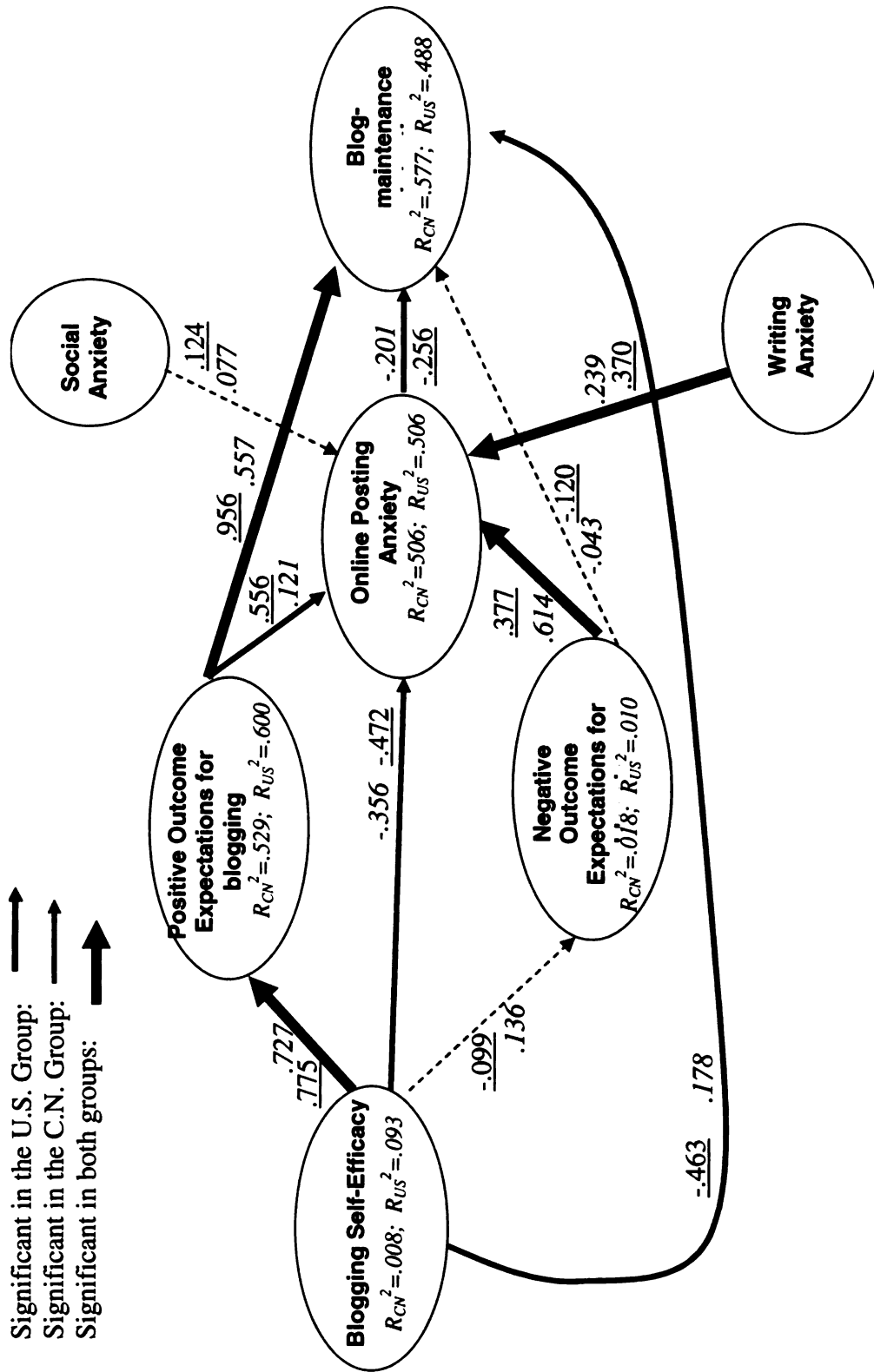


Figure 6.3. Model 6.3 Online Posting Anxiety Precedes Cognition

US: .000
 CN: .000
 Significant in the U.S. Group: \longrightarrow
 Significant in the C.N. Group: \longrightarrow
 Significant in both groups: \longrightarrow

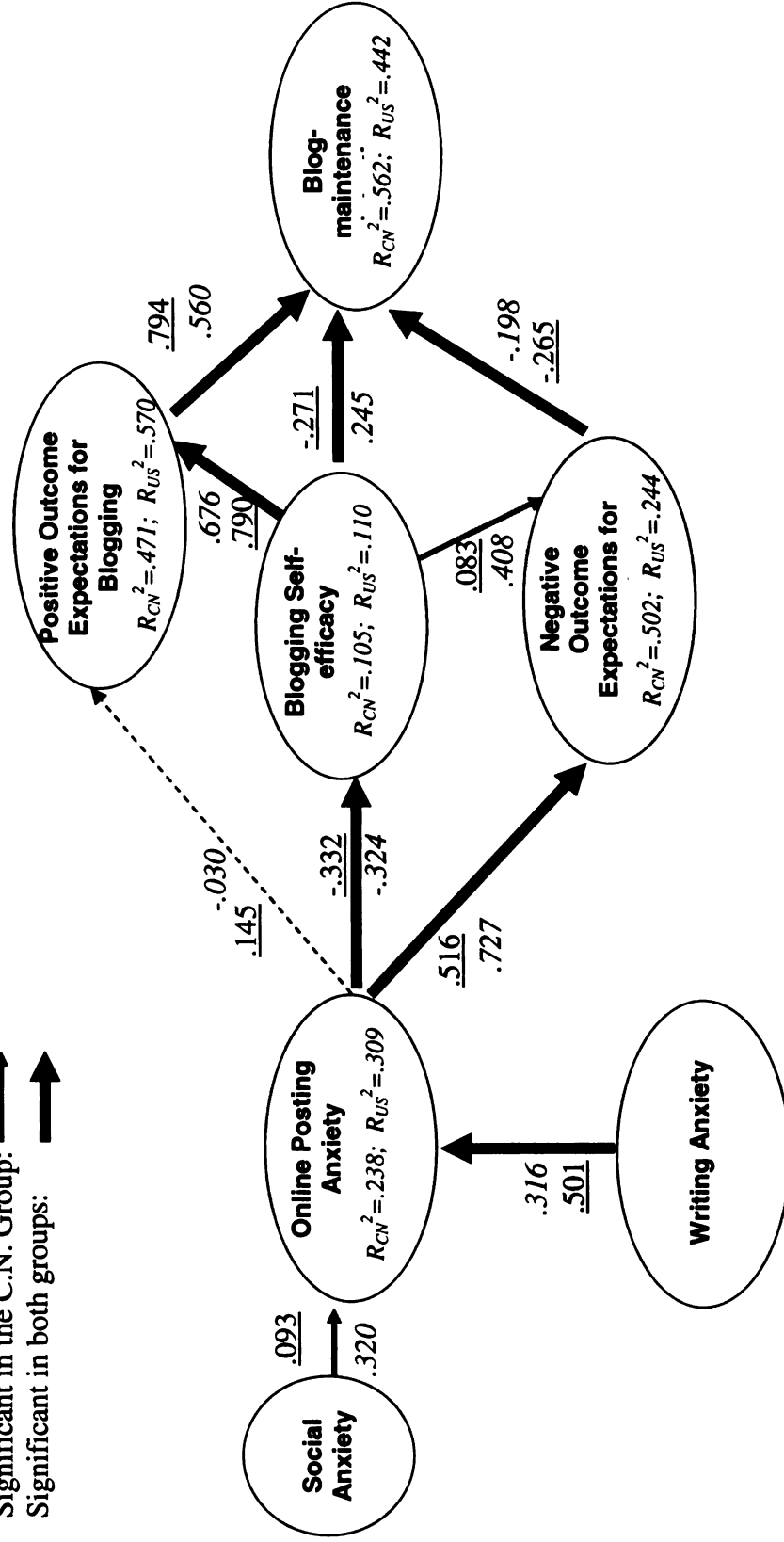
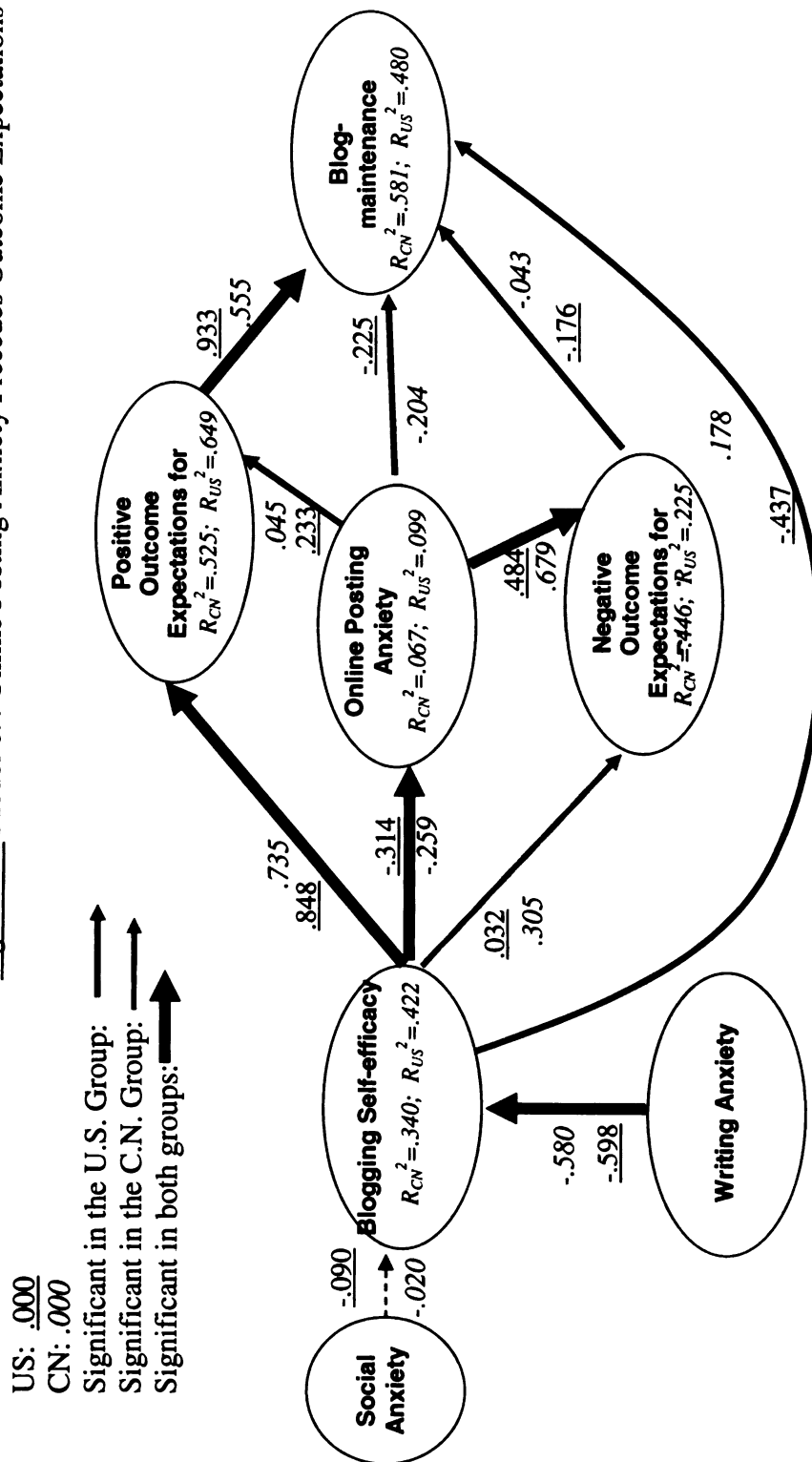


Figure 6.4. Model 6.4 Online Posting Anxiety Precedes Outcome Expectations



US: .000

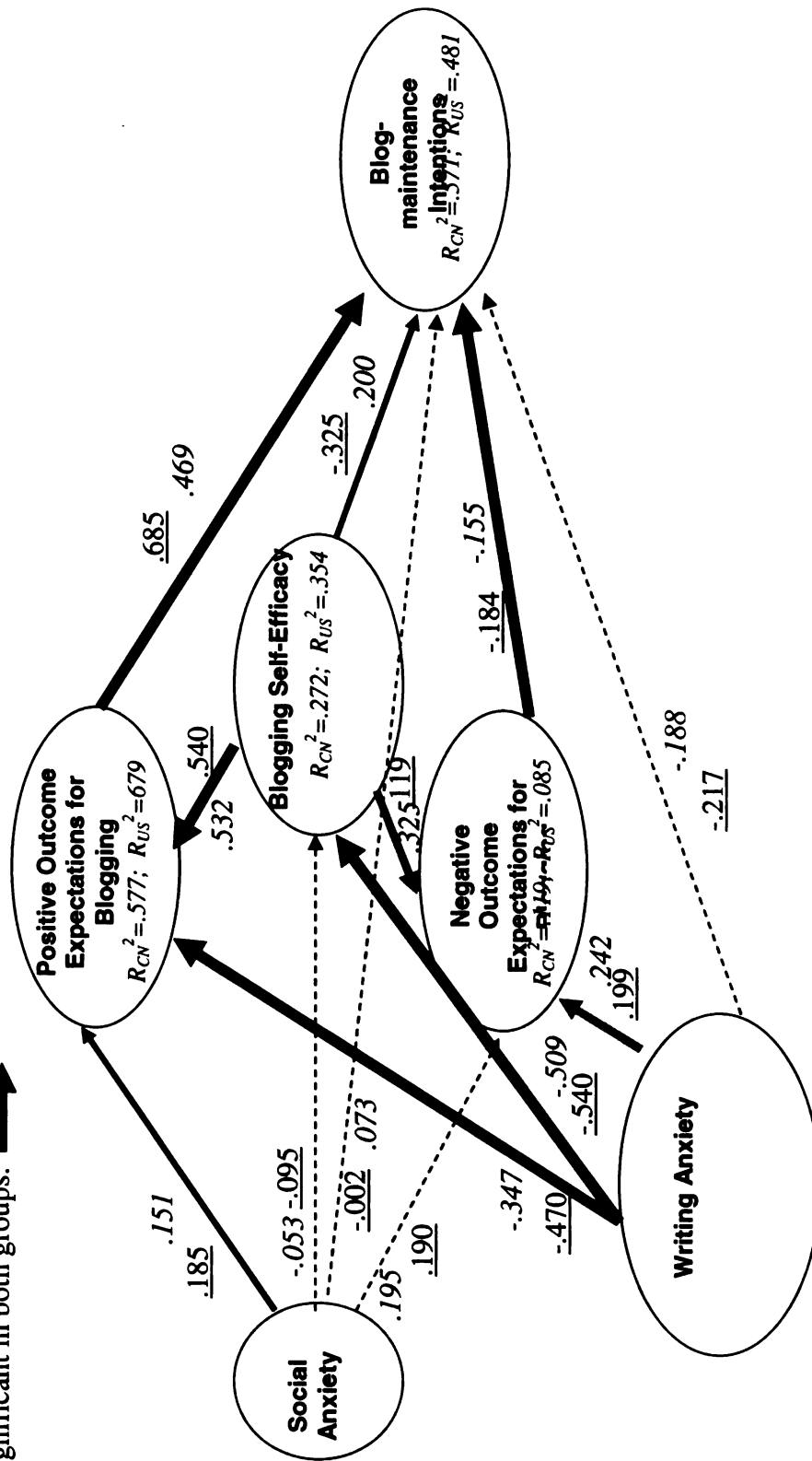
CN: .000

Significant in the U.S. Group: \longrightarrow

Significant in the C.N. Group: \longrightarrow

Significant in both groups: \longrightarrow

Figure 6.5. Model 6.5 Model without Online Posting Anxiety



CHAPTER 7

DISCUSSION

Guided by social cognitive theory and related literature, this dissertation sought to develop a better theoretical explanation for predicting American and Chinese bloggers' blog-maintenance intentions. The goals of this research were: (1) establish evidence for the existence of online posting anxiety; (2) develop valid and reliable scales to measure blogging self-efficacy, positive outcome expectations for blogging, negative outcome expectations for blogging, and online posting anxiety; (3) empirically test the four new scales, (4) investigate the relationships between more general anxiety variables, specific blogging cognition, and specific blogging anxiety and their effects on blog-maintenance intentions; and (5) examine the influence of culture on blog-maintenance intentions. The unique contribution of this research was to employ the social cognitive theoretical perspectives to examine anxiety in the CMC realm.

To achieve these goals, three studies were conducted. Study 1 applied in-depth interview methods to understand American and Chinese bloggers' salient beliefs of self-efficacy and outcome expectations and to explore the existence and characteristics of online posting anxiety. Study 2 employed a pretest and posttest survey design to establish the Cronbach's coefficient alpha, test-retest reliability, content validity, criterion-related validity, and construct validity of the new scales. The Main Study used an online survey to assess the 16 hypotheses and the structural model.

Overall, results from this dissertation research provided evidence for the existence of an online posting anxiety construct. The results of Study 2 showed that online posting

anxiety demonstrated moderate correlations with relevant anxiety measures with correlations ranging from .281 to .586. The Main Study provided further evidence of concurrent and predictive validity. Online posting anxiety again showed moderate correlations with writing anxiety, social anxiety, and blog-maintenance intentions.

To summarize, the blogging self-efficacy, positive outcome expectations for blogging, negative outcome expectations for blogging, and online posting anxiety scales demonstrated good reliabilities and validities. The proposed structural model was supported. Cultural influences on blogging were discovered. In this chapter, the discussions of the model will be presented, followed by research implications, future research areas, and limitations.

7.1. The Role of General Anxiety Variables

Trait perspectives have been criticized for neglecting the impact of a situation on behavior. This criticism does not discount the trait perspective. Perhaps equally important is the issue of how trait variables could contribute to the social cognitive model. The structural model in this dissertation employed a new strategy to develop a trait-situation congruity theoretical model. Two blogging-relevant anxiety types (social anxiety and writing anxiety) were employed. These situation-relevant anxiety concepts were treated as distal influences on blog-maintenance intentions with the blogging-specific cognitive and anxiety variables as mediators. The results suggested that writing anxiety showed a significant impact on blogging self-efficacy as well as positive and negative outcome expectations for blogging. Social anxiety had a significant impact on positive and negative outcome expectations for blogging. This finding added to social cognitive theory. Social cognitive theory has been criticized for underemphasizing trait perspectives.

Instead of abandoning trait perspectives, this model integrated trait and social cognitive perspectives. Specifically, the model indicated that people's general tendencies to be uneasy in relevant situations (social and writing) are personal factors that reflect an interaction between P (personal factors) and E (environment factors). So instead of positing vague and general principles of the triad causations among P (personal factors)—E (environment factors)—B (behavioral factors), this research specified a type of PE that is relevant to intention.

Writing anxiety was a powerful independent variable in the model, with its significant impact on all the three blogging cognitive variables. It should be noted that writing is not required for blogging. Many blogs only consist of pictures, links, or cited articles. Bloggers can bypass writing and use other multimedia content to blog. Blogs, however, are an online text communication genre. Other multimedia content can help to achieve the desired goals of bloggers. To really benefit from blogging, people have to employ writing. That's why writing anxiety was important in our research.

Social anxiety significantly predicted positive and negative outcome expectations for blogging. Its impact on blogging self-efficacy, however, was not significant. The results of Study 2 may provide explanations as to why social anxiety did not predict blogging self-efficacy. The findings suggested that the majority of bloggers think that blogging is a simple task. Socially anxious people become tense when an environment provides threatening stimuli. When socially anxious people think about blogging, they might not experience visceral arousal because they may not anticipate threats to their efficacy beliefs. This might explain why social anxiety does not predict blogging self-efficacy.

To summarize, the general anxiety variables demonstrated mixed findings. Their predictabilities varied. Writing anxiety was an important predictor. Five items of WAT with good validity were selected to measure writing anxiety. The exclusion of confounding items improved writing anxiety's predictability. Social anxiety predicted both positive and negative outcome expectations for blogging. A tentative conclusion—general anxiety variables influence specific blogging cognitions—may be drawn.

A more important task for future studies is to find more variables that are connected with relevant situations or classes of situations for which they have predictive implications, like writing anxiety in this model. For example, fear of negative evaluation should be relevant for blogging. Fear of negative evaluation is defined as “apprehension about others’ evaluations, distress over their negative evaluations, avoidance of evaluative situations and the expectation that others would evaluate oneself negatively” (Watson & Friend, 1969). The results of Study 2 and the Main Study suggested that audience is an important source of blogging outcome expectations and online posting anxiety. The presence of audiences implies evaluations. Fear of negative evaluations may be a source of concern for bloggers. However, before employing the measure of fear of negative evaluations, scholars should check its validity because its definition is not consistent with negative outcome expectations and behavioral avoidance.

7.2 The Role of Blogging Self-Efficacy and Outcome Expectations for Blogging

Self-efficacy and outcome expectations are important variables that influence people's intention. In this study, a blogging self-efficacy scale, positive outcome expectations for blogging scale, and negative outcome expectations for blogging scale were developed and tested.

For both the American sample and the Chinese sample, blogging self-efficacy had a significant impact on positive outcome expectations for blogging, negative outcome expectations for blogging, and online posting anxiety. The results provided another support for social cognitive theory. The current model supported the view that those bloggers who are confident about their blogging skills will conceive higher positive outcome expectations for blogging, lower negative outcome expectations for blogging, and lower online posting anxiety. Following this argument, a significant positive path from blogging self-efficacy to blog-maintenance intentions was anticipated. Contrary to the hypothesis, however, the path from blogging self-efficacy to blog-maintenance intentions was a nonsignificant one.

Bloggers generally perceive blogging as a simple task that does not require specific skills. Blog websites provide blogging software and professional-looking design templates that make the process of blogging easy. Nevertheless, there are difficult skills required for high-end blogging, for example, modifying the existing templates, designing a technically savvy blog, and using a blog to present a unique personality. But difficult skills usually do not serve as a threshold for basic blogging. A minimal understanding of word processing software and Internet access can be enough for people to blog. To be a good blogger, however, blogging self-efficacy is important. This argument was partly supported by Marlow's social network analysis of blogs. He randomly sampled blogs using an aggregator, finding a strong relationship between investment in the blog and payoff in terms of audience size and feedback. His data showed that blog communities reward bloggers who put time into their work (Marlow, 2006b). It is reasonable to hypothesize that the more time bloggers invest, the more skills they can master and the

higher the self-efficacy levels they can achieve. Put another way, blogging self-efficacy might not be related to blog-maintenance intentions after people set up a blog. It should be related to how well people blog. This might be the reason that blogging self-efficacy predicted positive outcome expectations for blogging and negative outcome expectations for blogging and online posting anxiety, but not blog-maintenance intentions. Future studies may apply other dependent variables that relate to how well people blog, such as blogging achievement and the size of the audience, to examine the effects of blogging self-efficacy.

Additionally, blogging self-efficacy generality can be a variable for further analysis. Bandura defined self-efficacy generality in terms of how well judgments of efficacy for one task transfer into self-efficacious behavior of other tasks similar in nature (Bandura *et al.*, 1980). Blogging can be seen as multiple tasks: blog writing, blog reading, and blog commenting. In the current research, the newly developed blogging self-efficacy measure focuses on blog writing self-efficacy. To test the generality of this measure, its correlations with blog writing, blog reading, and blog commenting were examined. Blogging self-efficacy was significantly correlated with all three blogging behaviors in both samples. The correlations ranged from .208 to .287 ($p < .01$). The generality of the blogging self-efficacy scale was supported. The scale can be used in future studies about blog reading or commenting.

The blogging outcome expectations construct is divided into positive outcome expectations for blogging and negative outcome expectations for blogging. The two types of outcome expectations showed mixed results to their determinants—online posting anxiety and blog-maintenance intentions. The path from positive outcome expectations

for blogging to blog-maintenance intentions was significant. Contrary to our hypothesis, however, it had a positive influence on online posing anxiety.

It should be noted that the sign of Pearson product-moment correlation between positive outcome expectations for blogging and online posting anxiety was negative ($r = -.020$ in the U.S. sample and $r = -.085$ in the Chinese sample). Statistically, the flipping of the signs in the structural equation model might be caused by multicollinearity and suppression effect (Cohen *et al.*, 2003; Tzelgov & Henik, 1991). VIF (variance inflation factor) and tolerance values were calculated in regression analysis using SPSS 14.0 to check for multicollinearity (See Table 7.1). Cohen *et al.* (2003, p. 422) posited that a commonly used rule of thumb is that (1) any VIF of 10 or more and/or (2) tolerance values of .10 or less provide evidence of serious multicollinearity involving the corresponding independent variable. The effect of multicollinearity was excluded in the current study.

Table 7.1. VIF and Tolerance Value of Factors

Factors	Tolerance		VIF	
	American Sample	Chinese Sample	American Sample	Chinese Sample
Writing anxiety	.677	.704	1.476	1.421
Social anxiety	.512	.902	1.953	1.108
Blogging self-efficacy	.511	.632	1.955	1.582
Positive outcome expectations for blogging	.453	.685	2.205	1.460
Negative outcome expectations for blogging	.824	.645	1.214	1.551
Online posting anxiety	.580	.542	1.725	1.845

Assuming Y is a dependent variable and X_1 and X_2 are two independent variables, Cohen *et al.* (2003) stated that suppression is present when either r_{Y1} or r_{Y2} is

less than the product of the other and r_{12} , or when r_{12} is negative (assuming positive r_{Y1} and r_{Y2}):

$$r_{Y1} < r_{Y2} \times r_{12} \quad (1)$$

$$r_{Y2} < r_{Y1} \times r_{12} \quad (2)$$

If Equation 1 or Equation 2 holds, the partialled coefficients of X_1 and X_2 will be larger in value than the zero-order coefficients and one of the partialled coefficients may become negative (Cohen et al., 2003, p. 77).

Suppression was found using Cohen et al.'s (2003) equations in the American sample. There was suppression among blogging self-efficacy, positive outcome expectations for blogging, online posting anxiety, and blog-maintenance intentions. Moreover, negative suppression was identified in the current model (Maassen & Bakker, 2001; Tzelgov & Henik, 1991). The suppression effect was the reason for the positive path from positive outcome expectations for blogging to online posting anxiety.

Negative outcome expectations for blogging had a significant impact on online posting anxiety. The path from it to blog-maintenance intentions was not significant. Thus, both positive and negative outcome expectations for blogging generated complex influences on online posting anxiety and blog-maintenance intentions. In general, scholars have suggested that, when using technology, communicative outcomes are emergent from people's interactions with the technology and others with whom they are communicating (Waskul & Douglass, 1997). In the case of blogging, outcomes are jointly decided by bloggers and audiences.

The existence of audiences is part of what makes a blog a unique medium. Audiences are one of the major forces that shape blogging outcomes; self-presentation

exists because there are audiences to present the self to; audiences are the friends bloggers want to make and the relationship bloggers manage to maintain; audiences are the source of the social support and attention bloggers want. Additionally, an unknown and unwanted audience can lead to social pressures, safety concerns, embarrassment, privacy invasions, and other negative outcomes. Thus, the outcome expectation measure used here may have been incompletely specified.

Previous literature suggested diverse blogging gratifications. LaRose et al. applied social cognitive theory to frame the uses and gratifications perspective. They believed that media gratification can be seen in terms of the media user's behavioral outcome expectations (LaRose et al., 2001). Following LaRose's argument, previous literature identified diverse blogging outcome expectations. One finding of Study 1 was that bloggers' outcome expectations were very diverse. Trammell suggested that blogs are truly individual and are what the bloggers make them (Trammell, 2005). Li suggested that blogs serve a variety of ends for people. Bloggers can consciously satisfy their unique motivation by taking advantage of the characteristics of blogs as an open and free social venue for intrapersonal, interpersonal, and mass communication. The use of blogs is systematically associated with an individual's motivation for blogging (Li, 2005). Blogs do not fit into a single method of communication as other communication technologies do. Depending on bloggers and audiences, a blog could act as intrapersonal communication, one-to-many communication, one-to-one communication, or group communication. Different communication modes generate different communication outcome possibilities. Blogs could accommodate various outcomes for all communication modes. This is a challenge for the blog outcome expectation concept and measure

development. In this study, in the process of blogging outcome expectation measure development, 139 items were generated from the results of Study 1 and a brief content analysis of newspapers' portrayal of blogs. However, the final scales of positive outcome expectations for blogging and negative outcome expectations for blogging had only five items. It should be noted that most culturally specific items were removed to make the scales equivalent across cultures. This strategy improves generalization of the scales, but it decreases the power of the scales. This is a trade-off that blogger researchers may have to face when they conduct blog research.

One possible cause of the heterogeneity of the outcome expectation beliefs in this research is that most of the interviewees in Study 1 were diarists. Only one interviewee in the Chinese sample was a journalist. And two other interviewees in the American sample kept K-blogs. Compared to other blog types, personal-journal-type bloggers may have more diverse outcome expectations. It should be noted that it is exactly this population that has attracted more and more blog motivation researchers.

The concept of modally salient beliefs, which was proposed by the theory of planned behavior, may provide a solution. The theory of planned behavior suggested that the most frequently mentioned beliefs in the pilot sample constitute the set of beliefs salient in the population, named modally salient beliefs (Ajzen, 1991). Scholars further extended the construct of modally salient beliefs to incorporate heterogeneity in the construct. Bel argued that certain behavior is mainly an individual experience and that belief structures are expected to be highly idiosyncratic. Modally salient beliefs may have limitations to be applied to the behavior because few beliefs are shared among the sample. The author suggested that heterogeneity should be modeled along with modally salient

beliefs. In other words, Bel applied heterogeneity as another dimension of modally salient beliefs. Bel used the discrepancy between the most important outcome beliefs and modally salient beliefs to measure the degree of heterogeneity (Bel, 2004). Bel's approach may be used in future blogging research. Blogging modally salient beliefs and the degree of heterogeneity may provide explanatory power for blog-maintenance behavior.

The heterogeneous nature of blogging outcome expectations concepts can be an advantage for blogging research as well. First of all, blogging outcome expectations should be a powerful factor in predicting blogging behavior, since bloggers purposefully employ different communication modes to blog. This argument was supported by the structural model. Positive outcome expectations for blogging was the most powerful predictor of blog-maintenance intentions. Secondly, previous literature in interpersonal communication, group communication, and mass communication can be examined to help develop and define the blogging outcome expectations concept.

The concept of negative outcome expectations for blogging was not a significant predictor of blog-maintenance intentions. Generally, when behavior has been associated with negative expectations, people may be forced to choose between withdrawing from the behavior and engaging in the behavior and expecting negative outcomes. It is possible that the bloggers with negative outcomes self-selected from the author's samples. They were not as reachable through the websites from which participants were recruited. This is an important limitation of this study.

It is also reasonable to suggest that bloggers accept the risks associated with blogging and blog anyway. Perhaps the negative outcomes are simply an unavoidable

consequence of blogging. Bortree suggested that bloggers carved out a blogging community for themselves, a community in which they believe they can express their opinions and thoughts freely without fear of interference. On the other hand, by sharing as they do, they make themselves vulnerable (Bortree, 2005). Blogging is a special practice in that every advantage can lead to a disadvantage. For example, an audience can bring friendship and social support. It can also bring social pressure and misunderstanding. Recording one's life and releasing one's feelings can generate happiness. It can also encourage privacy invasions and information misuse. Bloggers are mindful of this feature of blogging. Ada, an interviewee for Study 1, has two blogs at different blogging websites. She mentioned the advantages and disadvantages of both blogs:

For my xxx blog the one where I promote my writing: advantages - satisfying a desire to showcase writing and having a large number of people reading it; disadvantages - can't share with friends, completely anonymous... For my personal private journal: advantages - the ability to write whatever without judgment; disadvantages - inability to share with friends.

There are also compromises that bloggers have to make. Another interviewee, Mike, is an artist, who displays his artwork on his blog. He worried that "someone uses my image without permission," however, he is "willing to take a risk to have my work seen." Jason puts his blog link on his portfolio page. He admitted that, "I have to be careful to not post things that might be detrimental to my career. However, I don't want it to be sterile and boring."

Every coin has two sides. The tight connections between positive outcome

expectations for blogging and negative ones lead bloggers to accept the possibilities of negative outcomes and still blog. Their desire for the positive outcomes outweighs their perceptions of the negative ones. This might explain the insignificant path from negative outcome expectations for blogging to blog-maintenance intentions. It also serves as evidence for the existence of online posting anxiety.

7.3 Online Posting Anxiety

This dissertation introduced, defined, and empirically tested a construct that captures a situational anxiety associated with blogging. Online posting anxiety is defined as a joint effect of two separate factors, visceral arousal and cognitive self-labeling of the internal state, as anxiety in blogging.

7.3.1 Social Cognitive Definition of Online Posting Anxiety

There are many definitions of anxiety. For example, Beck defined anxiety as a reaction to perceived threats (Beck, 1976; Beck et al., 1985). Izard believed that anxiety is a hybrid or blend of a number of emotions—fear, distress, shame, anger, and interest (Izard, 1972, 1977). Reviewing the literature, Spielberger and Sarason concluded that anxiety has been conceptualized as a stimulus for behavior, as a learned drive, as a personality variable, and as a complex response (Spielberger & Sarason, 1991).

The definition of online posting anxiety is adapted from Bandura's definition of anxiety. The results of the model testing suggested that the social cognitive definition of anxiety can better capture the characteristics of anxiety than other definitions. Anxiety is not just a reaction to perceived threats. Situational congruent self-efficacy and positive and negative outcome expectations generate anxiety. Anxiety is also not a hybrid of emotions associated with fear, distress, shame, and anger. Visceral arousal is the common

phenomenon that anxiety shares with fear, distress, shame, and anger. The cognitive labeling of the state is what differentiates anxiety from other emotions. Therefore, social cognitive theory can enrich anxiety theories by adding the cognitive labeling process to the emotional state view of anxiety and can also add important variables that integrate environment and personal factors to explain anxiety's etiology.

7.3.2 Online Posting Anxiety in Lasswell's Transmission Model of Communication

In line with social cognitive theory, online posting anxiety is rooted in a unique form of online communication that is characterized by personal media with public attention. Lasswell's transmission model of communication can explain features of blogging. In blogging, a communicator only publishes the content that he or she wants to publish. Communicators have a high level of control over the content. However, the level of selectivity is low. Communicators cannot selectively reveal information to one audience and not to others.

As a communication channel, blogging does not require extra costs. A computer, Internet access, and a basic knowledge of installing software might be the only requirements. Additionally, the Internet is a network that is characterized by hyperlinks, interactivity, and anonymity. Turkle argued that the Internet gives us a new boundary that we stand on:

We stand on the boundary between worlds we understand through transparent algorithm and worlds we understand by manipulating opaque simulations. Our current experience of life "betwixt and between" recalls what the anthropologist Victor Turner termed a "liminal moment," a moment of passage. It is a moment of anxiety, but it is also a moment of invention and creativity. When Turner spoke of

liminality, he understood it as a transitional experience, but for us, living the tension between physical and virtual and between analysis and simulation seems a permanent state of affairs, our permanent existence on the edge of things. (Turkle, 2004)

The new boundary also influences the message the channel transmits. Waskul and Douglass suggested that electronic media allow us to view public activities privately and view private activities publicly (Waskul & Douglass, 1997). The distinction between private and public information is blurred online (Papacharissi, 2007). Besides ambiguousness of private and public information, blog messages are also marked by high volumes, diversity, and unequal qualities. There are no formal gate-keeping processes in blogging. The varied qualities of the content, however, do not mean that there are no rules governing blogging. The results of the Main Study suggested that the variable blogging positive outcome expectation was the most important determinant of blog-maintenance intentions. Low-quality blogging is unlikely to be awarded with desired outcomes. This will decrease the bloggers' blog-maintenance intentions; they even may quit altogether. In the world of blogs, self-selectiveness, rather than formal gate-keeping, regulates the process of content creation. This may provide another direction for future studies of blog-maintenance intentions. Low-quality content may be a cause of high negative outcome expectations and low positive outcome expectations, which will in turn determine blog-maintenance intentions.

Receiver is not a fixed role in blogs. Depending on the situation, a given person can be a communicator or a receiver. Both the communicator and the receiver are blog content contributors. From a communicator's perspective, receivers can be divided into

wanted or unwanted, known or unknown (Lenhart, 2005). Online receivers are fragmented. Communicators cannot fully comprehend their audience. Lenhart suggested that the blog audience is made up of people from different parts of an author's life, or from different experiential, geographic, or moral backgrounds (Lenhart, 2005). The "easy entry, easy exit" model also applies to receivers. The receiver is on a shifting base.

It should be noted that in Study 1, interviewees were asked the following questions about audiences directly: "Who do you imagine your readers to be? Do you think about your readers when you blog?" The results indicated that bloggers were constantly aware of their audience. They did not perceive their audiences as specific individuals. Instead, they put their audiences into different social categories: family members, friends, and colleagues were the answers they gave when asked about "whom do you imagine your readers to be?" Moreover, the results of the interviews also suggested that bloggers further divided these social categories into social subcategories. For example, Alex mentioned that he blogs to communicate with his family in California, his relatives in Boston, his high school and college friends all over the United States, his football friends in Pittsburgh, his colleague at the institute where he works, and his colleagues in India. Another interviewee, Ming (not her real name), told me that:

I broke up with my boyfriend last month. I cannot write this on my blog. There are so many people on my MSN list, including my colleagues in the company I work and the colleagues in other companies. I really can't talk about my private life on my blog ... My company colleagues may feel sorry for me and I will feel like I lost face. It could impair my relationship with my colleagues in other

companies. If they knew my weaknesses, they might have taken advantage of them.

It seems that bloggers use these social subcategories when they think about their audiences and related outcome expectations. Although audiences have been noted as a shifting base, gaining or losing an individual reader might not have a very significant influence on most bloggers because the social subcategories of audiences are still present. Previous studies developed typologies to identify audiences, such as wanted versus unwanted. Future studies may examine the subsocial categories. These categories are directly related to how bloggers perceive blogging outcomes.

The specific features of blogging communicator, message, channel, and receiver constitute a unique online environment that may bring online posting anxiety. Buss listed a few situations that may bring about anxiety (Buss, 1980). The author suggested that novel situations, feeling conspicuous, unfamiliarity with the norms, and excessive attention can create anxiety. In novel situations and when unfamiliar with the norm situation, people do not know how to react. The uncertainty and unpredictability of the situation generates anxiety. In situations when people feel conspicuous or receive excessive attention, they experience anxiety because of social evaluations (Buss, 1980). Blogging is a new Internet application in which the norms have not fully emerged. Bloggers are the centers of attention because it is their lives, thoughts, and perspectives that attract the audience. For blogging, novelty, unfamiliarity, dissimilarity, uncertainty, and excessive attention induce online posting anxiety. It is worth pointing out again that these environmental factors do not solely directly influence online posting anxiety. They interact with social cognitive variables. Novelty, unfamiliarity, dissimilarity, uncertainty,

and excessive attention influence self-efficacy beliefs, which predict bloggers' outcome perceptions. The self-efficacy and outcome expectation beliefs will then determine online posting anxiety as well.

7.3.3 Online Posting Anxiety as a Process

Any theory of anxiety must address both content and process (Barrett *et al.*, 2007). The theory of online posting anxiety presented here considers which factors in blogging situations cause anxiety. In integrating social cognitive theory and anxiety theories, the theory of online posting anxiety argues that blogging congruent anxiety (social anxiety and writing anxiety) leads to blogging cognitive beliefs. The cognitive beliefs determine online posting anxiety. The concept of blog-maintenance intentions was decided by these cognitive beliefs and online posting anxiety. The results of the model supported the theory. The factors directly contributing to online posting anxiety include blogging self-efficacy, positive outcome expectations for blogging, and negative outcome expectations for blogging. Writing anxiety and social anxiety also indirectly influenced online posting anxiety through blogging self-efficacy and outcome expectations for blogging.

The direct paths from self-efficacy and outcome expectations to online posting anxiety provide further evidence of social cognitive theory. Cognition is a significant determinant of anxiety. The indirect paths from writing anxiety and social anxiety suggest a solution to the conflicting arguments of social cognitive theory. On one hand, Bandura firmly posited that cognition determines anxiety (Bandura, 1986). On the other hand, he acknowledged that one source of self-efficacy is affective arousal (Bandura, 1997). The online posting anxiety model proposed in this dissertation combined these two conflicting statements. This model argued that cognition influencing anxiety is the

basic principle. However, the causal relationship between cognition and anxiety is also decided by the scopes of the cognitive and anxiety variables. In the same level, cognition influences emotion. On different levels, higher-level anxiety influences lower-level cognition. The results of the structural model provided support for this new perspective.

A moderate amount of variance of online posting anxiety can be explained by blogging self-efficacy, positive outcome expectations of blogging, negative outcome expectations for blogging, social anxiety, and writing anxiety ($R^2 = .442$ in the American sample and $R^2 = .459$ in the Chinese sample). The variances might place doubts on the validity of new construct development. Since existing concepts can cover a large amount of online posting anxiety, do we really need to develop a specific concept of online posting anxiety? Additionally, the interview results suggested that writing anxiety, computer and Internet anxiety, and social anxiety are related to online posting anxiety. This brings the same question: is online posting anxiety a unique concept? Or it is just a form of self-efficacy and outcome expectations? Or it is a dimension of social anxiety, writing anxiety, or computer and Internet anxiety? The three items of the measure of online posting anxiety were examined to guarantee validity. Self-efficacy and outcome expectations were not confounded with online posting anxiety. Model 6.5 provides evidence for the parsimony of online posting anxiety. Online posting anxiety is a unique concept that can predict blog-maintenance intentions better than other types of anxieties.

7.3.4 Online Posting Anxiety as a Unique Concept

Social anxiety, writing anxiety, and computer and Internet anxiety are well-studied areas. Moreover, there has been a proliferation of self-report measures of social-communicative anxiety for new technology communication during the past few years.

Some people may suggest that adopting previous measures to examine blogging might be a more efficient approach than developing a new measure. Using existing measures may beget valid results. However, using general measures (e.g., social anxiety, writing anxiety, and computer anxiety) may omit important domain- or population-specific variables (Adamopoulos & Kashima, 1999). Existing theories and measures cannot fully capture the nature of blogging, as demonstrated in model 6.5.

Blogging is a unique practice that is different from other computer-mediated communication practices. Psychologists argue that it is essential to develop specific concepts because they can be provided with unambiguous definitions and thus lead to precision in making observations, taking measurements, and testing hypotheses. It also helps to avoid confusion in the interpretation of research findings (Crozier, 2001). Moreover, the focus on application-specific constructs provides a mechanism for ensuring that research attends to those factors that are intimately related to the application in question, which in turn can afford greater predictive abilities (Benbasat & Zmud, 2003).

Additionally, existing related theories and measures have limitations. Spielberger's trait-state theory was helpful in advancing the study of anxiety but is limited because it fails to specify any of the antecedents that are likely to cause A-state (Martens et al., 1990). McCroskey developed a typology of communication apprehension and argued that communication apprehension is a trait that is mostly decided by biological factors (McCroskey, 1984). The author's solution to measure this trait—adding four situational communication apprehension scores—betrayed his trait argument. Daly and Hailey (1984) realized the role of writing tasks, essay types, and classroom

environments in influencing writing apprehension. Unfortunately, they failed to generate a pure and valid measure of writing apprehension. Clarke's computer-mediated communication apprehension scale had the same problem (Clarke, 1991). Brown and colleagues developed a CMC anxiety construct and tried to explain the causes of CMC anxiety (Brown et al., 2004). In their model, computer anxiety and communication apprehension were employed as causes of CMC anxiety. Correlation, or indirect causation, instead of a direct causal relationship might be a more appropriate description of the relationship between computer anxiety, communication apprehension, and CMC anxiety. Subsequently, this dissertation defined and developed a new concept to describe blogging anxiety. Online posting anxiety is not the sum of these five anxiety types. It is related to these anxiety types. However, online posting anxiety is a unique concept because blogging is a unique practice.

7.4 Blog-Maintenance Intentions as the Dependent Variable

Blog-maintenance intention is a justified dependent variable for the current study. Many theories, such as the theory of planned behavior, posit that intention is a valid dependent variable (Ajzen, 1991). Many previous studies regarding technology use also applied behavioral intention as the dependent variable (Agarwal & Karahanna, 2000; Dabholkar & Bagozzi, 2002; Hsi-Peng *et al.*, 2005; Huang & Liaw, 2005; Luarn & Lin, 2005; Mathieson, 1991; Park, 2003b; Yining & Hao, 2002).

People choose to/not to perform a task for a variety of reasons. The results of the Main Study indicated that blog-maintenance intentions vary according to the bloggers' general anxiety types (social and writing anxiety), cognition (perceived efficacy beliefs, positive and negative outcome beliefs), and blogging-specific anxiety (online posting

anxiety). These variables can explain 54.7% of the variance of blog-maintenance intentions in the American sample and 50.6% of the variance in the Chinese sample.

Intention is also linked to subsequent action (Ajzen, 1991). Studies examining the intention-behavior relationship have reported a wide range of correlations. In their meta-analysis of the theory of reasoned action, Sheppard et al. reported intention-behavior correlations ranging from .10 to .94 (Sheppard *et al.*, 1988). In this dissertation, blog-maintenance intentions were examined. For most personal diary-type bloggers, blogging is a voluntary action. Many bloggers play with it as they would a “toy.” Bloggers blog not because they have to, but because they want to. It is reasonable to hypothesize that blog-maintenance intentions will lead to actual blog-maintenance behavior.

In fact, blog-maintenance behavior was measured as well. It was measured by questioning participants as to how many hours and minutes they spend blogging per weekday, per weekend, and yesterday, and how many hours and minutes they spend writing, reading, and commenting on blogs per week. The results indicated that a model that defined blog-maintenance intentions as a dependent variable was a better model than a model with blog-maintenance behavior as a dependent variable. Moreover, online posting anxiety failed to predict blog-maintenance behavior. The reasons for this insignificant path could be the sample bias. The bloggers who participated in this study may not experience high online posting anxiety. It is reasonable to hypothesize that bloggers who feel anxious about blogging will have low blogging frequency or stop blogging.

In the Main Study, for the American sample, 35.2% of participants updated their blogs during the last month, which indicated that 35.2% of participants in the sample

were still frequently updating their blogs. In the Chinese sample, 72.8% of participants updated their blogs during the last month. Effort was made to recruit participants who may have high online posting anxiety scores. Twenty invitation emails were sent to addresses retrieved from abandoned blogs. Fifty recruitment messages were posted as comments on abandoned blogs. These trials failed. It seems that abandoned bloggers are a hidden population that is hard to reach. A longitudinal study design may help to reach this population. Lenhart and Fox's Pew report about blogging provided this evidence. To recruit bloggers, they asked a nationally representative sample of American adults if they maintained a blog. They then called back these self-identified bloggers between July 2005 and February 2006. Twenty-nine percent of those called back said they were no longer keeping a blog or were not willing to take another survey (Lenhart & Fox, 2006). Therefore, to reach the high online posting anxiety population, we may start with contacting current bloggers. Another possible way is to post messages on currently updated blogs and invite those readers who were bloggers but stopped blogging to participate. The method used in this study failed to recruit the sample most valid for online posting anxiety studies, but it can benefit future studies.

Measurement problems may be the reason for the poor fit of the model, with blog-maintenance behavior as the dependent variable. Self-reported media behavior measures have long been criticized as unreliable (Collopy, 1996). Participants might have difficulties calculating the time they spend writing, reading, and commenting on blogs every week. Also, blog writing, reading, and commenting are totally different blog activities. Aggregating these three activities together might decrease the scale's reliability and validity. Future studies may develop more valid and more reliable measures of blog-

maintenance behavior. Moreover, factors that are important to blog-maintenance behavior, for example, perceived ease of use, social norms, and coping self-efficacy, may fail to be incorporated into the model. High coping self-efficacy can help bloggers to develop strategies to avoid negative outcomes and increase the performance of blog-maintenance behavior. Social norms can also determine blog-maintenance behavior because they are an important element of self-regulation. Incorporating these variables in future studies may increase the predictability of blog-maintenance behavior models.

7.5 Cultural Influences

The results of the Main Study suggested that the proposed structural model can be applied to both Chinese bloggers and American bloggers. H1—blogging self-efficacy, positive outcome expectations for blogging, negative outcome expectations for blogging, and online posting anxiety will predict blog-maintenance intentions for both American and Chinese bloggers—was supported. Bandura’s social cognitive view of culture was again supported. Self-efficacy, outcome expectations, and anxiety are universal factors that will influence individuals in different cultures.

The research question—what are the significant differences between the Chinese model and the American one—can be examined based on the results of the model. The results of the group comparison showed that there were significant differences between the betas of the paths for H3b (social anxiety to positive outcome expectations for blogging, $p = .030$), H4c (blogging self-efficacy to online publishing anxiety, $p = .070$), H4d (blogging self-efficacy to blog-maintenance intentions, $p = .000$), and H5a (positive outcome expectations for blogging to online publishing anxiety, $p = .073$). Specifically, social anxiety had a significantly larger influence on positive outcome expectations for

blogging in the American sample than in the Chinese sample. As to blogging self-efficacy, comparing to its influence in the Chinese sample, blogging self-efficacy had significantly less influence on online posting anxiety and more influence on blog-maintenance intentions in the American sample. Positive outcome expectations for blogging had a larger influence on blog-maintenance intentions in the American sample than in the Chinese sample.

It should be noted that the mean of the social anxiety scores was lower in the Chinese sample ($M = 3.562$) than in the American sample ($M = 3.995$). Chinese bloggers were generally less socially anxious than American bloggers. Chinese who are high in social anxiety might not even consider setting up a blog because of their social anxiety and perceptions of negative social outcomes. Put another way, the entry level for blogging is higher among Chinese than among American bloggers. Social anxiety had less influence on Chinese bloggers, though this might simply be because those who blog do not have many social anxiety concerns.

Bloggng self-efficacy had a greater influence on online posting anxiety in the Chinese sample than in the American sample. Chinese bloggers with low self-efficacy were more likely to experience online posting anxiety than American bloggers. The results of Study 1 indicated that Chinese bloggers believe blogging is “high technology.” One interviewee, Vivian (not her real name), has a master’s degree and needs to use a computer to work every day. She believed that a blog was “high technology,” and she didn’t start blogging until requested by her colleagues. This might explain why blogging self-efficacy plays a more important role in the experience of online posting anxiety. In comparison with American bloggers, Chinese bloggers perceived blogging to be more

difficult. This low self-efficacy makes them feel more anxious when blogging. This argument may be supported by the evidence that the mean values of blogging self-efficacy were larger in the American sample ($M = 4.823$) than in the Chinese sample ($M = 4.222$).

Blogging self-efficacy and positive outcome expectations for blogging played a more important role in blog-maintenance intentions in the American sample than in the Chinese sample. Generally, the data from the American sample fit the model better than the data from the Chinese sample. This might be because culturally specific items were removed to conduct structural equation model testing. More Chinese culturally relevant items, if incorporated into the model, might improve the strength of the paths in the model. Future research might continue to explore the interactions among self-efficacy, outcome expectations, anxiety, and intentions for blogging across cultures.

Besides the statistically significant differences for these four paths, the results of Study 1 suggested that cultural differences can be reflected in negative outcome expectations for blogging. Chinese culture is a collectivist culture. In collectivist cultures, the major normative task is to maintain harmony with others by coming to terms with their needs and expectations.

Chinese bloggers are more concerned with negative outcomes that would destroy the harmony they cherish. This was supported by the mean values of individual items of negative outcome expectations in the two samples. The mean value of the two negative outcome expectations most relevant to social relationship and collectivist culture (jeopardize my relationships, and feel shame because my weakness or my private life might be exposed) was higher ($M = 2.89$) in the Chinese sample than in the American

sample ($M = 2.40$). In the Chinese sample, the measure consisting of these two items' correlation with online posting anxiety was higher ($r = .424, p < .01$) than that of the American sample ($r = .389, p < .01$).

It should be noted that American bloggers also have negative outcome concerns. For example, an American interviewee, Jason (not his real name), needs to take his four types of audiences into account: his family, colleagues, friends, and himself. He worries that his colleagues and supervisors might judge him based on his blog. However, he revealed that if his colleagues do not like him because of his blog, he would not want to work with them. Jessica also expressed a similar view. These results might indicate that although American bloggers worry about negative outcomes, they equally value the selves they present on their blogs. Negative outcomes for blogging were not a very salient factor for American bloggers.

7. 6 Implications

The study has theoretical and practical implications. First of all, it adds to social cognitive theory in the following two ways: (1) it provides a model that resolves the conflicting views of cognition and anxiety; (2) it integrates cultural and trait perspectives in social cognitive theory. Specifically, one discrepancy of social cognitive theory arguments is the relationship between cognition and anxiety. On one hand, social cognitive theory states clearly that cognition influences anxiety. On the other, the theory states that affective states are a source of self-efficacy. Social cognitive theory fails to provide an explanation for these conflicting views. This research proposed a structural model that integrates the opposing perspectives. The proposed mechanism is that general anxiety will influence specific cognition. The specific cognition then will determine

specific anxiety. The causal relationship between cognition and anxiety is determined by the level and generality of the cognition and anxiety concepts.

Social cognitive theory has been criticized for underemphasizing the influence of culture on behavior. This research integrated the individualism/collectivism cultural dimension in a social cognitive theoretical model. The findings suggested that culture is compatible with social cognitive theory's triadic causal model. The individualism/collectivism cultural dimension is an E that produces and is produced by Ps and Bs. Incorporating the individualism/collectivism cultural dimension enriches social cognitive theory.

Second, previous research on blogging has usually focused on online journalism, self-presentation, identity, genre analysis, uses and gratifications, and social network analysis. No previous study, to the author's knowledge, has examined blogs within social cognitive models. Historically, the field of blogging research looked first at what a blog is (the format), what is being blogged (the content), and who blogs (the bloggers). Over recent years, blogging research added why blogging and how, the motivations and the processes. This research introduced blogging self-efficacy, negative outcome expectations for blogging, and positive outcome expectations for blogging. These variables can help to examine the effects of blogging, including how blogging influences the subjective well-being of bloggers. This current study might contribute to our understanding of blogs from the social cognitive perspective and may benefit new blog theory development.

Third, a new concept, online posting anxiety, is developed based on the literature of communication apprehension, writing apprehension, social anxiety, computer-

mediated communication apprehension, and computer anxiety. Many previous theories and measures of these concepts have limitations. For example, there has been a huge amount of research on computer anxiety in the last two decades. However, after critically reviewing this body of research, one is left with a sense of excitement over an area that is newly developed, but also a sense of disappointment at the (lack of) intellectual rigor and contribution to wider understanding that these studies combine to make. Much of the research has been rather atheoretical in its orientation, conceptualization, and design. Research in general simply addressed rather descriptive-level questions, and correlation analysis was the most commonly used data analysis method. Additionally, with the rapid development of computer technology and applications, the definitions and measurements of computer anxiety, which were developed in the late 1980s and early 1990s, might be inappropriate and outdated. Although the new construct of online posting anxiety focuses especially on blogging, it relates to diverse aspects of Internet use apprehension, such as computer anxiety, Internet anxiety, and privacy concerns. Online posting anxiety can contribute to our understanding of users' perceptions of and attitudes toward broad applications of the Internet and computing technology. Specifically, the current research made a unique and original contribution in that it applied social cognitive concepts to explain anxiety in a CMC domain. Anxiety is described as visceral arousal that is caused by low self-efficacy and negative outcome expectations. A structural model that demonstrates the process through which a specific type of anxiety interacts with cognitive factors and other anxiety factors on the Internet in different cultures was developed.

Online posting anxiety can contribute to the analysis of an important trend of the Internet—Web 2.0. Blogs are an important application of Web 2.0, along with video

sharing and the development of collective or open-source repositories of information such as Wikipedia. One of the important differences between the Internet and traditional mass media is that content creators on the Internet may include a wider variety of people, including those who are not media professionals. One of the common reasons behind the popularity of Web 2.0 is that anyone can create content and broadcast it to millions of potential audiences. A Pew report found that 44% of adult Internet users have used the Internet to publish their thoughts, respond to others, post pictures, share files, and otherwise contribute to the explosion of content available online. Twenty-one percent of Internet users say they have posted photographs to websites. Thirteen percent of Internet users maintain their own websites. Around 7% have webcams running on their computers, allowing other Internet users to see live pictures of them and their surroundings (Lenhart *et al.*, 2004). Lenhart *et al.*'s survey was conducted three years ago. It is reasonable to propose that a much higher percentage of Internet users now create online content. Online posting anxiety can benefit Web 2.0 research because online posting anxiety is an important obstacle for blogging or, more generally, creating content online. The understanding of the nature and the treatment of online posting anxiety can help to promote the use of Web 2.0.

There are practical implications. For usability researchers and interface designers, this dissertation can help to develop more user-friendly blogging services and authoring tools, thus offering bloggers a better user experience. Second, the knowledge about how different factors, such as experience, personality traits, and cognitive variables, influence the development of online posting anxiety can help researchers plan and design programs to change or reduce online posting anxiety. Meanwhile, online posting anxiety may

undermine self-efficacy and outcome expectations and decrease people's intention to set up a blog or update blogs. Different measures to reduce online posting anxiety can benefit people's cognitive self-evaluations and blog use. Third, blogs are now being portrayed as voices of people and political players and as catalysts for breaking stories (Perlmutter & McDaniel, 2005). The Internet is strictly regulated in China. Some people anticipate blogs to play a role that leads to more freedom and democracy in China. Before enthusiastic claims—including that blogs are rupturing China's social, cultural, and political fabric; blogs are promoting freedom of expression; and so on—are made about the revolutionary impact of blogs on Chinese society, scholars need to examine the complex adoption patterns of this online service by the Chinese. The diverse implications of blogs can only be realized after people start to use them. Examining the factors that influence Chinese's blog-maintenance intention might have implications for positive changes in China's Internet environment.

7.7 Future Study Areas

There are many issues future studies might investigate. Future studies might add other variables to the model and examine their power for explaining blogging patterns and behavior. For example, social cognitive theory's self-regulatory variables may be incorporated. Bandura posited that self-regulation, or people's control over their behavior, is an important determinant of behavior (Bandura, 1986). Self-regulation is concerned with norms, social standards, personal standards, and performance attributions (Bandura, 1986). Self-reflection helps individuals make sense of their experiences, explore their own cognitions and self-beliefs, engage in self-evaluation, and alter their thinking and behavior accordingly (Bandura, 1986). For blogging, interactions with and

feedback from audiences may be a source of self-regulatory beliefs. How bloggers' self-regulatory capabilities influence blogging behavior can be a topic for future study.

Anxiety sensitivity may also be considered. Anxiety sensitivity is conceptualized as the extent to which individuals fear their own anxiety and anxiety-related sensations (Taylor, 1999). Specifically, anxiety sensitivity may amplify individuals' responses to their own anxiety sensations and thereby produce a positive feedback cycle of anxiety (Asmundson et al., 2002). This concept may be applied to examine culture differences of blogging. Compared to bloggers in individualistic cultures, bloggers in collectivistic cultures may have higher scores of anxiety sensitivity because they worry that the anxiety they experience may jeopardize their social relationships.

Anxiety sensitivity might also interact with blogging self-efficacy and blogging outcome expectations to predict blog-maintenance behavior. Like general anxiety types, anxiety sensitivity may precede blogging self-efficacy and blogging outcome expectations. Future studies are needed to test this argument.

Blogging can be seen as a series of behaviors (e.g., set up a blog, update a blog, read others' blogs, and comment on others' blogs). Similar arguments can be found in stage models [health action process approach (Schwarzer, 1999, 2001, 1992) and the precaution-adoption process (Weinstein, 1988; Weinstein & Sandman, 1992)]. Stage models posit that, from a precontemplation stage through a motivation stage to the initiation and maintenance of behavior, different cognitive beliefs may be important at different points (Norman & Conner, 1996; Sandman & Weinstein, 1993). Following the logic of stage models, future studies may focus on those who have not started blogging

yet. A detailed analysis of the variables that are important in determining blogging set-up intention will provide a better account of the nature of blogging.

Future study might also examine different types of blogs, for example, focusing mainly on personal journal type blogs. As Bruns and Jacobs stated, “Our discussion of blogs, bloggers, and blogging must become more sophisticated; it makes as little sense to discuss the uses of blogs as it does to discuss, say, the uses of television unless we specify clearly what genres and contexts of use we aim to address” (Bruns & Jacobs, 2006). Future study may analyze how different genres and contexts influence blog cognitions, anxiety, intentions, and behavior. Employment status, gender, generation differences, and nonvoluntary blogging may be especially valuable topics for future investigations.

7.8 Limitations

There are several limitations of the current study. First of all, the causality and directions of causality of the influences from writing anxiety, social anxiety, blogging self-efficacy, negative outcome expectations for blogging, positive outcome expectations for blogging, and online posting anxiety to blog-maintenance intentions are still open to question, although the theory and the model’s overall goodness-of-fit both support the inclusion.

Researchers often assume that stable personality traits must influence what they believe to be the more transient feeling of anxiety; however, there is evidence that the reverse causal direction may be true (Cunningham, 1988). It is also possible that the relationship between online posting anxiety and blog self-efficacy and blog outcome expectations might be reciprocal (i.e., anxiety is both the antecedent and the outcome of

efficacy and outcome beliefs) (Crick & Dodge, 1994). Anxiety may increase or inhibit attention to emotion-relevant information, but, in turn, anxiety may be amplified or attenuated by information to which attention is directed (Vasey *et al.*, 1996). Social cognitive theory might suggest that as individuals experience higher anxiety, they report lower levels of efficacy and outcome expectations; however, as their efficacy and outcome belief levels rise, individuals report a corresponding decrease in anxiety (Thatcher & Perrewe, 2002).

The second limitation is related to the third variable effect. Other factors might have significant contributions to blog-maintenance intentions. Social norms, social network size, habit, and other demographic and psychological factors might play essential roles in explaining blog-maintenance intentions and other variables in the current model. Future studies might consider incorporating other factors in their models.

Another important limitation of our study is that it relies on self-reported, adjective-based emotion measures, which may bring bias (Davies *et al.*, 1998). Self-report measures assume that respondents are aware of their emotional experiences and are accurate in their observations of their own regulatory behavior (Heimberg *et al.*, 2004). However, differences in anxiety scores may arise because of one or more of the following reasons: (a) real differences in the intensity of the anxiety evoked by a stressful situation; (b) differences in the extent to which people recognize their own emotions; and (c) differences in the degree of conscious or unconscious distortion of responses due to social-cultural expectations and projected self-images (Spielberger & Sarason, 1991). More objective measures may be employed in future studies.

The same limitation is applicable to cognition and blog-maintenance behavior measures. As discussed earlier in this chapter, participants might experience difficulties when they try to assess the hours and minutes they blog. Other blog-use measures, such as content analysis or running a panel study that includes monitoring blog content, may be helpful to assess blogging usage. With regarding to blogging cognition measures, self-report might be a valid method. Barrett et al. suggested that self-report is useful and indeed essential for revealing the ontological structure of consciousness (Barrett et al., 2007). Additionally, Li argued that blogging is different from other forms of media consumption. It is a highly active action. It demands higher levels of cognition and motivation. Self-reports of bloggers offer relatively reliable materials to analyze their cognition (Li, 2005).

The fourth limitation is the small sample size and nonrandom sampling method. An increased sample size may generate more generalizable data for the blogger population. The Pew national blogging survey found that bloggers are evenly divided between men and women. More than half (54%) of bloggers are under the age of 30. Sixty percent of bloggers are white, 11% are African American, 19% are English-speaking Hispanic, and 10% identify as some other race (Lenhart & Fox, 2006).

In this research, the sample was 71.3% female and 28.7% male, and 43.8% of the participants were under the age of 30. The majority of respondents were Caucasian (64.8%). Other ethnic groups represented include African American (6.2%), Asian (16.6%), and others (4.8%). Differences were found between this sample and that of the Pew report.

CNNIC's China national blogging survey found that the sample had 51.1% female and 48.9% male respondents. The majority, 78.2%, of bloggers were under the age of 30. The Chinese sample in this research was 51.2% female and 48.8% male. A similar 79.6% of bloggers were under the age of 30. The sample was very comparable to the CNNIC's national sample.

This study used online postings of the survey URL and announcements to recruit participants. This method posed problems with tracking precise and reliable response rates. It is also very likely that truly anxious bloggers and those who experienced negative outcomes never even saw the recruiting websites. Babbie posited that nonprobability sampling methods are acceptable when random sampling is not possible (Babbie, 2001). Although results from Study 2 and the Main Study may suffer from self-selection bias (the sample may only represent those bloggers motivated to fill out the surveys), the findings may contribute to the understanding of blogging phenomena. Another limitation related to sampling method is that we only recruited bloggers between ages of 18 and 65 years. Herring suggested that adolescent bloggers are an important age group for blogging studies (Herring et al., 2004b). The findings of the current study cannot be applied to bloggers who are above or below the age range studied (18 to 65 years).

The final limitation concerns the cross-cultural research bias. Inherently different populations may blog in the U.S. and China and inherently different populations may see the recruitment websites. Additionally, comparing responses to scales of cross-cultural studies requires that researchers assume that what respondents mean when they say that they agree is sufficiently similar cross-culturally to make comparisons meaningful

(Oyserman *et al.*, 2002). The equivalence of the constructs across cultures might also be a threat to the validity of the study. Running measurement models is recommended for multiple group comparison structural equation modeling testing. However, measurement models could not be examined because of the small sample sizes. The sample sizes of the Main Study cannot afford to have two indicators for each latent variable. Although the equivalence of the constructs was tested with factor analysis to establish the reliability of the measures, the lack of measurement model testing is a limitation of this study.

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